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## Washer Machines for Sterilization

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Description of Functions</b>	
1.1	Washer Disinfector, single door, suitable for cleaning and disinfection of surgical instruments, anaesthetic equipment, suction bottles, cleaning buckets, general circulation goods, dental tray and glassware with a fully closed process.	
2	<b>System Configurations</b>	
2.1	The washer disinfector, fully automatic, should have an advanced micro-processor which controls all services, programming and statistic functions. For safety reasons the service and programming functions should be coded.	
2.2	The door should be provided with interlocking system.	
2.3	The Chamber made of stainless steel S.S 304	
2.4	The chamber should be equipped with four spray arms which ensure good water penetration from all directions.	
2.5	Various attachments should be provided to suit the load to be washed. Suitable dosage of detergent to be preset with the dosing pump.	
2.6	The provision of a double wall with insulation in between enables the Washer Disinfector to run with minimum sound and heat emission.	
2.7	The wash chamber, the inside the door, the pipework system and the circulation arms should be made entirely of stainless steel.	
2.8	Suitable for electrical operation on 400/440 volts, 3 phase, AC supply, electrical load 13 KW	
2.9	Should have the capacity of 250-275 ltrs.	
3	<b>Training</b>	
3.1	Must provide user & service training.	
4	<b>Warranty</b>	
4.1	Comprehensive warranty for 2 years.	
5	<b>Maintenance Service During Warranty Period</b>	
5.1	Supplier must ensure planned preventive maintenance (PPM) along with corrective/breakdown maintenance whenever required.	
6	<b>Documentation</b>	
6.1	User (Operatine) manual in English Should provide 2 sets(hardcopy and soft-copy)	
6.2	Service (Technical / Maintenance) manual in English Should provide 2 sets(hardcopy and soft-copy)	
6.3	List of important spare parts, accessories and consumables with their part numbers and costing.	

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## Laparoscopy Tower

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Description of Functions</b>	
1.1	Laparoscopic Tower Machine for Urology Department	
2	<b>Technical Specifications</b>	
2.1	<b>MONITOR:</b>	
	At least 27" FULL HD Monitor	
	Screen resolution 1920 x 1080 or better	
	Image format 16:9	
	Video inputs: 2x DVI, 1x 3G-SDI, 1x VGA, 1x S-Video, 1x Composite	
	Video outputs: 1x DVI, 1x 3G-SDI, 1xComposite, including: 1x External 24 VDC - Power Supply 1x Mains Cord 1x Cable Cover 4x Mounting Screws M4	
2.2	<b>FULL HD CAMERA SYSTEM</b>	
	1. With at least 2 camera inputs	
	2. Plug and play	
	3. Cross disciplinary	
	4. Compatible with rigid, flexible and single use endoscope	
	5. Easy control of menu via keyboard, mouse and camera head buttons	
	6. Patient data entry possible	
	7. Documentation via internal memory of 50GB and external storage medium - USB	
	8. 2 x DVI outputs	
2.3	<b>Inclusion:</b>	
	1. 1 main cord, 300 cm	
	2. 1 DVI-D connecting cable, 300 cm	
	3. 1 USB Flash Drive - 32 GB	
	4. 1 USB Silicone Keyboard with touchpad CAMERA HEAD	
	1. One-Chip FULL HD Camera Head 1920 X1080 pixels, 50/60 Hz	
	2. Fixed focus, progressive scan, focal length fr 16	
	3. Freely programmable camera head buttons	
	4. Standard eyepiece adaptor	
	5. Soakable, EO gas and hydrogen peroxide sterilizable	
	6. Weight = not more than 130 g	
	7. Plastic Container, for Sterilization and Storage of camera heads, autoclavable, suitable for use with steam, gas and hydrogen peroxide sterilization, compatible with existing sterilization system	
2.4	<b>TELESCOPE:</b>	
	Forward-Oblique Telescope 30°, enlarged view, diameter 10 mm, length at least 31 cm, autoclavable, fiber optic light transmission incorporated, color code: red	
2.5	<b>LIGHT SOURCE:</b>	
	1. Cold Light Fountain Power LED 175, high- performance LED and one light outlet, including: Mains Cord Connecting Cable	
	2. Fiber Optic Light Cable, with straight connector, extremely heat- resistant, enhanced light, transmission, diameter 4.8 mm, length at least 250 cm	
2.6	<b>INSUFFLATOR:</b>	
	1. Insufflator, with integrated Insufflator module, consisting of: Insufflator Connecting Cable, length 100 cm, Universal Wrench Insufflation Tubing Set, heatable, with gas filter, sterile, for single use, package of 10	
	2. Insufflation Tubing Set with Gas Filter, heated, 3m, hydrophobic on both sides, for single use, sterile, package of 10	
	3. Insufflation Tubing Set, reusable, sterilizable, heatable, 2.65m	
	4. Gas Filter, with connectors, hydrophobic on both sides, for single use, sterile, package of 25, for use with insufflation units with a maximum gas flow of 50 l/min	
	5. CO2 High Pressure Tube, length at least 102 cm	
2.7	<b>IRRIGATION:</b>	
	1. Fluid Management System	
	2. Interdisciplinary single roller pump for irrigation or suction with TFT (Thin Film Transistor) touch screen	
	3. Modular design can support basic functionalities across various fields of application.	
	4. Pump can be equipped with various software modules for multiple disciplines such as Lap, Hysteroscopy, Urology, Arthro and Spine.	
	5. Tubing set recognition, color coded tubing sets for clear identification. One hand installation of cassette Cartridge locking lever	
	6. HVS Irrigation pressure- 20 to 150 mmHg	
	7. HVS Irrigation flow rate: 200 to 600 ml/min	
	8. Urology Software License, for cystoscopy, resection, URS and PCNL	
	9. Advanced Software license for extended functions of installed software	
	10. Tubing Set, Irrigation, PC, sterile, for single use, package of 10	
	11. Tubing Set, Irrigation, PC, reusable, sterilizable	
2.8	<b>EQUIPMENT CART:</b>	
	1. Equipment Cart, wide, tall, rides on 4 antistatic dual wheels equipped with locking brakes, mains switch on cover, energy beam with integrated electrical sub distributors with 12 sockets, grounding plugs	
	2. Dimensions in mm (w x h x d): Equipment cart: At least 830 x 1474 x 730; Shelf: At least 630 x 25 x 510; Caster diameter: At least 150 mm, consisting of: Base Module, equipment cart, wide, cover, equipment cart, wide Beam Package, equipment cart, tall with 3 Shelves, wide Drawer Unit with Lock, wide Equipment Rail, long Camera Holder 2x Mains Cord, length 100 cm	
	3. Monitor Swivel Arm, height and sides adjustable, can be mounted on the left or on the right side, swivel range 180°, reach 780 mm, from center 1170 mm, loading capacity max. 15 kg, with monitor mount, for use with Equipment Carts	
	4. Sub rack for Mobile Stand, low, rides on 4 antistatic dual wheels, with locking brakes, low beam module incl. cable manager and handle, dimensions in mm (w x h x d): 670 x 1019 x 677, consisting of: Base Module for Mobile Stand Beam Module for Mobile Stand, small	
	5. CO2 High Pressure Tube, connection, length 102 cm	
2.9	<b>LAPAROSCOPIC HAND INSTRUMENTS:</b>	
	1. Grasping Forceps, rotating, dismantling, without connector pin for unipolar coagulation, with LUER-Lock irrigation connector for cleaning, double action jaws, fenestrated, with especially fine atraumatic serration, size 5 mm, length 36 cm, consisting of: Metal Handle, with disengageable ratchet Metal Outer Sheath, insulated Forceps Insert	
	2. Grasping Forceps, rotating, with connector pin for unipolar coagulation, size 5 mm, length 36 cm, atraumatic, fenestrated, curved, single action jaws, consisting of: Plastic Handle, with hemostat style ratchet Outer Tube, insulated Forceps Insert	
	3. Bowel Grasper, rotating, with connector pin for unipolar coagulation, size 5 mm, length 36 cm, fenestrated, double action jaws, consisting of: Plastic Handle, with hemostat style ratchet outer tube, insulated Forceps Insert	
	4. Claw Forceps, 2 x 3 teeth, rotating, with connector pin for unipolar coagulation, size 5 mm, length 36 cm, single action jaws, consisting of: Plastic Handle, with ratchet, with larger contact area outer tube, insulated Forceps Insert	
	5. KELLY Dissecting and Grasping Forceps, rotating, with connector pin for unipolar coagulation, size 5 mm, length 36 cm, double action jaws, consisting of: Plastic Handle, without ratchet, with larger contact area Outer Tube, insulated Forceps Insert	
	6. METZENBAUM Scissors, rotating, dismantling, with connector pin for unipolar coagulation, with LUER- Lock connector for cleaning, double action jaws, curved, length of jaws 15 mm, size 5 mm, length 36 cm, consisting of: Plastic Handle, without ratchet, with larger contact area at the finger ring Metal Outer Sheath, insulated Forceps Insert	
	7. Macro Needle Holder, with tungsten carbide insert, ergonomic pistol handle with disengageable ratchet, ratchet position left, jaws curved to left, size 5 mm, length 33 cm, for use with suture material size 0/0 to 7/0 and needle sizes BV, SH or CT-1	
	8. Macro Needle Holder, ergonomic pistol handle with disengageable ratchet, ratchet release on the right side, right curved jaws, with tungsten carbide insert ø 5 mm, length 33 cm	
	9. Coagulating and Dissecting Electrode, L- shaped, with connector pin for unipolar coagulation, size 5 mm, working length 36 cm	
	10. Suction and Irrigation Tube, with lateral holes, anti-reflex surface, with two-way stopcock for single-hand control, size 5 mm, length 36 cm	
	11. Suction and Irrigation Handle, with suction tube and irrigation/suction probe, sterile, for single use, package of 10, contains the Irrigation/Suction Probe for use in combination with irrigation tubing sets with patient-side silicone tube (inner diameter 5 mm)	
	12. Unipolar High Frequency Cord, with 8 mm plug, length 300 cm, for use with HF units	
	13. Bipolar Clamping Device Jaw Sealer	
	14. Bipolar Clamping Device Blunt Tip Open Sealer/Divider 5 mm, nano coated - 23 cm	
	15. Bipolar Clamping Device Blunt Tip Laparoscopic Sealer/Divider 5 mm, nano coated - 37 cm	
	16. Bipolar Clamping Device Maryland Jaw Laparoscopic Sealer/Divider 5 mm, nano coated - 23 cm	
	17. Bipolar Clamping Device Maryland Jaw Laparoscopic Sealer/ Divider 5 mm, nano coated - 37 cm	
2.9	<b>URETERO-RENSCOPE SET</b>	
	1. Ureterorenoscope 7Fr with 2 working channels 43cms;	
	2. Ureterorenoscope 9.5Fr 43cms; Ureteral forceps 3Fr 60cms	
2.10	<b>ENERGY DEVICE</b>	

1.	Energy Platform	
2.	Automatic Voltage Regulator (Max. Capacity: 2000 Watts)	
3.	Electrosurgical Device capable of monopolar hemostasis and dissection	
2.11.	<b>SWITCH</b>	
1.	Monopolar Footswitch	
2.	Bipolar Footswitch	
3.	Clamping device footswitch	
2.12.	<b>MISCELLANEOUS:</b>	
1.	Cautery button switch pencil cord with holster	
2.	Cautery pads	
3.	<b>Operating Environment</b>	
3.1.	The system offered shall be designed to store and to operate normally under the conditions of the purchaser's country. The conditions include Power Supply, Climate, Temperature, Humidity, etc.	
3.2.	Power supply: 220 – 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metre in length.	
4.	<b>Standards and Safety Requirements</b>	
4.1.	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
4.2.	CE (93/42 EEC Directives) or USFDA approved product certificate.	
5.	<b>User Training</b>	
5.1.	Must provide user training (including how to use and maintain the equipment).	
6.	<b>Warranty</b>	
6.1.	Comprehensive warranty for 2 years after acceptance.	
7.	<b>Maintenance Service During Warranty Period</b>	
7.1.	During warranty period supplier must ensure corrective/breakdown maintenance whenever required.	
8.	<b>Installation and Commissioning</b>	
8.1.	The bidder must arrange for the equipment to be installed and commissioned by certified or qualified personnel; any prerequisites for installation to be communicated to the purchaser in advance, in detail.	
9.	<b>Documentations</b>	
9.1.	User (Operating) manual in English.	
9.2.	Service (Technical / Maintenance) manual in English.	
9.3.	List of important spare parts and accessories with their part numbers and costing.	

3

Pediatric Endourology Set		
No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
<b>Telescopes</b>		
Straight Forward Tele- scope 0°, ø 1.9/2.1 mm, length 18 cm, autoclavable, fiber optic light transmission incorporated		
Forward-Oblique Telescope 30°, ø 1.9 mm/2.1 mm, length 18 cm, autoclavable, fiber optic light transmission incorporated		
Plastic Container, for sterilizing, suitable for steam, gas, and hydrogen peroxide sterilization and storage, perforated, with lid, external dimensions approx: (w x d x h): 321 x 90 x 45 mm, for use with two rigid endoscopes up to max. 20 cm working length.		
<b>Cystoscopy</b>		
Cystoscope-Urethroscope Sheath, 9.5 Fr., working length 14 cm, with 4 Fr. working channel, consisting of: Cystoscope-Urethroscope Sheath Obturator and 2 LUER-Lock Cones		
Cystoscope-Urethroscope Sheath, 11 Fr., working length 14 cm, with 5 Fr. working channel, consisting of: Cystoscope-Urethroscope Sheath Obturator and 2 LUER-Lock Cones		
Grasping Forceps double action jaws, flexible, 3 Fr., length 28 cm		
Biopsy Forceps, 3 Fr., double action jaws, flexible, length 28 cm		
<b>Resectoscope</b>		
Working Element, motion by means of a spring. The thumb support is movable. In rest position the electrode is inside the sheath.		
Resectoscope Sheath, with LUER-Lock stopcock, 11 Fr., consisting of: Resectoscope Sheath Obturator and Connecting Tube for inflow		
Telescope Bridge, with 1 lockable channel		
Cutting Loop angled		
Coagulating Electrode hook-shaped, ball end		
Coagulating Electrode, angled, pointed		
Coagulating Electrode, hook-shaped, without ball end		
Unipolar High Frequency Cord, with 4 mm plug, length 300 cm		
Protection Tube, for sterilization and storage of electrodes, loops, curettes and knives		
<b>Urethroscope</b>		
Pediatric Uretero-Renoscope:		
Distal tip: 7.3 Fr.		
Instrument sheath: 7.3 Fr., conical, 1step 7.3 – 8 Fr.		
Working channel: 3.6 Fr., for use with instruments up to 3 Fr.		
Telescope: Fiber optic system, direction of view 6°		
Working length: 25 cm		
Following accessories are included:		
Instrument Port with Sealing System and Quick Release Lock		
Seal, LUER-Lock/Tube Connector		
LUER-Lock/Tube Connector		
Flow Control Stopcock		
Cleaning Adaptor		
Insertion Aid		
Tray		
Instrument Port with Sealing System and Quick Release Lock 2 channels, 1 straight channel, 1 lateral channel		
Forceps for grasping stone fragments, rigid, double action jaws, 3 Fr., length 60 cm		
<b>Operating Environment</b>		
The unit shall be capable of operating in ambient temperature of 15°C-35°C and relative humidity of 10-95%		
The unit shall be capable of being stored continuously in ambient temperature of -5°C-40°C and relative humidity of 10-95%		
<b>Standards &amp; Safety Requirements</b>		
Must submit ISO13485:2003/AC:2007 for Medical Devices AND		
CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.		
<b>Warranty</b>		
Comprehensive warranty for 2 years.		

4

Pneumatic and Ultrasonic Lithotripsy System		
No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Description of Functions</b>	
1.1	Combined (Pneumatic and Ultrasonic) lithotripsy unit	
2	<b>Technical Specifications</b>	
2.1	Combined-	
a.	unit to generate energy for lithotripsy through shockwave during PCNL, cystoscopy and ureteroscopy; Adjustable pulse frequency; should work on power supply of 200-220 V; Ultrasonic lithotripsy system; Ultrasound frequency 24 - 26 KHz;	
2.2	Air compressor unit (integrated or separate) to generate pressure energy (8 bars) with tubing;	
2.3	Handpiece for pneumatic lithotripsy with tubing- Two numbers	
2.4	Handpiece for Ultrasound lithotripsy system with connection cable	
2.5	Footswitch/footswitches to operate the devices	
2.6	Pump suction system with tubing and suction bottle	
2.7	Appropriate Sterilisation tray	
2.8	Wrench	
2.9	Connecting cables, tubing and adaptors to make the unit functional	
2.1	Pneumatic probes (2 each) -	
a.	575-605 mm length; 1.6mm, 1mm & 0.8mm	
b.	375-500 mm length; 2mm, 1.6 -3.2mm & 1mm	
2.11	Ultrasound probes(2 each)	
i.	400-403mm length; 3.5- 3.8mm & 3- 3.3mm	
ii.	300-330mm length; 3.3-3.5mm & 3.5-3.8mm	
iii.	570- 573mm length; 1.5mm	
iv.	360-370 mm length; 1.5-1.9mm	
2.12	All major items including trolley should be from same manufacturer	
2.13	Price of each individual items should be quoted separately for easy purchase of spares, if needed, at later date for smooth functioning of instrument.	
2.14	Standard Accessories: The quotation should clearly mention the accessories (including quantity) which are part of the main equipment and the price of which is included in the main equipment. The equipment should be fully functional with the standard accessories.	
3	<b>Operating Environment</b>	
3.1.	The system offered shall be designed to store and to operate normally under the conditions of the purchaser's country. The conditions include Power Supply, Climate, Temperature, Humidity, etc.	
3.2.	Power supply: 220 – 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metre in length.	
4.	<b>Standards and Safety Requirements</b>	
4.1.	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
4.2.	CE (93/42 EEC Directives) or USFDA approved product certificate.	
5.	<b>User Training</b>	
5.1.	Must provide user training (including how to use and maintain the equipment).	
6.	<b>Warranty</b>	
6.1.	Comprehensive warranty for 2 years after acceptance.	
7.	<b>Maintenance Service During Warranty Period</b>	
7.1.	During warranty period supplier must ensure corrective/breakdown maintenance whenever required.	
8.	<b>Installation and Commissioning</b>	
8.1.	The bidder must arrange for the equipment to be installed and commissioned by certified or qualified personnel; any prerequisites for installation to be communicated to the purchaser in advance, in detail.	
9.	<b>Documentations</b>	
9.1.	User (Operating) manual in English.	

9.2	Service (Technical / Maintenance) manual in English.	
9.3	List of important spare parts and accessories with their part numbers and costing.	

5	<b>Complete Urology Tower</b>
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No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Description of Function</b>	
1	For complete urology system and survey procedure	
2	<b>Operational Requirements</b>	
2.2	System complete with thin flexible camera (endoscope)	
3	<b>System Configuration</b>	
3.1	As specified	
4	<b>Technical Specification</b>	
4.4	<b>Trolley:</b>	
	Customized, imported, epoxy powder coated/ stainless steel tower	
	Portable on 4 antistatic, antitrust, 360o swivel dual castors, 2 with brakes.	
	Shall have at least four shelves	
	Adjustable arm for fixing a flat monitor.	
	One drawer unit with lock and key.	
	Camera holder	
	Shall have excellent cable management system.	
	Power box with concealed wiring for providing electrical connections of proper rating to all the units.	
4.2	<b>Features of Full HD Endoscopic Camera and Camera Control Unit</b>	
	The system shall be truly Digital Full HDTV endoscopic video camera.	
	The system should have the maximum Resolution of 1920 X 1080 pixels, progressive scan and the consistent use of 16: 9 formats for Input & Output to guarantee genuine Full HDTV.	
4.3	<b>The system shall have following features:</b>	
	i. Visibly Improved Imaging: CCD sensing chip should optimize image quality & Digital Source Sampling thus maximizing hi-fidelity image transmission.	
	ii. Optimize to Any Size: The system should have Optical Zoom with 2x parfocal zoom lens to enhance the quality of image size & cross specialty standardization of the camera system, regardless of the telescope used	
	iii. Plug and Go: The system should automatically optimize all settings.	
	The system should be ready-to-use as soon as it is connected to the camera control unit.	
	iv. USB Port for Capturing FULL HD Videos/ HD Still Pictures: Captured digital images in format 16:9 can be displayed on WideView monitors in the same full HD format without being converted in order to prevent a loss if image quality caused by image stretching.	
	v. Integrated digital imaging processing module for a 5 level brightness regulation and 2 electronic anti-moirée filter for fiberoscopes.	
	vi. Parallel live display of visualization modes besides white light mode (picture-in-picture).	
	vii. Up to three different camera modules can be connected to the FULL HD video processor module	
	viii. Side-by-side live display of visualization mode next to white light image (picture-in-picture).	
	ix. Integrated picture-in-picture mode of two different camera modules in five different display sizes available.	
	x. Primary and secondary signal source change in picture-in-picture mode can be performed easily via camera head button.	
	xi. Changes in visualization modes, device control, digital zoom, brightness, video capture, still image capture and direct print orders, picture-in-picture mode, image direction, white balance and setup settings can be performed in sterile area via camera head buttons.	
	xii. Short starting time and customizable parameter adjustment.	
	xiii. Grid and pointer can be displayed for improved orientation and communication during surgery.	
	xiv. Grid and pointer can be displayed individually and together.	
	xv. 2 x digital zoom, adjustable in 5 levels.	
	xvi. Possibility of 180° image rotation	
	xvii. Possibility of vertical and horizontal image mirroring. Storage of up to 20 individual presets.	
	xviii. System overview is individually configurable and setup status can be directly displayed with intelligent icons.	
	ix. Parameter setup can be adjusted during surgery.	
	xx. In combination with a compatible three-chip FULL HD camera head the following modes can be activated without special light sources or filters:	
	a. Brightening of dark areas in the endoscopic image.	
	b. Dynamic contrast enhancement	
4.4	<b>Modular design:</b> Digital FULL HD camera module that should be compatible for use with video flexible endoscopes.	
4.5	<b>Camera control unit with camera head: 1 set</b>	
	i. Image Sensor: 3K/3" CCD-Chip	
	ii. Pixels: 1920 x 1080	
	iii. AGC :Microprocessor Controlled	
	iv. Lens : Integrated Zoom Lens f = 15-31 mm (2x optical zoom)	
	v. Minimum light sensitivity : 17 Lux (f = 1.4 mm).	
	vi. Control buttons: 3 (2 of them freely programmable).	
	vii. Up to three different camera modules can be connected to the FULL HD video processor module input for communication with compatible camera modules, LAN connection, 4 x USB connection (2 x front, 2 x back).	
	viii. Keyboard input for character generator: 5 - pole DIN socket.	
4.6	<b>Full HD 16:9 widescreen Medical Grade Monitor LED</b>	
	i. Full HD TFT Flat Screen 3d Monitor with stand size 32".	
	ii. Aspect Ratio: 16:9 HD format	
	iii. Brightness : 650 cd/m2	
	iv. Contrast ratio: 1400 :1	
	v. Screen Dimensions : 760 x 463 x 96mm	
	vi. Video Inputs : 2* DVI-D, 2* 3e-SDI, 1* Analog rgb(via vga), 1* s-video, 1* composite, 1* component-240 VAC	
	vii. Video Outputs: 2* DVI-D, 2* 3e-SDI, 1* s-video, 1* composite, 1* component	
	viii. Accessories External 24VDC Power Supply, Mains Cord, monitor stand, 3* 3d Polarisation g	
4.7	<b>Light source:</b>	
	Shall have long-life LED light source.	
	a. Lamp: 150 W	
	b. Shall have lamp with minimum: 30,000 hours or more	
	c. Must have color Temperatures 6000K or more	
	d. Facility of standby mode.	
	e. Light intensity adjustment continuously adjustable from 0 to 100% manually as well as fully automatically by the cameras video output signal.	
	f. Universal jaw assembly to adapt cable of any make of fibre optic cable without adapter.	
	g. Fibre optic light cable of size 4.8mm or as appropriate with the system in diameter and length 250-300 cm, the same must also be heat-resistant, with safety locking device	
5	<b>Accessories, spares and consumables</b>	
5.1	All standard accessories/consumables/parts required for the proper operation of the above item shall be included in the offer.	
6	<b>Operating Environment</b>	
6.1	The unit shall be capable of operating in ambient temperature of 10°C-45°C and relative humidity of 10-95%	
6.2	The unit shall be capable of being stored continuously in ambient temperature of -20°C-60°C and relative humidity of 10-95%	
7	<b>Power supply:</b>	
7.1	Input power supply: 220/240 V AC, 50Hz single phase schuko plug	
8	<b>Standards and Safety Requirements</b>	
8.1	Must submit ISO 9001 or ISO 13485:2003/AC:2007	
8.2	CE or USFDA or TUV approved product certificate.	
9	<b>Training</b>	
9.1	Must provide user & service training.	
10	<b>Warranty</b>	
10.1	Comprehensive warranty for 2 years after acceptance.	
11	<b>Maintenance Service During Warranty Period</b>	
11.1	Supplier must ensure planned preventive maintenance (PPM) along with corrective/breakdown maintenance whenever required.	
12	<b>Documentation</b>	
12.1	User (Operating) manual in English Should provide 2 sets(hardcopy and soft-copy)	
12.2	Service (Technical / Maintenance) manual in English Should provide 2 sets (hardcopy and soft-copy)	
12.3	List of important spare parts, accessories and consumables with their part numbers and costing.	

6	<b>Endourology Set for Adult</b>
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No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
	<b>Telescopes</b>	
	Straight Forward Telescope 0°, enlarged view, ø 4 mm, autoclavable, fiber optic light transmission incorporated.	
	Forward-Oblique Telescope 30°, diameter 4 mm, length 30 cm, autoclavable, fiber optic light transmission incorporated.	
	Telescope size 70	
	Plastic Container for Sterilization, especially suited for hydrogen peroxide sterilization and storage, perforated, with lid, external dimensions approx: (w x d x h): 446 x 90 x 45 mm, for use with two rigid endoscopes up to max. 32 cm working length	
	<b>Cystoscopy Set</b>	
	Cystoscope-Urethroscope Sheath, 22 Fr., consisting of: Sheath Obturator and 2 LUER-Lock cones	
	Cystoscope-Urethroscope Sheath, 19 Fr., consisting of: Cystoscope-Urethroscope Sheath Obturator and 2 LUER-Lock Cones	
	Cystoscope-Urethroscope Sheath, 17 Fr., consisting of: Cystoscope-Urethroscope Sheath Obturator and 2 LUER-Lock Cones	
	Telescope Bridge with 2 lockable instrument channels	
	Grasping Forceps for removal of foreign bodies, 7 Fr., double action jaws, flexible, length 40 cm	
	Biopsy Forceps, 7 Fr., double action jaws, flexible, length 40 cm	
	Grasping Forceps, for Foreign Bodies, 5 Fr., double action jaws, flexible, length 40 cm	
	Biopsy Forceps, 5 Fr., double action jaws, flexible, length 40 cm	
	<b>VIU Set</b>	
	Working Element for use with optical Urethrotome. Motion by means of a spring. The thumb support is movable. In rest position, the electrode is inside the sheath.	
	Urethrotome Sheath, 21 Fr., with channel for bougies consisting of: Urethrotome Sheath and 2 LUER-Lock cones	
	Obturator, for urethrotome sheath, 21 Fr.	
	Telescope Bridge, with channel for instruments up to 5 Fr.	

Supplementary Sheath, half-round, to insert a balloon catheter, to slip on urethrotome sheath
Supplementary Sheath, for continuous irrigation and suction, to slip on Urethrotome Sheath consisting of: 2Supplementary Sheath Sealing cap and LUER-Lock cones
Cold Knife straight
Protection Tube, for sterilization and storage of electrodes, loops, curettes and knives
<b>TUR Set (Monopolar &amp; Bipolar)</b>
Resectoscope Sheath, 26 Fr., oblique beak, rotating inner sheath with ceramic insulation, quick-release lock, consisting of: Resectoscope Sheath Inner Sheath Connecting Tube for In- and Outflow
Visual Obturator
Adaptor for use ofevacuator with resectoscope outer sheath
Evacuator, with locking device
Working Element, monopolar, Motion by means of a finger grip. In rest position the electrode is outside the sheath.
Cutting Loop, monopolar, 24/26 Fr.
Coagulating Electrode ball-shaped, diameter 3 mm, 24/26 Fr.
Unipolar High Frequency Cord, with 4 mm plug, length 300 cm
Working Element, bipolar, Motion by means of a finger grip. In rest position the electrode is outside the sheath.
Cutting Loop, bipolar, 24/26 Fr.
Coagulation Electrode, bipolar, pointed, 24/26 Fr.
Bipolar High Frequency Cord, length 400 cm.
Protection Tube, for sterilization and storage of electrodes, loops, curettes and knives
<b>Stone Punch</b>
Punch-Working Element
Punch Sheath, with central valve, 25 Fr., straight beak consisting of: Punch Sheath Obturator Connecting Tube for In- and Outflow
Sheath Insert, with channel for flexible instruments, 7 Fr., with atraumatic beak for urethroscopy, with two Seals
<b>URS Set (7 Fr.)</b>
Uretero-Renoscope:
Distal tip: 6.5 Fr.
Instrument sheath: 7 Fr., 1 step, 9.9 Fr.
Working channel: 4.8 Fr.
Telescope: Fiber optic system, direction of view 6°
Length: 43
Eyepiece: angled, rigid
The following accessories are included in delivery:
Uretero-Renoscope
Insertion Aid
Instrument Port with Sealing System & Quick Release Lock
LUER-Lock Tube Connector, male
LUER-Lock Tube Connector, with stopcock
Seal
Flow Control Stopcock
Wire Tray
Ureteroscope (Size 7 Fr.)
Ureteroscope (Size 8 Fr.)
Ureteroscope (Size 9 Fr.)
Flexible ureteroscopy short
Flexible ureteroscopy long
Ureteroscovp grasper forceps
Ureteroscovp biopsy forceps
Ureteroscovp scissor forceps
Cystoscopy size 22, 19,17
Cystoscopy size 25,19
Instrument Port with sealing system and quick release lock, 2 channels
Grasping Forceps for stone fragments, double action jaws, 4 Fr., rigid, length 60 cm
Grasping Forceps for large stone fragments, double action jaws, 4 Fr., rigid, length 60 cm
<b>PCNL Set</b>
Angle Straight Forward Telescope 6°, with parallel eyepiece, autoclavable, fiber optic light transmission incorporated with working channel, with LUER-Lock connection for inflow, including: 2 x Sealing Cap
Plastic Container, for Sterilizing and Storage perforated, with transparent lid, with inserts for two angled rigid telescopes
Telescope Bougie Set, for tract dilation, consisting of: Telescope Bougie Set, including 6 dilation sleeves 9, 12, 15, 18, 21 and 24 Fr., with 2 rigid guide wires and 2 flexible guide wires
Dilator, 27 Fr.
Dilator, 30 Fr.
Operating Sheath, 26 Fr., for continuous irrigation and suction, with LUER-Lock stopcock, rotatable
Obturator and Dilator
Forceps, for grasping larger stones and stone fragments, with serrated jaws and ring handle, double action jaws, 10.5 Fr., length 38 cm
Forceps, for grasping stone fragments and coagula, with fenestrated jaws and U-spring handle, 11.5 Fr., length 38 cm
<b>Operating Environment</b>
The unit shall be capable of operating in ambient temperature of 15°C-35°C and relative humidity of 10-95%
The unit shall be capable of being stored continuously in ambient temperature of -5°C -40°C and relative humidity of 10-95%
<b>Standards &amp; Safety Requirements</b>
Must submit ISO13485:2003(AC:2007 for Medical Devices AND
CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.
<b>Warranty</b>
Comprehensive warranty for 2 years.

**7 Electrical Orthopedic Drill**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Operational Requirements</b>	
	<b>Drill and Reamer Hand piece:</b>	
	• Selection of Drilling and Reaming with the built in Switch option DRILL/REAM in same hand piece	
	• Selection of the drilling and reaming with the same attachment	
	• Should have dual trigger for forward/ reverse and oscillation mode	
	• Maximum speed of 1200 rpm in drilling, 270 RPM in reaming	
	• Should have variable speed control on the hand piece	
	• Should deliver maximum torque of 150 in/lbs	
	• Drill torque should be 35 in/lbs	
	• Should have DC brush less motor for low maintenance	
	• With appropriate adaptors for drilling, reaming and pin placement and wire placement	
	• Future up gradation compatible for Navigation interface for Joint replacement surgeries	
	• Micro processor controlled Hand piece Can be calibrate for the consistence performance	
	• Weight of hand piece with battery should be not more then 3.5	
	• Fully Cannulated 4.0 mm hand piece	
	• Should have Pistol grip Hand piece	
	• Tool less 360 degree attachments insertion	
	• Should be autoclavable	
	• Dedicated Forward and Reverser switch with safe mode	
	• Can be calibrating for the consistence performance	
	<b>Sagittal Saw Hand piece:</b>	
	• Should have two speed controls with standard and fast mode. Free speed of 10000 -12000 cycles per minute	
	• Micro processor controlled Hand piece Can be calibrate for the consistence performance	
	• Saw Noise level should not more then 89db	
	• Weight of hand piece with battery should be not more then 3.5 lbs	
	• Blade mount should be adjustable to different angles with 360 degree rotation	
	• Should have tool less mounting of accessories	
	• Should have DC brush less motor	
	• Should be autoclavable	
	• Should have safe mode	
	<b>Reciprocating Saw Hand piece:</b>	
	• Should have Safe Mode	
	• Should have minimum 13500 CPM	
	• Weight of hand piece with battery should be not more then 3.5 lbs	
	• Micro processor controlled Hand piece Can be calibrate for the consistence performance	
	• Should have DC brush less motor for low maintenance.	
	• Should have Pistol grip Hand piece	
	• Should have tool less mounting of accessories for all blades or attachments .	
	• Saw noise level should not more then 93db	
	• Should be autoclavable.	
	• With different blades it should have maximum speed of 13500CPM	
	<b>Drill and reaming Attachments:</b>	
	• 1/4 inch Jacobs Drill Attachment with key	
	• Keyless Chuck	
	• Quick Connect attachment	
	• Reamer Attachment	
	• Hudson Modified Trinkle attachment	
	• Pin Collet Attachment	
	• K Wire Collet Attachment	
	<b>Battery Charger:</b>	
	• 220-240 volts charger and should have the feature to count the charging cycle for a particular battery.	
	• Should have capability to identify the worn out battery	

	<ul style="list-style-type: none"> <li>Should have to charge four batteries at a time</li> <li>Should have an indicator to provide battery status for charging.</li> <li>Should be able to check over autoclaved battery cycles (Number of Time and Total time)</li> </ul>	
	<b>Battery Kit:</b>	
	<ul style="list-style-type: none"> <li>NiMH/Ni Cd batteries - 4</li> <li>Should have a run time of minimum 17 minutes</li> <li>Should include Autoclavable outer housing</li> <li>Shield to protect battery from the housing</li> <li>Opening of battery housing for easy insertion of battery</li> <li>Should have option for autoclavable batteries</li> </ul>	
	<b>Sterilization Case:</b>	
	Should be accommodate all hand piece, attachment and accessories for autoclave	
	<b>3 Training</b>	
3.1	Must provide user & service training.	
	<b>4 Warranty</b>	
4.1	Comprehensive warranty for 2 years.	
	<b>5 Maintenance Service During Warranty Period</b>	
5.1	Supplier must ensure planned preventive maintenance (PPM) along with corrective/breakdown maintenance whenever required.	
	<b>6 Documentation</b>	
6.1	User (Operating) manual in English Should provide 2 sets(hardcopy and soft-copy)	
6.2	Service (Technical / Maintenance) manual in English Should provide 2 sets(hardcopy and soft-copy)	
6.3	List of important spare parts, accessories and consumables with their part numbers and costing.	

**8 General Orthopedic Set**

No.	Item Specifications	Fill your Specification
	<b>I Manufacturer Name:</b>	
	<b>II Model No.:</b>	
	<b>III Country of Origin:</b>	
	<b>1 Operational Requirements</b>	
1	SS TRAY - BIG (12INCH*15INCH) -Qty.4	
2	SS BOWL -BIG -Qty.12	
3	KIDNEY TRAY - LARGE -Qty.8	
4	KIDNEY TRAY - MEDIUM -Qty.4	
5	TOWEL CLIP -Qty.40	
6	SPONGE HOLDER -Qty.8	
7	BP HANDLE NO. 3 -Qty.4	
8	BP HANDLE NO. 4 -Qty.4	
9	BP HANDLE NO. 7 -Qty.4	
10	LENGAN BAG RETRACTOR - SMALL -Qty.8	
11	LENGAN BAG RETRACTOR - MEDIUM -Qty.8	
12	LENGAN BAG RETRACTOR - LARGE -Qty.8	
13	C-ZERNEY RETRACTOR -Qty.8	
14	SUCTION TIP - NO. 15 -Qty.4	
15	ADSON FORCEP - NON TOOTHED 12 CM -Qty.4	
16	ADSON FORCEP - TOOTHED 12 CM -Qty.4	
17	DISSECTING FORCEP - NON TOOTHED 12CM -Qty.4	
18	DISSECTING FORCEP - NON TOOTHED 15CM -Qty.4	
19	DISSECTING FORCEP - NON TOOTHED 18CM -Qty.4	
20	DISSECTING FORCEP - TOOTHED 12CM -Qty.4	
21	DISSECTING FORCEP - TOOTHED 15CM -Qty.4	
22	DISSECTING FORCEP - TOOTHED 18CM -Qty.4	
23	PERIOSTAL ELEVATOR - CURVED -Qty.4	
24	PERIOSTAL ELEVATOR - STRAIGHT -Qty.4	
25	MOSQUITO ARTERY - CURVED 10 CM -Qty.20	
26	MOSQUITO ARTERY - STRAIGHT 10 CM -Qty.20	
27	ARTERY FORCEP - CURVED 12 CM -Qty.20	
28	ARTERY FORCEP - STRAIGHT 12 CM -Qty.20	
29	ARTERY FORCEP - CURVED 15 CM -Qty.10	
30	ARTERY FORCEP - STRAIGHT 15 CM -Qty.10	
31	ARTERY FORCEP - CURVED 18CM -Qty.10	
32	ARTERY FORCEP - STRAIGHT 18CM -Qty.10	
33	ALLIS FORCEP - 12 CM -Qty.15	
34	ALLIS FORCEP - 15 CM -Qty.15	
35	ALLIS FORCEP - 18 CM -Qty.10	
36	KOCHERS CLAMP - STRAIGHT 12CM -Qty.10	
37	KOCHERS CLAMP - STRAIGHT 15CM -Qty.10	
38	KOCHERS CLAMP - STRAIGHT 20CM -Qty.10	
39	KOCHERS CLAMP - CURVED 12CM -Qty.10	
40	KOCHERS CLAMP - CURVED 15CM -Qty.10	
41	KOCHERS CLAMP - CURVED 20CM -Qty.10	
42	BARCOCK FORCEP - 15 CM -Qty.4	
43	BARCOCK FORCEP - 20 CM -Qty.4	
44	NEEDLE HOLDER - HEAVY 18 CM -Qty.4	
45	NEEDLE HOLDER - HEAVY 15 CM -Qty.4	
46	NEEDLE HOLDER - HEAVY 12 CM -Qty.4	
47	NEEDLE HOLDER - FINE TIP 12 CM -Qty.4	
48	METZ SCISSOR - CURVED 20 CM -Qty.4	
49	METZ SCISSOR - STRAIGHT 20 CM -Qty.4	
50	METZ SCISSOR - CURVED 15 CM -Qty.4	
51	METZ SCISSOR - STRAIGHT 15 CM -Qty.4	
52	MAYO SCISSOR - CURVED 15 CM -Qty.4	
53	MAYO SCISSOR - STRAIGHT 15 CM -Qty.4	
54	MIXTARD ARTERY - 12 CM -Qty.4	
55	MIXTARD ARTERY - 15 CM -Qty.4	
	<b>2 Operating Environment</b>	
2.1	The unit shall be capable of operating in ambient temperature of 15°C-35°C and relative humidity of 10-95%	
2.2	The unit shall be capable of being stored continuously in ambient temperature of -5°C -40°C and relative humidity of 10-95%	
	<b>3 Standards &amp; Safety Requirements</b>	
3.1	Must submit ISO13485:2003(AC:2007 for Medical Devices AND	
3.2	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
	<b>4 Warranty</b>	
4.1	Comprehensive warranty for 2 years.	

**9 Plaster Trolley**

No.	Item Specifications	Fill your Specification
	<b>I Manufacturer Name:</b>	
	<b>II Model No.:</b>	
	<b>III Country of Origin:</b>	
	<b>1 Technical Specifications</b>	
1.1	Material stainless steel (304 grade) frame complete with three sided	
1.2	2 X Bucket Holders (12L) and 35 cm bow)	
1.3	4 swivel castors	
1.4	Size: 900 x 450 x 850 mm Approx	
1.5	Height to top 900 mm Approx	
	<b>2 Operating Environment</b>	
2.1	The system offered shall be designed to store and to operate normally under the conditions of the purchaser's country. The conditions include Power Supply, Climate, Temperature, Humidity, etc.	
	<b>3 Documentations</b>	
3.1	User (Operating) manual in English.	

**10 Oxygen Regulator with Flow meter**

No.	Specifications	Fill your Specification
	<b>I Manufacturer Name:</b>	
	<b>II Model No.:</b>	
	<b>III Country of Origin:</b>	
	<b>1 Technical Specifications</b>	
	<b>1 Regulator:</b>	
	Bull nose screw type, medical oxygen cylinder fitting	
	Regulated to convert standard cylinder pressure (typically 2,000 psi) to approximately 4 BAR (4 atmospheres) pressure	
	Regulator delivery pressure must be factory pre-set, and not permit user adjustment	
	Maintenance engineer adjustment of delivery pressure via a screw slot or covered or capped system is required	
	Regulator must be diaphragm type needle valve regulators are NOT permitted.	
	The regulator must provide genuine pressure reduction and not just flow reduction	
	Regulator must incorporate overpressure safety valve with auto venting	
	<b>2 Flow Meter:</b>	
	Back Pressure Controlled Flow Meter	
	Sturdy and reliable Flow Meter Unit for an accurate measuring of flow of gases.	

	Chromium plated Brass body.	
	Metering tube and cover made of unbreakable Poly carbonate.	
	Flow adjustment by Needle valve equipped with inlet filter – 100 µm.	
	Flow rate range 0 – 15 litres / minute.	
	Inlet pressure suitable for the cylinder.	
	Flow meter to be attached to regulator output	
	<b>3 Bubble Humidifier with Safety Valve and Pressure Relief Valve:</b>	
	Lid made of ABS Plastic	
	Jar made of Unbreakable Poly Carbonate	
	Valve Brass chromium plated	
	Humidifier jar must be steam autoclaveable / gas sterilizable.	
	<b>4 Standards and Safety Requirements</b>	
4.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
4.2	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
5	User Training:	
5.1	Must provide user training (including how to use and maintain the equipment).	
6	<b>Warranty</b>	
6.1	Comprehensive warranty for 2 years after acceptance.	

11

Anesthesia Machine with 2 Vaporizers

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Description of Functions</b>	
1.1	Anaesthesia units dispense a mixture of gases and vapours and vary the proportions to control a patient's level of consciousness and/or analgesia during surgical procedures	
2	<b>Operational Requirements</b>	
2.2	It shall be suitable to be used for adult, paediatric and neonate patients.	
3	<b>System Configurations</b>	
3.1	It shall come with the main unit and two vaporizers, one for isoflurane and the other for halothane.	
4	<b>Technical Specifications</b>	
4.1	Suitable for adult, paediatric and newborn patients.	
4.2	The unit is mounted on a trolley with minimum of four (4) anti-static swivel castors, two of the castors are provided with breaks.	
4.3	The unit is equipped with an upper shelf.	
4.4	The cart has been proved with handles for manoeuvring.	
4.5	A side rail for mounting accessories is included.	
4.6	The unit has an adjustable patient-circuit support arm.	
4.7	Revolving support for possible inclusion of CO2 absorber.	
4.8	Gas inlet: 3 inlets, O2, N2O and Air.	
4.9	Gas cylinder yokes: O2 & N2O	
4.10	Should come with accessories for connecting gas supply both from central supply as well as from cylinders.	
4.11	<b>Flow meter:</b>	
	It shall come with 6 flow meter columns, 2 flow meter columns for each kind of gas.	
	The O <sub>2</sub> and N <sub>2</sub> O flowmeters have a minimum range of 0.0 – 10 L/min, and a resolution of at least 0.2 L/min.	
	The air flow meter have a minimum range of 0.0 – 10 L/min, and a resolution of at least 0.2 L/min.	
	Flows and the mixture ratios determined from flowmeter settings are accurate to within ± 10% of set values or better.	
	The unit has the ability to carry out self-diagnosis and integrity testing, including a compliance and leakage test.	
	The unit are equipped with gas supply gauges with scales allowing easy readout.	
	Battery backup for not less than 60 minutes of operation	
	Autoclaveable CO2 absorbent canister with minimum 2.5kg soda lime.	
	The unit is equipped with a non-return and a three-way valve, including the connection tube.	
	All circuits shall be detachable, washable and Autoclaveable at most with steam of 134 degree C	
4.12	<b>Vaporizer</b>	
	Type of vaporiser - shall be concentration calibrated type, such as variable bypass or heated blender or equivalent	
	It shall accommodate two vaporizers	
	Come with 2 sets of concentration calibrated type vaporizers and two sets of compatible fillers for one for isoflurane and the other for halothane.	
	Stainless steel supporting arm with two articulations and rail clamp	
	Vaporizer is to be maintenance free with easy re-filling	
4.13	<b>Ventilator</b>	
	Microprocessor based electrically powered and electrically controlled ventilator	
	Operating modes: Manual, spontaneous, VCV	
	Tidal Volume: approximately 20 - 1500 ml	
	The unit should be able to support a minimum ventilation frequency range between 1 – 100 bpm.	
	The unit supports an I/E ratio 4:1 to 1:10	
	The unit supports an inspiration pressure of 5 – 70 cmH <sub>2</sub> O	
	The unit supports a peak inspiratory flow range of 1 – 70 L/min.	
	The unit supports PEEP with a range of 3 – 30 cmH <sub>2</sub> O	
	The unit supports pressure triggers in the range of 0 – 20 cmH <sub>2</sub> O	
	Pressure gauges have a range of 0 – 100 cmH <sub>2</sub> O and an accuracy of: ±2.5 % or better.	
4.14	<b>Monitoring</b>	
	The ventilation monitors following parameters, through a combination of numerical and waveforms:	
	- Respiratory rate (spontaneous and mechanical).	
	- Tidal volume (inspired and expired).	
	- Minute volume (spontaneous and mechanical).	
	- Airway pressure.	
	- PEEP.	
	- Compliance.	
	- O <sub>2</sub> Concentration.	
	- I:E ratio.	
	- Inspiration and expiration times.	
	- Automatic compliance and leakage compensation for circuit and tubes.	
4.15	<b>ALARM AND SAFETY FUNCTIONALITIES</b>	
	Alarms are categorized in three categories: caution, advisory and alarm.	
	The unit is equipped with audio and visual alarms for the following parameters:	
	- High airway pressure alarm.	
	- Sub atmospheric pressure alarm.	
	- Respiratory rate alarm.	
	- Minute volume alarm.	
	- Tidal volume alarm.	
	- Expiratory flow alarm.	
	- FiO <sub>2</sub> supply failure alarm.	
	- O <sub>2</sub> supply failure alarm.	
	- Low pressure/apnoea alarm.	
	- External O <sub>2</sub> gas supply failure alarm.	
	- Low battery alarm.	
	- Power failure alarm.	
	- Sensor disconnected alarm.	
	- System or sensor failure alarm.	
4.16	The unit has a provision that prevents an anaesthesia machine from being set to dispense a hypoxic mixture. The N <sub>2</sub> O and O <sub>2</sub> flow controls are interlocked so that the proportion of O <sub>2</sub> to N <sub>2</sub> O can never fall below a minimum value of 25% to produce a hypoxic breathing mixture.	
4.17	The unit has a provision that protects the patient from inadequate O <sub>2</sub> supply. If the O <sub>2</sub> supply pressure drops below 1.7 - 2.1 Bar (25 to 30 psi), the unit decreases or shuts off the flow of other gases and activates an alarm.	
4.18	The unit is equipped with an Adjustable Pressure Limiting (APL) valve to prevent delivery from too high-pressured gas.	
4.19	The unit should have a provision for emergency O <sub>2</sub> by-pass.	
4.20	<b>DISPLAYED PARAMETERS</b>	
	The unit is equipped with a flat panel colour display indicating the following parameters and traces:	
	Three (3) traces against time: pressure, volume, and flow.	
	Two (2) two-axis display: Pressure-Volume and Flow-Volume.	
	Values for all monitored parameters.	
	Alarm settings for all monitored parameters.	
	Alarms or errors in ventilation or anaesthesia parameters.	
	Current time.	
	Ventilator mode.	
	Battery status.	
	System events.	
5	<b>Accessories, Spare Parts and Consumables</b>	
5.1	All standard accessories/consumables/parts required for the proper operation of the above item shall be included in the offer.	
5.2	1 x newborn reusable breathing circuit (tubes/balloon/valves/mask).	
5.3	1 x paediatric reusable breathing circuit (tubes/balloon/valves/mask).	
5.4	1 x adult reusable breathing circuit (tubes/balloon/valves/mask).	
5.5	Connecting hose with regulator/ flow meter or probe for connection to PIN index oxygen cylinder and BOC type oxygen wall outlet, at least 5 meter length, 1 set	
5.6	Connecting hose with regulator/ flow meter or probe for connection to N2O cylinder or N2O wall outlet, at least 5 meter length, 1 set	
5.7	Connecting hose with regulator/ flow meter or probe for connection to air cylinder or wall outlet, at least 5 meter length, 1 set	
5.8	Silicone test lung adult and child size, 1 set each	
5.9	1 x spare parts/maintenance kit (air filters, tubing, O-rings).	
5.1	O2 sensor, 1 set	
6	<b>Operating Environment</b>	
6.1	The unit shall be capable of operating in ambient temperature of 15°C-35°C and relative humidity of 10-95%	
6.2	The unit shall be capable of being stored continuously in ambient temperature of -5°C -40°C and relative humidity of 10-95%	

7	<b>Power supply:</b>	
7.1	Input power supply: 220/240 V AC , 50Hz single phase schuko plug	
6.1	Power supply: 220 – 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metres in length.	
8	<b>Standards &amp; Safety Requirements</b>	
8.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
8.2	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
8.3	80601-2-13 Medical electrical equipment – Part 2-13: Particular requirements for the safety and essential performance of anaesthetic systems.	
8.4	80601-2-55 Medical electrical equipment – Part 2-55: Particular requirements for the basic safety and essential performance of respiratory gas monitors.	
9	<b>Training</b>	
9.1	Must provide user & service training.	
10	<b>Warranty</b>	
10.1	Comprehensive warranty for 2 years.	
11	<b>Maintenance Service During Warranty Period</b>	
11.1	Supplier must ensure planned preventive maintenance (PPM) along with corrective/breakdown maintenance whenever required.	
12	<b>Documentation</b>	
12.1	User (Operating) manual in English Should provide 2 sets(hardcopy and soft-copy)	
12.2	Service (Technical / Maintenance) manual in English Should provide 2 sets(hardcopy and soft-copy)	
12.3	List of important spare parts, accessories and consumables with their part numbers and costing.	

12

Neonate Ventilator		
No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Operational Requirements</b>	
1	The ventilator should be microprocessor controlled designed for neonatal use with possibility to upgrade with additional features.	
2	Continues flow, pressure limited, time cycled ventilator design	
3	Ventilator modes: should have following modes available in the unit	
a)	IMV/PPV	
b)	CPAP including non-invasive ventilation	
c)	SIMV, SIPPV/Assist-control	
d)	High frequency oscillatory ventilation which is oscillating diaphragm based	
e)	Volume targeted/guarantee mode of ventilation with ability to deliver and monitor tidal volume as low as 1-2 ml (Range 2 ml to 50 ml)	
f)	Pressure support mode of ventilation	
g)	Apnoea back-up ventilation	
4	Should have integrated high resolution LCD screen minimum 10-12" color display with touch screen facility for real-time display of scalar (Pressure, Flow and Volume against time) and loop (Pressure-volume, volume-flow and pressure-flow). Graphic display of at least 3 waveforms together out of choice of flow, volume and pressure versus time with a facility to freeze these waveforms. Facility for loops together with a facility to freeze the same.	
5	Should have graphical as well as tabular trend facility of data up to 24 Hrs	
6	Digital display of FIO2, peak pressure, mean airway pressure, CPAP/PEEP, Expiratory tidal volume, expiratory minute volume, total frequency, spontaneous frequency, lung function monitoring including compliance, resistance, lung distention coefficient, (C20/C), Lung time constant.	
7	Should have built-in logbook for recording events like various alarms	
8	Integrated monitoring: Integrated volume and pressure monitoring i.e. monitoring of PEEP Pmax, Pmean and VT, Vtspont, MV and MVleak. The volume monitoring should have NTPD to BTPS correction.	
9	Monitoring of I:E, frequency and Spontaneous Frequency.	
10	Settings range:	
a)	Trigger Flow/ volume, leak adapted	
b)	PIP: 10 to 80 cm H2O	
c)	PEEP/ CPAP 0 to 25mbar	
d)	I:E ratio:0 to 1:10	
e)	Insp. Time 0.1 to 2 Sec	
f)	Exp. Time 0.2 to 30 sec	
g)	Frequency Up to 200 BPM	
h)	Base Flow (WIVE) 1 to 30 LPM	
i)	Synchronization Patient synchronization with adjustable flow trigger	
j)	High frequency amplitude: 1-100%	
k)	Integrated blender for Oxygen 21% to 100%	
l)	Integrated nebulization facility	
m)	Integrated monitoring of FIO2	
11	Monitoring of flow is possible	
12	Should measure parameters in HFOV such as DCO2, VTHF.	
13	Ventilator should have following features in Pressure Support/ Volume Guarantee:	
a)	It should be possible to give leakage adapted inspiratory trigger during pressure support to spontaneously breathing patients with a set volume guarantee.	
b)	Volume guarantee should be regulated with lowest possible airway pressure within a set PIP.	
c)	It should be possible to adjust the Volume Guarantee.	
14	Audiovisual alarms with advisory on-screen message: MV high/Low, Apnea, tube obstruction, FIO2 high/low high PIP, low PEEP/CPAP, fail to cycle, gas supply low, power failure, ventilator inoperative, alarm log book	
15	The ventilator should have automatic compensation for leakage and should monitor and display leakages	
16	The ventilator should show trends of important parameters viz. CR, FIO2, MAP etc. for evaluation of patient improvement	
17	Ventilator should be US FDA/ European CE approved from a notified body with a 4-digit notification number.	
18	Ventilator should be supplied with Good quality medical air compressor (US FDA/ European CE marked from a certified body)	
19	The Servo Controlled Heated wire Humidifier should be supplied along with Reusable patient circuit. The humidifier must be USFDA/ European CE approved form a notified body with a 4-digit notification number	
20	Battery back-up (at least 30 minutes) Battery should be integrated and should provide backup to both ventilator & Air compressor	
21	Should be supplied with ultrasonic nebulizer which should have capability to deliver particle size of < 3 micron and to be used in both off and on line with ventilator.	
22	Training CD/DVD	
23	List of consumables expected to be used in one year should be provided and quoted separately. Prices so quoted to be frozen for 5 years	
24	The department will like to have a live demonstration of the equipment	
25	Instruction manual to be supplied with the quotation	
26	Company should certify that model quoted is latest and not obsolete, and spares are available for minimum 5 years after warranty.	
27	Should have O2 Sensor. Company will provide life time warranty on Oxygen sensor.	
28	Quoted firm should have a functional local service setup for after sales service	
29	Ventilator should have Up gradation facility with ETCO2	
30	Machine should have facility to set exp flow different than inspiratory flow to help in ETCO2 flush	
31	Scope of supply with each ventilator	
a)	Ventilator on trolley with wheels and brake facility	
b)	Integrated medical air compressor on the same trolley.	
c)	Autoclavable humidifier chamber (2 with each ventilator)	
d)	Circuit support arm	
e)	2 hose sets for conventional reusable neonatal smooth bore ventilation circuit both inspiratory and expiratory heated wire embedded. If heater wire is not embedded, 2 for each ventilator should be supplied separately.	
f)	2 hose sets for reusable HF ventilation, if different from normal circuits.	
g)	1 hose set for reusable HF ventilation	
h)	Bacterial filters disposable	
i)	Flow sensors (60 disposable sets and 2 pieces reusable)	
j)	Oxygen connecting hose	
k)	Air connecting hose	
l)	Test lung	
m)	Temperature probe (3 each)	
n)	Expiratory valve (2 with each)	
o)	Nasal Interface (3 in number) with nasal mask (3 each of all sizes) and nasal prongs (4 each of all sizes) and bonnet (5 each of only preterm size) with each ventilator.	
32	The ventilator should have following options	
a)	RS 232C port for data transfer and software compatible with windows	
b)	Communication interface with Laptop	
c)	PC software for archiving and analysis	
d)	Provision for future software/ hardware upgrades should be available	
33	Machine should have automatic calibration for O2 sensor	
34	Humidifier should also be automated servo controlled.	
2	<b>Operating Environment</b>	
2.1	The unit shall be capable of operating in ambient temperature of 15°C-35°C and relative humidity of 10-95%	
2.2	The unit shall be capable of being stored continuously in ambient temperature of -5°C -40°C and relative humidity of 10-95%	
3	<b>Power supply:</b>	
3.1	Input power supply: 220/240 V AC , 50Hz single phase schuko plug	
3.1	Power supply: 220 – 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metres in length.	
4	<b>Standards &amp; Safety Requirements</b>	
4.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
4.2	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
4.3	80601-2-13 Medical electrical equipment – Part 2-13: Particular requirements for the safety and essential performance of anaesthetic systems.	
4.4	80601-2-55 Medical electrical equipment – Part 2-55: Particular requirements for the basic safety and essential performance of respiratory gas monitors.	
5	<b>Training</b>	
5.1	Must provide user & service training.	
6	<b>Warranty</b>	
6.1	Comprehensive warranty for 2 years.	
7	<b>Maintenance Service During Warranty Period</b>	
7.1	Supplier must ensure planned preventive maintenance (PPM) along with corrective/breakdown maintenance whenever required.	
8	<b>Documentation</b>	
8.1	User (Operating) manual in English Should provide 2 sets(hardcopy and soft-copy)	
8.2	Service (Technical / Maintenance) manual in English Should provide 2 sets(hardcopy and soft-copy)	
8.3	List of important spare parts, accessories and consumables with their part numbers and costing.	

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Auto CPAP		
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No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Description of Functions</b>	
1.1	Should be an auto adjusting CPAP with pressures ranging from 4 to 20 cmH2O	
1.2	Unit should be light weight (less than 1.5 Kg) and noise less than 30 dBA	
1.3	The unit should have an automatic altitude setting.	
1.4	The unit should have an Automatic mode & manual mode of selection.	
1.5	Should have an Ramp Time Automatic of 5 - 45 minutes	
1.6	Should have a backlit LCD display for easy viewing	
1.7	Should be able to change the settings with easy to use rotary control dial	
1.8	The unit should have comfort feature A-Flex which adjusts air pressure based on patient need on every inhalation & exhalation	
1.9	Unit should have C-flex/C-Flex+ mode when unit is running as manual CPAP.	
1.10	The unit should have System one resistance control for optimized pressure delivery, no matter which mask is used	
1.11	Mask fit and seal monitoring should be capable to check the seal of the mask.	
1.12	Should have advanced event detection algorithm which detects and records CA, OA, CSR, RERA, Hypopnea, Vibratory snore, Large Leak & Flow limitation for helping the physicians in opting for alternate therapy.	
1.13	Should have Memory for recording the usage & compliance data	
1.14	The unit should have 2 years warranty	
1.15	CE or USFDA or TUV approved certificate.	
1.16	MASK: Should be able to select between medium and small size.	
1.17	Mask should be provided with angled exhalation micro ports.	
1.18	Should have blue gel with silicon membrane to create an effective self adjustment seal.	
1.19	The mask should have silicone spring facility to enable patient to move in any direction.	
1.20	HUMIDIFIER also should be supplied along with the System and should be of dry box technology such that it takes the room humidity into account while humidifying.	
1.21	Tubing connection to be at the top of the humidifier unit.	
1.22	Should have sensors both inside and outside the machine to allow it to accurately make changes in humidity and prevent condensation from forming inside the tube.	
1.23	Power supply: 220 – 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metre in length.	
2	<b>User Training</b>	
2.1	Must provide user training (including how to use and maintain the equipment).	
3	<b>Warranty</b>	
3.1	Comprehensive warranty for 2 years after acceptance.	
4	<b>Maintenance Service During Warranty Period</b>	
4.1	During warranty period supplier must ensure corrective/breakdown maintenance whenever required.	
5	<b>Documentation</b>	
5.1	User (Operating) manual in English.	
5.2	Service (Technical / Maintenance) manual in English.	
5.3	List of important spare parts and accessories with their part numbers and costing.	

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## Bubble CPAP

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Description of Functions</b>	
1.1	Should be suitable for treating newborns with respiratory distress weighing 500-5000g.	
1.2	The CPAP pressure with oscillations should be generated by creating resistance in water column and bubbling of exhaled gas in the water column.	
1.3	Should essentially have the following components.	
A	<b>Servo Heated Humidifier</b>	
i	It should have servo controlled heated humidifier with following features.	
i.	Temperature and flow sensor with feedback mechanism.	
ii.	Monitoring temperature of gas at chamber end and near patient end.	
iii.	Display for temperature of saturated gas.	
iv.	Should have separate modes for invasive and non-invasive ventilation.	
v.	Should have alarms for high temperature/low temperature, low water in chamber, Heater adapter faulty/disconnect, Temp cum probe faulty/disconnect and hardware faults .The Humidifier should provide a visual indication as to the location of the fault.	
B	<b>Patient Delivery system</b>	
i.	The patient heating circuit should have integrated spiral heated coil for uniform heating.	
ii.	Humidification chamber should have facility for auto feed and have a chamber compressible volume of at least 260-300 ml. The chamber should have a max peak flow of at least 180l/m.	
iii.	Should be supplied with Nasal prongs/masks of silicon useful for babies weighing between 750-2500g. It should be provided as standard accessory. The nasal masks should be suitable for preterm and term babies. The mask should be soft and anatomically shaped.	
iv.	Should be supplied with flexible nasal tubing which should be adaptable with the infants movement.	
v.	The nasal tubing should enable prong or mask re-positioning and keep straps away from the patients face.	
vi.	Should be supplied with infant caps for 17-36cm circumference.	
vii.	Should be supplied with nasal cannula which should be kink proof and have adhesive to secure on skin and facilitate kangaroo mother care. The adhesive used should be neonate skin friendly.	
C	<b>CPAP Bubble Generator</b>	
i.	CPAP Bubble generator should have adjustable probe for pressure settings 3-10cm of H2O. It should have detachable overflow container to maintain constant water level with a minimum volume of 500ml.	
ii.	The system should have safety mechanism with pressure relief valve and ports for pressure and fio2 monitoring.	
D	<b>Air-Oxygen Blender</b>	
i.	Should have portable and lightweight and weight under 2 kg.	
ii.	Should have provision for adjusting fio2 from 21%-100%.	
iii.	The accuracy of the set value should be within ±3%.	
iv.	Should provide a output flow rate between 0-30LPM.	
v.	The Blender should be able to support an input supply pressure from 2-5 bar.	
vi.	Should have inlets for connection of air and oxygen. Necessary tubing's and adapters to connect from the external gas supply sources(air and oxygen) may be supplied as standard accessories	
vii.	Should also have provision for connecting to central air and central oxygen outlets. Necessary tubing's and adapters/key plugs may be supplied in this regard	
viii.	Necessary adapters towards mounting the blender on IV pole may be supplied as standard.	
ix.	Should be supplied with a flow meter (0-15LPM)including the wing nut towards controlling the output flow	
1.4	<b>ACCESSORY</b>	
i.	CPAP generator – 1 No	
1.5	<b>CONSUMABLES</b>	
A.	Patient circuit with humidifier chamber - 20 Nos	
B.	Nasal prongs (small, medium, large)-20each	
C.	Nasal Masks (small,medium,large)-20 each	
D.	Nasal Tubing-20 Nos.	
E.	Nasal cannula-20 Nos.	
F.	Infant caps (small,medium,large)-20 Nos.	
G.	The cost of the above mentioned accessory and consumables' may be separately quoted which would be valid throughout the period of warranty.	
H.	Should be supplied with a trolley mounted on quality castors to fix the humidifier, CPAP generator, IV hooks, mounting brackets for gas supply lines etc. The required adapters/fixtures for mounting the same should be supplied as standard.	
1.6	Should have safety certificate from a complete authority CE Issued by a notified body registered in European commission/FDA (US)	
2	<b>User Training</b>	
2.1	Must provide user training (including how to use and maintain the equipment).	
3	<b>Warranty</b>	
3.1	Comprehensive warranty for 2 years after acceptance.	
4	<b>Maintenance Service During Warranty Period</b>	
4.1	During warranty period supplier must ensure corrective/breakdown maintenance whenever required.	
5	<b>Documentation</b>	
5.1	User (Operating) manual in English.	
5.2	Service (Technical / Maintenance) manual in English.	
5.3	List of important spare parts and accessories with their part numbers and costing.	

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## Pediatric Basic Surgery Set

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Operational Requirements</b>	
1.1	1 Scalpel Handle #3	
1.2	1 Iris Scissors Straight 5/5 4 1/2"	
1.3	1 Metzenbaum Scissors Curved 5 3/4"	
1.4	1 Metze Lohy Delicate Scissors Straight 5 3/4	
1.5	1 Metze Lohy Delicate Curved Scissors 5 3/4	
1.6	6 Micro Mosquito Straight 5"	
1.7	6 Micro Mosquito Crvd 5"	
1.8	4 Crile Forceps Curved Delicate 5 1/2"	
1.9	4 Kocher Forceps Straight Delicate 1x2 5 1/2"	
1.10	4 Kocher Forceps Curved Delicate 1x2 5 1/2"	
1.11	2 Baby Mixer 5" Curved Part Serr	
1.12	2 Baby Mixer 7" Curved Part Serr	
1.13	6 Backhaus Towel Clamp 3 1/2"	
1.14	4 Ballenger Spong Forceps Straight Serrated 7"	
1.15	1 Ryder Nh Micro Serrated 6" Tc	
1.16	2 Tissue Forceps 1x2 5"	
1.17	1 Dress Forceps Delicate Serrated 5	
1.18	2 Tissue Forceps Delicate 1x2 5 1/2	
1.19	1 Tuttle Forceps 7"	

1.20	2 Allis TISS Forceps 5x6 6"
1.21	2 Allis TISS Delicate Forceps 4x5 5 1/2"
1.22	2 Babcock Forceps 5 1/2"
1.23	1 Benson Pylorus Separator 5 3/4"
1.24	1 Payr Pylorus Clamp Lt 5 3/4"
1.25	1 Probe Double End 5"
1.26	1 Probe Double End 5"
1.27	1 Poole Suction Tube 16fr 7 3/4"
1.28	2 Trach Retractor Blunt 3 Prong 6 1/2"
1.29	2 Roux D/e Retractor Small 5 1/2"
1.30	2 Langenbeck Retractor Small 9"
1.31	2 Langenbeck Retractor Large 9"
1.32	1 Deaver Retractor 5/8 X 5"
1.33	2 Zaklind Ribbon Retractor 1 1/4 7 7/8"
1.34	1 Weitlanes Beckman Ret Sh 3x4 6"
1.35	1 Balfour Retractor 1 1/4"pediatric
1.36	2 Micro Adson Forceps Serrated 4 3/4"
1.37	1 Hajjht-finochietto Retractor 3 1/2"
1.38	1 Bailey Rib Contractor
1.39	1 Frazier Suction Tube 8fr
1.40	2 Desmarres Lid Retractor 16mm 5 1/2"
2	<b>Operating Environment</b>
2.1	The unit shall be capable of operating in ambient temperature of 15°C-35°C and relative humidity of 10-95%
2.2	The unit shall be capable of being stored continuously in ambient temperature of -5°C -40°C and relative humidity of 10-95%
3	<b>Standards &amp; Safety Requirements</b>
3.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND
3.2	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.
4	<b>Warranty</b>
4.1	Comprehensive warranty for 2 years.

**16** **Laparotomy Set**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Technical Specification</b>	
	Set contains:	
1	Kidney Tray Large - Qty.6	
2	Ss Bowl - Qty.12	
3	Towel Clip - Qty.1	
4	Bp Handle No. 7 - Qty.2	
5	Suction Tip 2mm - Qty.3	
6	Suction Tip 5mm - Qty.3	
7	Yankaur Suction Tip 10 Mm-31 Cm - Qty.3	
8	Ss Scale - Qty.3	
9	Dissecting Tooth Forcep 16 Cm - Qty.6	
10	Adson Tooth Forceps 12 Cm - Qty.6	
11	Adson Plain Forcep 15 Cm - Qty.6	
12	Dissecting Plain Forcep 18 Cm - Qty.6	
13	Dissecting Plain Forcep Fine Tip 15 Cm - Qty.6	
14	Dissecting Plain Forcep 23 Cm - Qty.6	
15	Dissecting Plain Forcep 30 Cm - Qty.4	
16	Debakey Forcep 20 Cm - Qty.6	
17	Mosquito Artery Forcep Cvd 12 Cm - Qty.12	
18	Mosquito Artery Forcep Cvd 14 Cm - Qty.18	
19	Mosquito Artery Forcep St. 12 Cm - Qty.11	
20	Mosquito Artery Forcep St. 14 Cm - Qty.18	
21	Artery Forcep Cvd 16 Cm - Qty.18	
22	Artery Forcep Fine Cvd 18 Cm - Qty.18	
23	Artery Forcep Fine Cvd 19 Cm - Qty.24	
24	Artery Forcep Heavy Cvd 20 Cm - Qty.10	
25	Allis Forcep 15 Cm - Qty.12	
26	Allis Forcep 20 Cm - Qty.2	
27	Babcock Forcep 18 Cm - Qty.4	
28	Babcock Forcep 20 Cm - Qty.4	
29	Kochers Clamp Cvd 20 Cm - Qty.6	
30	Kochers Clamp St. 20 Cm - Qty.6	
31	Metz Scissor 20 Cm (1 Golden Handle ) - Qty.2	
32	Metz Scissor 15 Cm - Qty.2	
33	Metz Scissor Heavy Tip 19 Cm - Qty.2	
34	Mayo Scissor St. 17 Cm - Qty.3	
35	Mayo Scissor St. 19 Cm - Qty.3	
36	Needle Holder 18 Cm Fine Tip - Qty.6	
37	Needle Holder 18 Cm Heavy - Qty.6	
38	Needle Holder 20 Cm - Qty.3	
39	Needle Holder 27 Cm - Qty.3	
40	Rider Needle Holder 20 Cm - Qty.3	
41	Intestinal Clamo Cvd (Atraumatic ) - Qty.6	
42	Intestinal Clamo St. (Atraumatic ) - Qty.6	
2	<b>Standards and Safety Requirements</b>	
2.1	Must submit ISO 9001 or ISO 13485:2003/AC: 2007	
2.2	CE or USFDA approved product certificate.	
3	<b>Warranty</b>	
3.1	Comprehensive warranty for 2 years after acceptance.	

**17** **Loupes 2.5x-3.5x**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Operational Requirements</b>	
1.1	Magnification: 2.5 x -3.5x	
1.2	Working distance:340 up to 420mm	
1.3	Depth of field: 80 - 100mm	
1.4	Field of View: 60 - 100mm	
1.5	Weight: 50 - 70g	
1.6	Frames: Ni-alloy or Titanium or ABS	
1.7	With LED	
1.8	LED brightness 30000lux	
1.9	With battery	
2	<b>Standards and Safety Requirements</b>	
2.1	ISO 9001 or ISO 13485:2003/AC:2007	
2.2	CE (93/42 EEC Directives), TUV or USFDA approved product certificate.	
3	<b>Warranty</b>	
3.1	Comprehensive warranty for 2 years.	

**18** **Complete Cleft Set**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Operational Requirements</b>	
1	Dinzman Mouth Gag with 3 Blades Adults -Qty. 1	
2	Cleft Palate Raspatory - French Pattern Right & Left -Qty. 1	
3	Cleft Palate Raspatory - Barsky Type Double Ended -Qty. 1	
4	Cleft Palate Raspatory - Curved Up -Qty. 1	
5	Cleft Palate Raspatory - Curved Down -Qty. 1	
6	McIndoe Cleft Palate Raspatory - Medium -Qty. 1	
7	Mitchell Trimmer -Qty. 1	
8	Cleft Palate Knife Triangular -Qty. 1	
9	Cleft Palate Hook Right Angle & Down Bent -Qty. 1	
10	Cronin Cleft Palate Elevator Medium Right -Qty. 1	
11	Palate Dissector - Right & Left -Qty. 1	
12	Spoon Shape Elevator - Double Ended -Qty. 1	
13	Miller Bone File - Curved -Qty. 1	
14	Elevator Double Ended - Angled Right & Left -Qty. 1	

15. Elevator Double Ended - Angled Side & Flat -Qty. 1	
16. Howarth Elevator -Qty. 1	
17. Kilner Skin Retractor -Qty. 1	
18. Aluminium General Box - Anodized Small -Qty. 1	
<b>2 Operating Environment</b>	
2.1 The unit shall be capable of operating in ambient temperature of 15°C-35°C and relative humidity of 10-95%	
2.2 The unit shall be capable of being stored continuously in ambient temperature of -5°C -40°C and relative humidity of 10-95%	
<b>3 Standards &amp; Safety Requirements</b>	
3.1 Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
3.2 CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
<b>4 Warranty</b>	
4.1 Comprehensive warranty for 2 years.	

**19 Air Dermatome**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
<b>1 Technical Specification</b>		
1.1	Air powered model includes flexible air hose	
1.2	On/off switch	
1.3	Light weight	
1.4	Sterilizable	
1.5	Adjustable graft thickness	
1.6	Cutting thickness from 0.00 to up to 0.70 mm	
1.7	Safety lever	
1.8	Depth gauge	
1.9	Dermatome blades	
1.10	Width plates range from 2 – up to 5 cm	
1.11	High operating speed 2000 to 6000 cycles per minutes	
<b>2 Standards and Safety Requirements</b>		
2.1	Must submit ISO 9001 or ISO 13485:2003/AC: 2007	
2.2	CE or USFDA approved product certificate.	
<b>3 Training</b>		
3.1	Must provide user & service training.	
<b>4 Warranty</b>		
4.1	Comprehensive warranty for 2 years after acceptance.	
<b>5 Maintenance Service During Warranty Period</b>		
5.1	Supplier must ensure planned preventive maintenance (PPM) along with corrective/breakdown maintenance whenever required.	
<b>6 Documentation</b>		
6.1	User (Operating) manual in English Should provide 2 sets(hardcopy and soft-copy)	
6.2	Service (Technical / Maintenance) manual in English Should provide 2 sets (hardcopy and soft-copy)	
6.3	List of important spare parts, accessories and consumables with their part numbers and costing.	

**20 Electric Dermatome**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
<b>1 Technical Specification</b>		
1.1	Electric powered model includes a power source	
1.2	Connection cord	
1.3	Adjustable graft thickness	
1.4	Cutting thickness from 0.00 –up to 0.70 mm	
1.5	Safety lever	
1.6	Depth gauge	
1.7	Width plates range from 2 –up to 5 cm	
1.8	High operating speed 2000 to 6000 cycles per minutes	
1.9	Sterile blades with covers	
<b>2 Operating Environment</b>		
2.1	The unit shall be capable of operating in ambient temperature of 10°C-45°C and relative humidity of 10-95%	
2.2	The unit shall be capable of being stored continuously in ambient temperature of -20°C -60°C and relative humidity of 10-95%	
<b>3 Power supply:</b>		
3.1	Input power supply: 220/240 V AC , 50Hz single phase schuko plug	
<b>4 Standards and Safety Requirements</b>		
4.1	Must submit ISO 9001 or ISO 13485:2003/AC: 2007	
4.2	CE or USFDA approved product certificate.	
<b>5 Training</b>		
5.1	Must provide user & service training.	
<b>6 Warranty</b>		
6.1	Comprehensive warranty for 2 years after acceptance.	
<b>7 Maintenance Service During Warranty Period</b>		
7.1	Supplier must ensure planned preventive maintenance (PPM) along with corrective/breakdown maintenance whenever required.	
<b>8 Documentation</b>		
8.1	User (Operating) manual in English Should provide 2 sets(hardcopy and soft-copy)	
8.2	Service (Technical / Maintenance) manual in English Should provide 2 sets (hardcopy and soft-copy)	
8.3	List of important spare parts, accessories and consumables with their part numbers and costing.	

**21 Skin Tonometer**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
<b>1 Technical Specifications</b>		
1.1	Display monitor	
1.2	Electrodes	
<b>2 Accessories, spares and consumables</b>		
2.1	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer. Bidders must specify the quantity of every item included in their offer (including items not specified above).	
<b>3 Operating Environment</b>		
3.1	Power supply: 220-240V 50/60 Hz AC Single phase.	
<b>4 Standards and Safety Requirements</b>		
4.1	ISO 9001 or ISO 13485:2003/AC:2007	
4.2	CE (93/42 EEC Directives), TUV or USFDA approved product certificate.	
<b>5 Warranty</b>		
5.1	Comprehensive warranty for 2 years.	
<b>6 Documentation</b>		
6.1	List of important spare parts and accessories with their part numbers and costing.	
6.2	Operating and detailed service manual should be provided	

**22 Intra Operative Nerve Stimulator**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
<b>1 Technical Specification</b>		
	The nerve stimulator should have nerve mapping facility	
	The nerve stimulator should have Remote control for sterile one handed operation	
	The stimulator should work on 9V alkaline battery	
	The Power consumption should be 8mA max	
	Stimulation current: 0.01mA to 30.00 mA	
	Should have Artifact detection feature to distinguish between artifact and EMG signals	
	Should have electrode – checking features	
	Should be able to log EMG activity throughout a procedure for records	
	Stimulation Voltage: 95V	
	Stimulation frequency: 1Hz/2Hz	
	Allowable load impedance: 0 kohms -12kohms	
	Stimulus duration: 1.0ms to 0.05ms range	
	Current measuring accuracy: +/-0.02 mA	
	Impedance measuring range: 1 KOhms – 90 Kohms for target stimulation current >0.5 mA	
	Weight: 250 g maximum	
	Accessories:	
	1- Nerve stimulation needles 24G, 25mm , Qty: 3	
	2- Nerve stimulation needles 22G, 50mm Qty: 3	
	3- Nerve stimulation needles, 21G, 100mm. Qty: 3	

4-	Nerve stimulation needles 20G; 150mm	Qty: 3	
5-	Nerve stimulation needles 18 G, 55mm length with 40cm length catheter set,	Qty: 15	
6-	Nerve stimulation needles 18 G, 110mm length with 100cm length catheter set	Qty: 15	
<b>2 Standards and Safety Requirements</b>			
2.1	Must submit ISO 9001 or ISO 13485:2003/AC: 2007		
2.2	CE or USFDA approved product certificate.		
<b>3 Training</b>			
3.1	Must provide user & service training.		
<b>4 Warranty</b>			
4.1	Comprehensive warranty for 2 years after acceptance.		
<b>5 Maintenance Service During Warranty Period</b>			
5.1	Supplier must ensure planned preventive maintenance (PPM) along with corrective/breakdown maintenance whenever required.		
<b>6 Documentation</b>			
6.1	User (Operating) manual in English Should provide 2 sets(hardcopy and soft-copy)		
6.2	Service (Technical / Maintenance) manual in English Should provide 2 sets (hardcopy and soft-copy)		
6.3	List of important spare parts, accessories and consumables with their part numbers and costing.		

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## Laser Device Nd:Yag

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
<b>1 Technical Specification</b>		
1.1	The device should offer 4 wavelengths- 1064nm, 532nm, 585 nm and 650 nm	
1.2	The device should have Photoacoustic Therapy Pulse mode	
1.3	The device should satisfactorily treat following indications effectively: Pigmentation, freckles, Birth marks, Café-au-lait macules, Wrinkles, Rejuvenation, Fine hair reduction	
1.4	The device should have a minimum pulse width of 5 ns for effective and safe treatment	
1.5	The device should have a true flat-top beam profile.	
1.6	The device should have a spot size of atleast 2mm at 585 nm and 650 nm.	
1.7	The minimum shot count for 585 nm hand-piece should be atleast 20,000 and for 650 nm at least 10,000	
1.8	The device should have spot-size in the range of 2mm-8mm and should deliver adequate energy at all spot sizes.	
1.9	The device should offer at least 11 J/cm2 at 2 mm at 532 nm wavelength.	
1.10	The device should offer at least 3 J/cm2at 6mm at 1064 nm wavelength.	
1.11	The device should have fluence of at least 8 J/cm2 at 585 nm wavelength.	
1.12	The device should have fluence of at least 5 J/cm2 at 650 nm wavelength.	
1.13	The device should have a max. repetition rate of 10 Hz at all spot sizes at 1064 nm and 532 nm	
1.14	The device should come with a suitable online UPS.	
1.15	The device should have a red, variable intensity aiming beam.	
1.16	The device should have a closed cycle water heat exchanger for cooling.	
1.17	The device should have an electrical requirement of 220 V, Single phase, 8-10 Amps.	
1.18	The device should be portable.	
1.19	The device should have 4 pairs of protective goggles.	
1.2	The device should be provided with operator manual, Laser warning signs.	
<b>2 Operating Environment</b>		
2.1	The unit shall be capable of operating in ambient temperature of 10°C-45°C and relative humidity of 10-95%	
2.2	The unit shall be capable of being stored continuously in ambient temperature of -20°C -60°C and relative humidity of 10-95%	
<b>3 Power supply:</b>		
3.1	Input power supply: 220/240 V AC, 50Hz single phase schuko plug	
<b>4 Standards and Safety Requirements</b>		
4.1	Must submit ISO 9001 or ISO 13485:2003/AC: 2007	
4.2	CE or USFDA approved product certificate.	
<b>5 Training</b>		
5.1	Must provide user & service training.	
<b>6 Warranty</b>		
6.1	Comprehensive warranty for 2 years after acceptance.	
<b>7 Maintenance Service During Warranty Period</b>		
7.1	Supplier must ensure planned preventive maintenance (PPM) along with corrective/breakdown maintenance whenever required.	
<b>8 Documentation</b>		
8.1	User (Operating) manual in English Should provide 2 sets(hardcopy and soft-copy)	
8.2	Service (Technical / Maintenance) manual in English Should provide 2 sets (hardcopy and soft-copy)	
8.3	List of important spare parts, accessories and consumables with their part numbers and costing.	

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## Skin Dermabrasion Device

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
<b>1 Technical Specification</b>		
1.1	PVC vacuum hose	
1.2	Wands	
1.3	Tips	
1.4	Cotton filter (over300pcs)	
1.5	Safety fuse	
1.6	Oil filter	
1.7	Power adapter	
1.8	Suction control knob	
<b>2 Operating Environment</b>		
2.1	The unit shall be capable of operating in ambient temperature of 10°C-45°C and relative humidity of 10-95%	
2.2	The unit shall be capable of being stored continuously in ambient temperature of -20°C -60°C and relative humidity of 10-95%	
<b>3 Power supply:</b>		
3.1	Input power supply: 220/240 V AC, 50Hz single phase schuko plug	
<b>4 Standards and Safety Requirements</b>		
4.1	Must submit ISO 9001 or ISO 13485:2003/AC: 2007	
4.2	CE or USFDA approved product certificate.	
<b>5 Training</b>		
5.1	Must provide user & service training.	
<b>6 Warranty</b>		
6.1	Comprehensive warranty for 2 years after acceptance.	
<b>7 Maintenance Service During Warranty Period</b>		
7.1	Supplier must ensure planned preventive maintenance (PPM) along with corrective/breakdown maintenance whenever required.	
<b>8 Documentation</b>		
8.1	User (Operating) manual in English Should provide 2 sets(hardcopy and soft-copy)	
8.2	Service (Technical / Maintenance) manual in English Should provide 2 sets (hardcopy and soft-copy)	
8.3	List of important spare parts, accessories and consumables with their part numbers and costing.	

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## Plaster Surgery Set

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
<b>1 Technical Specification</b>		
<b>Set contain:</b>		
1	Scalpel handle, no. 3, 12 cm - 1pc	
2	Scalpel handle, no. 7, solid, short - 1pc	
3	Operating scissors, sharp/blunt, straight, 14.5 cm - 1pc	
4	Dissecting scissors, Kilner, curved, 15 cm - 1pc	
5	Scissors, Jameson, curved, 15.5 cm - 1pc	
6	TC Dissecting scissors, curved, serrated, 14.5 cm - 1pc	
7	TC Dissecting scissors, fine, curved, 14.5 cm - 1pc	
8	TC Iris scissors, sharp/sharp, curved, 11.5 cm - 1pc	
9	Dressing forceps, Mini-Adson, 12 cm - 2pc	
10	Tissue forceps, 1 x 2 teeth, slender, 14.5 cm - 2pc	
11	Forceps, Mini-Adson, 1 x 2 teeth, 12 cm - 2pc	
12	Dressing forceps, Micro-Adson, 15 cm - 2pc	
13	Forceps, Mixer-Baby, slight curved, 14 cm - 1pc	
14	Forceps, Mixer-Baby, strong curved, 13 cm - 1pc	
15	Forceps, Micro-Mosquito, straight, 12 cm - 4pc	
16	Forceps, Micro-Mosquito, curved, 12 cm - 4pc	
17	Haemostatic forceps, Leitch, curved, 15.5 cm - 2pc	
18	Forceps, Leitch, 1 x 2 teeth, straight, 15.5 cm - 2pc	
19	Dissecting forceps, Baby-Adson, curved, 14.5 cm - 2pc	
20	Towel forceps, Backhaus, sharp, 11 cm - 6pc	
21	Forceps, Gross-Maier, curved, 26.5 cm - 2pc	
22	Skin Hook, Guthrie, sharp, 2-prong, 16 cm - 4pc	
23	Skin Hook, sharp, 1-prong, 16.5 cm - 2pc	
24	Retractor, Desmarres, 8 mm, 16 cm - 1pc	

25	Retractor, Desmarres, 16 mm, 16 cm --	
26	Retractor, Senn-Miller, 16cm - 2pc	
27	Retractor, Mini-Langenbeck, 10mm, 16cm - 2pc	
28	Retractor, Senn-Green, 20 x 6 mm, 16 cm - 1pc	
29	Retractor, Senn-Green, 10 x 6 mm, 16 cm - 1pc	
30	Self-retaining retractor, Alm, blunt, 4 x 4 prongs, 7 cm - 1pc	
31	Self-retaining retractor, Weitlaner, 2 x 3 prongs, 11.5cm - 1pc	
32	TC Needle holder, Halsey, 13 cm - 1pc	
33	TC Needle holder, Crile-Wood, 15 cm - 1pc	
34	TC Needle holder, Mayo-Hegar, 16 cm - 1pc	
35	Atrauma forceps, De Bakey, 1.5 mm, 16 cm - 2pc	
36	Face lift hooklet, Kaye, 4-prongs, 13 cm - 1pc	
37	Probe, Bowman, cylindrical, G5, no. 00/0 - 1pc	
38	Probe, Bowman, cylindrical, G5, no. 1/2 - 1pc	
39	Bowl, metal, h = 40, 0.80 mm, 0.14 1 - 1pc	
40	Bowl, metal, h = 55, 0.128 mm, 0.35 1 - 1pc	
41	Kidney dish, 250 x 140 x 40 mm - 1pc	
42	Tendon stripper, flexible, 4 mm, 23 cm - 1pc	
43	Tendon stripper, flexible, 4.5 mm, 23 cm - 1pc	
44	Tendon stripper, flexible, 5.5 mm, 23 cm - 1pc	
45	Drawing probe, Bunnell, malleable, 23 cm - 1pc	
46	Tendon seizing forceps, Steinmann, 16 cm - 1pc	
47	Tendon pulling forceps, Brand, 15 cm - 1pc	
48	Tendon pulling forceps, Brand, 19 cm - 1pc	
49	Tendon retriever, Carroll, 11cm - 1 pc	
50	Tendon seizing forceps, curved, 11.5 cm - 1pc	
51	Tendon seizing forceps, Kleiert-Kutz, 21 cm - 1pc	
52	Tendon weaving forceps, straight, 15 cm - 1pc	
53	Tendon weaving forceps, curved, 15 cm - 1pc	
54	Nerve/tendon holding and trimming instrument set, Meyer - 1 set	
	Includes:	
	Holding forceps of varying sizes - 6pc	
	Blade holder - 1pc	
	Sterilization box - 1pc	
	Lead hand, child size, malleable - 1pc	
	Lead hand, adult size, malleable - 1pc	
	Universal hand holder set, Tupper - 1 set	
	Including:	
	Hand table-1pc	
	Elevated chain holder-2pc	
	Chain holder hooks-2pc	
	Ball chains 21cm, with skin hooks-4pc	
	Ball chains 32cm with skin hooks-2pc	
	Ball chains 26cm without hooks-2pc	
	Tendon hooks-4pc	
	Rubber band sliding hooks-4pc	
	Rubber bands-5pc	
	Stainless steel carrying case-1pc	
	<b>2 Standards and Safety Requirements</b>	
2.1	Must submit ISO 9001 or ISO 13485:2003/AC: 2007	
2.2	CE or USFDA approved product certificate.	
<b>3 Warranty</b>		
3.1	Comprehensive warranty for 2 years after acceptance.	

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**Complete Rhinoplasty Set**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Technical Specification</b>	
	<b>Set contain:</b>	
	<b>Hooks</b>	
1	Round skin hooks Gillies - Qty.2	
2	Round skin hooks medium - Qty.2	
3	Flat skin hook - Qty.2	
4	Flat skin hook long - Qty.2	
5	Double skin hook sharp small - Qty.2	
6	Double skin hook sharp medium - Qty.2	
7	Double skin hook sharp large - Qty.2	
8	Double skin hook sharp blunt - Qty.2	
	<b>Rasps</b>	
9	Cross serrated rasp - Qty.2	
10	Forward cutting rasp - Qty.2	
11	Double action rasp - Qty.2	
12	Glabellar rasp - Qty.2	
13	Straight rasp - Qty.2	
14	Maltz Rasp double ended - Qty.1	
	<b>Elevators</b>	
15	Killian's septal elevator straight - Qty.1	
16	Killian's septal elevator curved - Qty.1	
17	Freer elevator - Qty.1	
18	Joseph skin elevator - Qty.1	
19	Cottle elevator - Qty.1	
20	Pierce elevator - Qty.1	
21	Masing graduated elevator - Qty.1	
22	Farabeuf elevator straight - Qty.1	
23	Farabeuf elevator curved - Qty.1	
24	Killian's septal elevator with suction - Qty.1	
	<b>Chisel &amp; osteotome</b>	
25	Chisel- 1,2,3,4,7 mm - Qty.1 each	
26	Single guarded chisel - Qty.1 each	
27	Silver chisel- right & left - Qty.1 each	
28	Double guarded chisel 7,8,14,16 mm - Qty.1 each	
29	Mc Indoe nasal chisel, 13 & 15 mm - Qty.1 each	
	<b>Retractors</b>	
30	Aufricht retractor wide & narrow - Qty.1 each	
31	Kilner ala retractor - Qty.2	
32	Senn double end retractor- claw sharp & blunt - Qty.1 each	
33	Senn double end retractor- plain - Qty.2	
34	Senn double end retractor- fine - Qty.2	
35	Suction tip no. 7/9/12 - Qty.1 each	
36	Aufricht retractor with fibre optic connection - Qty.1	
37	Killian's nasal speculum with fibre optic connection - Qty.1	
	<b>Saws &amp; knives and gouges</b>	
38	Nasal saw straight - Qty.2	
39	Nasal saw right - Qty.2	
40	Nasal saw left - Qty.2	
41	Ballinger's swivel knife - Qty.2	
42	Joseph button end knife - Qty.2	
43	Blunt gouge & Bayonet gouge - Qty.1 each	
44	Thudicum's nasal speculum - Qty.2	
	<b>Forceps &amp; needle holders</b>	
45	Weebster needle holder - Qty.2	
46	TC needle holder - Qty.2	
47	Gillies needle holder - Qty.1	
48	TC tip needle holder - Qty.1	
49	Bayonet forceps - Qty.1	
50	Tilley's dressing forceps - Qty.2	
51	Luc's forceps set - Qty.1 set	
52	Septum punch forceps - Qty.2	
53	Aoch forceps - Qty.2	
54	Walsham forceps - Qty.2	
55	Baby Walsham forceps - Qty.1	
56	Nasal septal forceps- straight & curved - Qty.1 each	
	<b>Scissors</b>	
57	Tenotomy scissors- straight & curved - Qty.1 each	
58	Kilner scissors- straight & curved - Qty.2 each	
59	Aufricht scissors - Qty.2	

60	Cartilage scissors - Qty.2	
61	Columella scissors 4", 6", 8" - Qty.1 each	
2	<b>Standards and Safety Requirements</b>	
2.1	Must submit ISO 9001 or ISO 13485:2003/AC: 2007	
2.2	CE or USFDA approved product certificate.	
3	<b>Warranty</b>	
3.1	Comprehensive warranty for 2 years after acceptance.	

**27 Major Surgical Set**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Technical Specification</b>	
	<b>Set contain:</b>	
1	B.P. Handle No.3 - Qty.10	
2	B.P. Handle No.4 - Qty.10	
3	Dissecting Forceps Plain 7" - Qty.10	
4	Dissecting Forceps Plain 8" - Qty.5	
5	Dissecting forceps Toothed 7" - Qty.5	
6	Dissecting Forceps Toothed 8" - Qty.5	
7	Adson Dissecting Forceps Plain - Qty.5	
8	Adson Dissecting Forceps Toothed - Qty.5	
9	Towel clip 5" - Qty.30	
10	Cd. Scissor Suture Cutting - Qty.5	
11	Mayo Scissor Cd. 8" TC - Qty.5	
12	METZ Scissor Cd. 8" TC - Qty.5	
13	Mayo scissor 8" st. - Qty.5	
14	Mayo Scissor 8" - Qty.5	
15	Needle Holder 7" Mayo hegar - Qty.5	
16	Needle Holder 8" fine - Qty.5	
17	Needle Holder 8" Mayo hegar - Qty.5	
18	Artery Forceps Cd. 8" - Qty.10	
19	Mosq. Artery Forceps Cd. - Qty.20	
20	Mosq. Artery Forceps st. - Qty.10	
21	Artery Forceps Cd. 7" - Qty.30	
22	Artery Forceps St. 7" - Qty.10	
23	Allis Forceps 7" - Qty.20	
24	Babcock Tissue Holding Forceps 7" - Qty.10	
25	Probe and director - Qty.5	
26	Suction Tip No. 1, 2, 3, 4 - Qty.5 Nos Each	
27	Yauker's Suction with detachable tip - Qty.5	
28	Mixture Clamp 7" - Qty.5	
29	Langenback Ret MEDIUM - Qty.10	
30	Langenback Ret SMALL - Qty.10	
31	C" Shaped Retractor (pair) small & med - Qty.10 Each	
32	Sponge Holder 8" - Qty.20	
33	Skin hook sharp - Qty.10	
34	Vein loops - Qty.10	
35	S.S.Bowls 10 cm - Qty.20	
36	S.S. Kidney tray 12" - Qty.10	
2	<b>Standards and Safety Requirements</b>	
2.1	Must submit ISO 9001 or ISO 13485:2003/AC: 2007	
2.2	CE or USFDA approved product certificate.	
3	<b>Warranty</b>	
3.1	Comprehensive warranty for 2 years after acceptance.	

**28 Autoclave (300 L)**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Description of Function</b>	
1.1	Autoclaves are required to sterilize objects under high temperature and pressured steam.	
2	<b>Operational Requirements</b>	
2.1	Suitable for hospital dressings, linen, surgical instruments, glassware, culture media and laboratory wares etc.	
2.2	Horizontal electrically heated autoclave is required.	
3	<b>System Configuration</b>	
3.1	Autoclave for CSSD (Central Sterile Services Department) approx. 300 L, stand alone.	
4	<b>Technical Specifications</b>	
4.1	Single door high pressure steam sterilizer with double walled, steam jacket and separate boiler	
4.2	<b>Material of construction:</b>	
	B Sterilizer chamber SS 316	
	B Door SS 316	
	B Jacket Stainless Steel	
	B Loading carriage SS 316	
	B Door Gasket: Silicon or better	
	B Insulation: fibre glass resin bonded wool or better	
	B Insulation cover: SS sheets	
4.3	Operating temperature 121 OC – 134 OC pressure 1.1 to 2.2 kg/cm2 of steam pressure.	
4.4	Capacity- 300 litres.	
4.5	Digital microprocessor temperature controller with stored memory.	
4.6	Separate cycle timer and easy to read display pressure gauges.	
4.7	Indicating lights display all functions including heating, low water, timer operation, temperature set point and actual temperature.	
4.8	Spring loaded safety valves and automatic vacuum breaker for jacket.	
4.9	Removable plug screen for chamber drain.	
4.10	SS baffle for even steam distribution in the chamber.	
4.11	Safety lock for door: pressure lock safety device.	
4.12	Low water off.	
4.13	Earth leakage breaker (ELB).	
4.14	Must include chart recorder for temperature and pressure, increased power rating for rapid heating applications.	
4.15	Electrical heating element to have over-temperature protection/cut out.	
5	<b>Accessories, spares and consumables</b>	
5.1	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer.	
5.1	<b>Accessories:</b>	
	B 3 dressing drums – (seamless stainless steel construction, suitable to fit into the autoclave)	
	B A minimum of two spare lid gaskets	
	B Spare heating element- 1 set	
6	<b>Operating Environment</b>	
6.1	The unit shall be capable of operating in ambient temperature of 10°C-45°C and relative humidity of 10-95%	
6.2	The unit shall be capable of being stored continuously in ambient temperature of -20°C -60°C and relative humidity of 10-95%	
7	<b>Power supply:</b>	
7.1	Power supply: 380-440 V (3 Phase), 50Hz fitted with appropriate plug.	
8	<b>Standards and Safety Requirements</b>	
8.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
8.2	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
8.3	Shall meet IEC 61010-2-040 Safety requirements for electrical equipment for measurement, control and laboratory use - Part 2-040: Particular requirements for sterilizers and washer-disinfectors used to treat medical materials.	
9	<b>Training</b>	
9.1	Must provide user & service training.	
10	<b>Warranty</b>	
10.1	Comprehensive warranty for 2 years.	
11	<b>Maintenance Service During Warranty Period</b>	
11.1	Supplier must ensure planned preventive maintenance (PPM) along with corrective/breakdown maintenance whenever required.	
12	<b>Documentation</b>	
12.1	User (Operating) manual in English Should provide 2 sets(hardcopy and soft-copy)	
12.2	Service (Technical / Maintenance) manual in English Should provide 2 sets(hardcopy and soft-copy)	
12.3	List of important spare parts, accessories and consumables with their part numbers and costing.	

**29 Hot Air Oven 60L**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Description of Function</b>	
1.1	Hot Air Oven is required for heating a sample under controlled conditions.	

2	<b>Operational Requirements</b>	
2.1	Microprocessor based system with PID-temperature controller with integrated auto diagnostic system with fault indicator.	
3	<b>System Configuration</b>	
3.1	Microprocessor based Hot Air Oven.	
4	<b>Technical Specifications</b>	
4.1	Digital display mode	
4.2	Digital temperature control	
4.3	Capacity :60 litres	
4.4	Forced air circulation by quiet air turbine/Fan to ensure uniform temperature.	
4.5	Fitted with load indicator and safety thermostat take over indicator lamp. LCD/LED indicator.	
4.6	Temperature Variation +/- 1.	
4.7	Temperature Range- ambient to 250 oC	
4.8	Output available for data acquisition.	
5	<b>Accessories, spares and consumables</b>	
5.1	All standard accessories/consumables/parts required for the proper operation of the above item shall be included in the offer.	
6	<b>Operating Environment</b>	
6.1	The unit shall be capable of operating in ambient temperature of 10°C-45°C and relative humidity of 10-95%	
6.2	The unit shall be capable of being stored continuously in ambient temperature of -20°C -60°C and relative humidity of 10-95%	
7	<b>Power supply:</b>	
7.1	Input power supply: 220/240 V AC , 50Hz single phase schuko plug	
8	<b>Standards and Safety Requirements</b>	
8.1	Must submit ISO 9001 or ISO 13485:2003/AC: 2007 AND	
8.2	CE or USFDA or TUV approved product certificate.	
9	<b>Training</b>	
9.1	Must provide user & service training.	
10	<b>Warranty</b>	
10.1	Comprehensive warranty for 2 years after acceptance.	
11	<b>Maintenance Service During Warranty Period</b>	
11.1	Supplier must ensure planned preventive maintenance (PPM) along with corrective/breakdown maintenance whenever required.	
12	<b>Documentation</b>	
12.1	User (Operational) manual in English Should provide 2 sets(hardcopy and soft-copy)	
12.2	Service (Technical / Maintenance) manual in English Should provide 2 sets (hardcopy and soft-copy)	
12.3	List of important spare parts, accessories and consumables with their part numbers and costing.	

**30** **Autoclave (75 L)**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Description of Function</b>	
1.1	Autoclaves are required to sterilize objects under high temperature and pressured steam.	
2	<b>Operational Requirements</b>	
2.1	Suitable for hospital dressings, linen, surgical instruments, glassware, culture media and laboratory wares etc.	
3	<b>System Configuration</b>	
3.1	Autoclave approx. 75L stand alone	
4	<b>Technical Specifications</b>	
4.1	Single door high pressure steam sterilizer with double walled, steam jacket and separate boiler	
4.2	<b>Material of construction:</b>	
	B Sterilizer chamber SS 316	
	B Door SS 316	
	B Jacket Stainless Steel	
	B Loading carriage SS 316	
	B Door Gasket : Silicon or better	
4.3	Operating temperature 121 OC – 134 OC pressure 1.1 to 2.2 kg/cm2 of steam pressure	
4.4	Capacity: 75 litres	
4.5	Digital microprocessor based PID temperature controller with stored memory	
4.6	Separate cycle timer and easy to read display pressure gauges.	
4.7	Indicating lights display all functions including heating, low water, timer operation, temperature set point and actual temperature.	
4.8	Spring loaded safety valves and automatic vacuum breaker for jacket.	
4.9	Removable plug screen for chamber drain.	
4.10	SS baffle for even steam distribution in the chamber.	
4.11	Safety lock for door: pressure lock safety device.	
4.12	Low water off.	
4.13	Earth leakage breaker (ELB)	
4.14	Must include chart recorder for temperature and pressure, increased power rating for rapid heating applications.	
4.15	Electrical heating element to have over-temperature protection/cut out and maximum electrical power must not to exceed 4.5 KW.	
5	<b>Accessories, spares and consumables</b>	
5.1	All standard accessories, consumables and parts required to operate the equipment.	
5.2	<b>Accessories:</b>	
	B 3 dressing drums – (seam less stainless steel construction, suitable to fit into the autoclave)	
	B A minimum of two spare lid gaskets	
	B Spare heating element- 1 set	
6	<b>Operating Environment</b>	
6.1	The unit shall be capable of operating in ambient temperature of 10°C-45°C and relative humidity of 10-95%	
6.2	The unit shall be capable of being stored continuously in ambient temperature of -20°C -60°C and relative humidity of 10-95%	
7	<b>Power supply:</b>	
7.1	Input power supply: 220/240 V AC , 50Hz single phase schuko plug	
8	<b>Standards and Safety Requirements</b>	
8.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
8.2	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
8.3	Shall meet IEC 61010-2-040 Safety requirements for electrical equipment for measurement, control and laboratory use - Part 2-040: Particular requirements for sterilizers and washer-disinfectors used to treat medical materials.	
9	<b>Training</b>	
9.1	Must provide user & service training.	
10	<b>Warranty</b>	
10.1	Comprehensive warranty for 2 years.	
11	<b>Maintenance Service During Warranty Period</b>	
11.1	Supplier must ensure planned preventive maintenance (PPM) along with corrective/breakdown maintenance whenever required.	
12	<b>Documentation</b>	
12.1	User (Operational) manual in English Should provide 2 sets(hardcopy and soft-copy)	
12.2	Service (Technical / Maintenance) manual in English Should provide 2 sets(hardcopy and soft-copy)	
12.3	List of important spare parts, accessories and consumables with their part numbers and costing.	

**31** **Autoclave (50 L)**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Description of Function</b>	
1.1	Autoclaves are required for sterilizing an object in high temperature and high pressure steam.	
2	<b>Operational Requirements</b>	
2.1	Microprocessor based electrically heated vertical steam sterilizer	
3	<b>System Configuration</b>	
3.1	Microprocessor based Autoclave (Vertical Model) with complete accessories.	
4	<b>Technical Specifications</b>	
4.1	Capacity: approx. 50 L	
4.2	Vertical type.	
4.3	Stainless steel.	
4.4	Digital controlled temperature and pressure system.	
4.5	Steam sterilization, up to 134° C	
4.6	Digital temperature and pressure gauges.	
4.7	Spare heating element- 1 set (low water cut-off switch , safety valve and release valve)	
4.8	Automatic controlled sterilization cycle.	
4.9	2 modes sterilization (121°c- 134°c)	
4.10	Exhaust system.	
4.11	Stainless steel basket.	
4.12	Double wall case.	
5	<b>Accessories, spares and consumables</b>	
5.1	All standard accessories, consumables and parts required to operate the equipment.	
5.2	Spare heating element- 1 set	
5.3	A minimum of two spare lid gaskets	
6	<b>Operating Environment</b>	
6.1	The unit shall be capable of operating in ambient temperature of 10°C-45°C and relative humidity of 10-95%	
6.2	The unit shall be capable of being stored continuously in ambient temperature of -20°C -60°C and relative humidity of 10-95%	
7	<b>Power supply:</b>	
7.1	Input power supply: 220/240 V AC , 50Hz single phase schuko plug	
8	<b>Standards and Safety Requirements</b>	

8.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
8.2	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
8.3	Shall meet IEC 61010-2-040 Safety requirements for electrical equipment for measurement, control and laboratory use - Part 2-040: Particular requirements for sterilizers and washer-disinfectors used to treat medical materials.	
9	<b>Training</b>	
9.1	Must provide user & service training.	
10	<b>Warranty</b>	
10.1	Comprehensive warranty for 2 years.	
11	<b>Maintenance Service During Warranty Period</b>	
11.1	Supplier must ensure planned preventive maintenance (PPM) along with corrective/breakdown maintenance whenever required.	
12	<b>Documentation</b>	
12.1	User (Operating) manual in English Should provide 2 sets(hardcopy and soft-copy)	
12.2	Service (Technical / Maintenance) manual in English Should provide 2 sets(hardcopy and soft-copy)	
12.3	List of important spare parts, accessories and consumables with their part numbers and costing.	

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## Autoclave (150 L)

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Technical Specifications</b>	
1.1	Description of Function	
1.1.1	Autoclaves are required to sterilize objects under high temperature and pressured steam.	
2	<b>Operational Requirements</b>	
2.1	Suitable for hospital dressings, linen, surgical instruments, glassware, culture media and laboratory wares etc.	
2.2	Horizontal electrically heated autoclave is required.	
3	<b>System Configuration</b>	
3.1	Autoclave for CSSD (Central Sterile Services Department) approx. 150 L, stand alone.	
4	<b>Technical Specifications</b>	
4.1	Single door high pressure steam sterilizer with double walled, steam jacket and separate boiler	
4.2	<b>Material of construction:</b>	
4.2.1	sterilizer chamber SS 316	
4.2.2	Door SS 316	
4.2.3	Jacket Stainless Steel	
4.2.4	Loading carriage SS 316	
4.2.5	Door Gasket - Silicon or better	
4.2.6	Insulation: fibre glass resin bonded wool or better	
4.2.7	Insulation cover: SS sheets	
4.3	Operating temperature 121 OC – 134 OC pressure 1.1 to 2.2 kg/cm2 of steam pressure.	
4.4	Capacity: 150 litres.	
4.5	Digital microprocessor temperature controller with stored memory.	
4.6	Separate cycle timer and easy to read display pressure gauges.	
4.7	Indicating lights display all functions including heating, low water, timer operation, temperature set point and actual temperature.	
4.8	Spring loaded safety valves and automatic vacuum breaker for jacket.	
4.9	Removable plug screen for chamber drain.	
4.10	SS baffle for even steam distribution in the chamber.	
4.11	Safety lock for door: pressure lock safety device.	
4.12	Low water off.	
4.13	Earth leakage breaker (ELB).	
4.14	Must include chart recorder for temperature and pressure, increased power rating for rapid heating applications.	
4.15	Electrical heating element to have over-temperature protection/cut out.	
5	<b>Accessories, spares and consumables</b>	
5.1	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer.	
5.2	<b>Accessories:</b>	
5.2.1	3 dressing drums 5 – (seamless stainless steel construction, suitable to fit into the autoclave).	
5.2.2	A minimum of two spare lid gaskets.	
5.2.3	Spare heating element- 1 set	
6	<b>Operating Environment</b>	
6.1	The unit shall be capable of operating in ambient temperature of 10°C-45°C and relative humidity of 10-95%	
6.2	The unit shall be capable of being stored continuously in ambient temperature of -20°C -60°C and relative humidity of 10-95%	
7	<b>Power supply:</b>	
7.1	Power supply: 380-440 V (3 Phase), 50Hz fitted with appropriate plug.	
8	<b>Standards and Safety Requirements</b>	
8.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
8.2	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
8.3	Shall meet IEC 61010-2-040 Safety requirements for electrical equipment for measurement, control and laboratory use - Part 2-040: Particular requirements for sterilizers and washer-disinfectors used to treat medical materials.	
9	<b>Training</b>	
9.1	Must provide user & service training.	
10	<b>Warranty</b>	
10.1	Comprehensive warranty for 2 years.	
11	<b>Maintenance Service During Warranty Period</b>	
11.1	Supplier must ensure planned preventive maintenance (PPM) along with corrective/breakdown maintenance whenever required.	
12	<b>Documentation</b>	
12.1	User (Operating) manual in English Should provide 2 sets(hardcopy and soft-copy)	
12.2	Service (Technical / Maintenance) manual in English Should provide 2 sets(hardcopy and soft-copy)	
12.3	List of important spare parts, accessories and consumables with their part numbers and costing.	

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## Microbiology Safety Cabinet II

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Technical Specifications</b>	
1.1	Microprocessor controlled Class-2 type A2 biological safety cabinet suitable for working with microorganisms assigned to biological safety levels 1, 2 & 3, providing full protection to personnel, specimens and environment.	
1.2	NSF International standard 49 / EN 12469 certified and tested. Certificate is to be provided along with HEPA H14/ULPA filters on inflow as well as exhaust with an efficacy of 99.999% for equal or more than 0.3 µm size particles (DOP test Certificate to be produced).	
1.3	30% exhaust air via high performance exhaust filter and 70% air should be recirculated.	
1.4	Dimensions of work chamber in the range of 1100-1300 mm (L), 500-700 mm (W), 550-800 mm (H).	
1.5	Main body made up of rust proof stainless steel single piece (sides and back wall).	
1.6	Safe and ergonomic design for movement in all directions in the chamber (Comfort for users while working).	
1.7	Sliding front window, electrically operated, made up of safety (UV) glass, completely tight sealed while closed for complete protection against contamination and fumigation.	
1.8	Independent fans for impulsion and exhaust.	
1.9	UV lamp with auto regulatory mechanism to work only when the front panel is fully closed.	
1.10	Display of the following parameters:	
1.10.1	a. Optical & acoustic notification of alarms.	
1.10.2	b. Low exhaust flow.	
1.10.3	c. Low down flow air velocity.	
1.10.4	d. Impulsion/exhaust fan malfunction.	
1.10.5	e. Cabinet information (with digital display).	
1.10.6	f. Exhaust air flow in m3/hr.	
1.10.7	g. Laminar flow air velocity in m/sec.	
1.10.8	h. Elapsed hour meter for UV.	
1.11	Cabinet Temperature	
1.12	Stainless steel pan under working surface to allow safe collection of spilled fluid.	
1.13	Low noise level -65dB(A)	
1.14	Service ports with stopcock at both ends for gas.	
1.15	Minimum one electrical socket inside the chamber.	
1.16	Light intensity in the working chamber should not be less than 1000 Lux.	
1.17	Working aperture 200 - 220 mm.	
1.18	It should have an adjustable chair and a foot rest.	
1.19	Cabinet should be mounted on a compatible wheel trolley.	
1.20	Leakage of UV rays and to ensure containment of potential hazardous material.	
2	<b>Essential Accessories</b>	
2.1	One inflow HEPA H14/ULPA filter and (Original & compatible to the cabinet, DOP tested) should be supplied in addition by the firm with each of the cabinets as spare accessories.	
2.2	Input power supply: 220 ± 20 % V AC, 50Hz	
3	<b>Operating Environment</b>	
3.1	The product offered shall be designed to be stored and to operate normally under Power Supply, Climate, Temperature, Humidity, etc. for Sudan.	
3.2	Power supply: 220-240V/ 50 Hz AC Single phase with appropriate plug. The power cable must be minimum 3 Meter	
3.3	Suitable UPS with maintenance free batteries for minimum one-hour back-up should be supplied with the system.	
4	<b>Standards and Safety Requirements</b>	
4.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
4.2	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
4.3	Shall meet IEC 61010-2-040 Safety requirements for electrical equipment for measurement, control and laboratory use - Part 2-040: Particular requirements for sterilizers and washer-disinfectors used to treat medical materials.	
4.4	<b>User Training</b>	
4.4.1	Must provide user training (including how to use and maintain the equipment).	
5	<b>Warranty</b>	

5.1	Comprehensive warranty for 2 years after acceptance.	
6	<b>Maintenance Service During Warranty Period</b>	
6.1	During the warranty period supplier must ensure corrective/breakdown maintenance whenever required.	
7	<b>Installation and Commissioning</b>	
7.1	Supplier must accomplish proper installation and commissioning of the equipment on site.	
8	<b>Documentation</b>	
8.1	User (Operational) manual in English	
8.2	Service (Technical / Maintenance) manual in English	
8.3	List of important spare parts and accessories with their part numbers and costing.	

**34** **Chemistry Analyzer (200T/HR)**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Technical Specification</b>	
	Fully automated, latest and bench top analyzer to perform the analysis of substrates, enzymes and special parameters from whole blood, serum, plasma and urine samples	
	System should be Discrete, fully selective random access with a provision to test STAT samples	
	System should have four different on-board technologies ( Photometry, Potentiometry, Fluorescence Polarization and Turbidimetry ) to measure substrates, enzymes, Homogeneous immunoassays, TDM's and Drugs.	
	System should have facility for programming 125 - 150 different test parameters and the reagents should be available from the same manufacturer.	
	System should have a routine throughput of 200 tests / hr	
	Onboard sample capacity should be at least 90 or more	
	Flexibility to use different sample containers like primary tubes with different sizes, sample cups, micro cups and cup on tube for easy processing.	
	Facility to keep reagent bottles / cassettes for at least 30 common tests with on board refrigeration is must.	
	Sample volumes should be less than 2 - 30 ul per test.	
	System should have high sensitive pressure sensors to detect any incorrect pipetting even at 2 ul sample volume	
	Onboard sample and calibrator dilution should be available ( 1 - 100 times )	
	System must use disposable cuvettes to prevent any carryover without using any onboard washing	
	System should be used for testing special parameters like HbA1c, Lactate, hsCRP, D-Dimer, Ferritin, IgA, IgM, IgG, ASO, Cytosporine, MPA and electrolytes ( Na, K and Cl ), TDM, DAT tests besides the routine clinical parameters.	
	On-board reagent stability should be for at least 3 months and calibration of the parameter.	
	should be typically with lot. No daily calibration should be required by the system to save the reagents.	
	System should have 12 wavelength photometer with mono and bi-chromatic measurements.	
	Light source should be 20 W halogen lamp with lamp save feature.	
	System should have external windows NT based data control work station with flat screen monitor for programming the tests and entering the patient data.	
	System should external printer to take printout of patient results.	
	Patient samples and Reagents can be scanned with barcode scanner for easy operation.	
	System should have 1 x RS 232 bidirectional interface and in-built modem for remote diagnostics access.	
2	<b>Operating Environment</b>	
	The unit shall be capable of operating continuously in ambient temperature of 10 -40deg C and relative humidity of 15-90%.	
	The unit shall be capable of being stored continuously in ambient temperature of 0 -50deg C and relative humidity of 15-90%.	
3	<b>Power supply:</b> 220 - 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metre in length.	
	Suitable UPS with maintenance free batteries for minimum 30 min. back-up shall be supplied with the system.	
4	<b>Standards and Safety Requirements</b>	
	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
	Should be FDA/CE/BSI approved product	
	Shall meet internationally recognised for Electromagnetic Compatibility(EMC) for electromedical equipment: 61326-1.	
	Certified to be compliant with IEC 61010-1, IEC 61010-2-281, 61010-2-101 for safety.	
5	<b>User Training</b>	
	Must provide user training (including how to use and maintain the equipment).	
6	<b>Warranty</b>	
	Comprehensive warranty for 2 years from acceptance.	
7	<b>Maintenance Service During Warranty Period</b>	
	During the warranty period supplier must ensure planned preventive maintenance (PPM) and corrective/breakdown maintenance whenever required.	
8	<b>Installation and Commissioning.</b>	
	The bidder must arrange for the equipment to be installed and commissioned by certified or qualified personnel; any prerequisites for installation to be communicated to the user in advance, in detail.	
9	<b>Documentation</b>	
	User (Operational) manual in English Should provide 2 sets(hardcopy and soft-copy)	
	Service (Technical / Maintenance) manual in English Should provide 2 sets(hardcopy and soft-copy)	
	List of important spare parts and accessories with their part number and costing.	

**35** **Colorimeter**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Description of Function</b>	
1.1	General purpose colorimeter use in clinical laboratory.	
2	<b>Operational Requirements</b>	
2.1	Microprocessor controlled system.	
3	<b>System Configuration</b>	
3.1	Colorimeter with complete accessories.	
4	<b>Technical Specifications</b>	
4.1	Must have 8 no of filters wave length from 340 nm to 730 nm.	
4.2	Must have a 2 digit LED display calibrated directly in optical density.	
4.3	Detector must be encased spill proof photo cell.	
4.4	Must have facilities for concentration, calculation, percentage transmission and optical density.	
4.5	Lamp source: Broad spectrum LED or halogen covering full visible range	
5	<b>Accessories, spares and consumables</b>	
	8 Square and round cuvette minimum volume 1ml.	
	8 Cuvettes: 10 nos.	
	8 Lam p: 0.2 nos	
	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer.	
6	<b>Operating Environment</b>	
6.1	The product offered shall be designed to be stored and to operate normally under Power Supply, Climate, Temperature, Humidity, etc. for Sudan.	
6.2	Power supply: 220-240V/ 50 Hz AC single phase with appropriate plug. The power cable must be minimum 3 Meter	
7	<b>Standards and Safety Requirements</b>	
7.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
7.2	CE (93/42 EEC Directives) or USFDA approved product certificate.	
7.3	Must comply with IEC 61010 Safety requirements for electrical equipment for measurement, control, and laboratory use	
8	<b>User Training</b>	
8.1	Must provide user training (including how to use and maintain the equipment).	
9	<b>Warranty</b>	
9.1	Comprehensive warranty for 2 years after acceptance.	
10	<b>Maintenance Service During Warranty Period</b>	
10.1	During the warranty period supplier must ensure corrective/breakdown maintenance whenever required.	
11	<b>Installation and Commissioning</b>	
11.1	Supplier must accomplish proper installation and commissioning of the equipment on site.	
12	<b>Documentation</b>	
12.1	User (Operational) manual in English	
12.2	Service (Technical / Maintenance) manual in English	
12.3	List of important spare parts and accessories with their part numbers and costing.	

**36** **Incubator for Lab**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Technical Specification</b>	
	Size of inner chamber: 100-150 liters capacity.	
	Double walled construction with complete inner chamber made of highly polished stainless steel	
	Outer chamber should be of steel sheet finished with powder coated point	
	Insulation to maintain desired temperature	
	Inner chamber should be fabricated with ribs for adjusting shelves to convenient height and 3 shelves to be supplied	
	Shelves should be made of polished stainless steel sheet as per chamber	
	Doors to be insulated and fitted with heavy hinges and should have double glass window	
	Temperature should be thermostatically controlled with range from 20-80° C. Air ventilators to be provided on both side	
	The equipment should be provide with control panel having a thermostat control knob, on-off switch, pilot lamp and timer, digital indicator	
2	<b>Operating Environment</b>	
	The unit shall be capable of operating continuously in ambient temperature of 10 -40deg C and relative humidity of 15-90%	
	The unit shall be capable of being stored continuously in ambient temperature of 0 -50deg C and relative humidity of 15-90%	
3	<b>Power supply:</b> 220 - 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metre in length.	
	Suitable UPS with maintenance free batteries for minimum 30 min. back-up shall be supplied with the system.	
4	<b>Standards and Safety Requirements</b>	
	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	

	Should be FDA/CE approved product.	
	Shall meet internationally recognised for Electromagnetic Compatibility(EMC) for electromedical equipment: 61326-1.	
	Certified to be compliant with IEC 61010-1, IEC 61010-2-281, 61010-2-101 for safety.	
5	<b>User Training</b>	
	Must provide user training (including how to use and maintain the equipment).	
6	<b>Warranty</b>	
	Comprehensive warranty for 2 years from acceptance.	
7	<b>Maintenance Service During Warranty Period</b>	
	During the warranty period supplier must ensure planned preventive maintenance (PPM) and corrective/breakdown maintenance whenever required.	
8	<b>Installation and Commissioning</b>	
	The bidder must arrange for the equipment to be installed and commissioned by certified or qualified personnel; any prerequisites for installation to be communicated to the user in advance, in detail.	
9	<b>Documentation</b>	
	User (Operating) manual in English Should provide 2 sets(hardcopy and soft-copy)	
	Service (Technical / Maintenance) manual in English Should provide 2 sets(hardcopy and soft-copy)	
	List of important spare parts and accessories with their part number and costing.	

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## Hematology Analyzer 5 Part Differential

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Description of Function</b>	
	A 5-part differential hematology instrument uses the principle of flow cytometry to differentiate white blood cells (WBC) into their five major sub-populations—neutrophils, lymphocytes, monocytes, eosinophils, and basophils—based on cell size and complexity (granularity). A 5-part differential hematology instrument uses the principle of flow cytometry to differentiate white blood cells (WBC) into their five major sub-populations—neutrophils, lymphocytes, monocytes, eosinophils, and basophils—based on cell size and complexity (granularity).	
2	<b>Technical Specifications</b>	
	The Principle should be Flow cytometry and multi-angular laser scattering. Electric impedance method and Colorimetry method	
	Should accept two modes of sampling : Whole blood, pre-diluted blood	
	System should be Fully Automatic.	
	Throughput:	
	Up to 125 samples per hour (CBC+DIFF)	
	Up to 90 samples per hour (CBC+DIFF+RET)	
	Up to 40 samples per hour (body fluid)	
	Loading capacity:	
	Up to 100 sample tubes	
	Data storage capacity:	
	Up to 100,000 patient results including all numeric and graphical	
	Should include 36 reportable parameters (whole blood): WBC, Lym#, Mon#, Neu#, Eos#, Bas#, IMG#, Lym#, Mon#, Neut#, Eos#, Bas#, IMG#, RBC, HGB, HCT, MCV,MCH, MCHC, RDW-CV, RDW-SD, RET%, RET#, IRF, LFR, MFR, HFR, NRBC#,NRBC%, PLT, MPV, PDW, PCT, P-LCR, P-LCC, IPF.	
	Body fluid mode	
	Shall have fully automatic, open system.	
	Sample volume: < 30ul.	
	Calibration: independent automated calibration and manual calibration for minimum two test modes.	
	Typical counting time: approximately 60 seconds for differential.	
	Shall have with self-test capability.	
	Display: LCD screen.	
	Indication of self-test failures and assistance messages, sample ID, date and time are reported with test results.	
	Supplied complete with dedicated data analysis and data management software.	
	Results are reported on external laser printer.	
	Shall have built-in RS232, USB2.0 or equivalent, for allowing data transfer and network capability via LIS.	
	On board memory for about 100-150 tests records.	
	Bar code scanner included	
	LAN Connection	
	Storage capacity about 200000 result minimum.	
	ability to view 5 parts differential in histogram	
	Shall quote rates for reagents & consumables, calibrators & controls, printer paper, separately and it must be valid for at least 3 years.	
3	<b>Accessories, spares and consumables</b>	
	Reagents for 500- 1000 reaction should be provided with the instrument.	
	Laptop and printer.	
	Suitable on - line UPS (about 2 KVA) is required to support the instrument.	
	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer.	
4	<b>Operating Environment</b>	
	The product offered shall be designed to be stored and to operate normally under Power Supply, Climate, Temperature, Humidity, etc. for Sudan.	
	Power supply: 220-240V/ 50 Hz AC Single phase with appropriate plug. The power cable must be minimum 3 Meter	
5	<b>Standards and Safety Requirements</b>	
	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
	CE (93/42 EEC Directives) or USFDA approved product certificate	
	Must comply with IEC 61010 Safety requirements for electrical equipment for measurement, control, and laboratory use	
6	<b>User Training</b>	
	Must provide user training (including how to use and maintain the equipment).	
7	<b>Warranty</b>	
	Comprehensive warranty for 2 years after acceptance.	
8	<b>Maintenance Service During Warranty Period</b>	
	During the warranty period supplier must ensure corrective/breakdown maintenance whenever required.	
9	<b>Installation and Commissioning</b>	
	Supplier must accomplish proper installation and commissioning of the equipment on site.	
10	<b>Documentation</b>	
	User (Operating) manual in English	
	Service (Technical / Maintenance) manual in English	
	List of important spare parts and accessories with their part numbers and costing.	

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## Hormone Analyzer 36 Test/Hr

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Technical Specifications</b>	
	Fully automated, sample selective analyzer for heterogeneous immunoassays, continuous loading, self contained Min. throughput 30 results/hr Serum, Plasma	
	Specify Load/unload capacity	
	Specify Number of Rack positions, RD standard	
	Specify Number of Tray (racks/ samples)	
	processed with priority	
	Primary tubes: 5 to 10ml, 16x100, 16x75, 13x100, 13x75mm	
	Sample cup: 2.5ml Cup on tube	
	Cup on tube: Cup on top of a 16x75/100mm 5 to 50ul	
	Ready to use Rack Packs with 2-D barcode temperature controlled reagent compartment	
	(20°C) onboard capacity: max. 15 tests 180 disposable cups	
	360 disposable tips (Assay Tip), liquid level and clot detection, sample and test specific dilution	
	Colored touch-screen monitor, customized keyboard and computer	
	RS 232 serial interface, bi-directional, query and batch mode	
	Running cost details important and all start up kits needed for operation and calibration	
	Running cost details important and all start up kits needed for operation and calibration	
2	<b>Operating Environment</b>	
	The unit shall be capable of operating continuously in ambient temperature of 10 -40deg C and relative humidity of 15-90%	
	The unit shall be capable of being stored continuously in ambient temperature of 0 -50deg C and relative humidity of 15-90%	
3	<b>Power supply:</b> 220 – 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metre in length.	
	Suitable UPS with maintenance free batteries for minimum 30 min. back-up shall be supplied with the system.	
4	<b>Standards and Safety Requirements</b>	
	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
	Should be FDA/CE/IBIS approved product.	
	Shall meet internationally recognised for Electromagnetic Compatibility(EMC) for electromedical equipment: 61326-1.	
	Certified to be compliant with IEC 61010-1, IEC 61010-2-281, 61010-2-101 for safety.	
5	<b>User Training</b>	
	Must provide user training (including how to use and maintain the equipment).	
6	<b>Warranty</b>	
	Comprehensive warranty for 2 years from acceptance.	
7	<b>Maintenance Service During Warranty Period</b>	
	During the warranty period supplier must ensure planned preventive maintenance (PPM) and corrective/breakdown maintenance whenever required.	
8	<b>Installation and Commissioning</b>	
	The bidder must arrange for the equipment to be installed and commissioned by certified or qualified personnel; any prerequisites for installation to be communicated to the purchaser in advance, in detail.	
9	<b>Documentation</b>	
	User (Operating) manual in English Should provide 2 sets(hardcopy and soft-copy)	
	Service (Technical / Maintenance) manual in English Should provide 2 sets(hardcopy and soft-copy)	
	List of important spare parts and accessories with their part number and costing.	

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## Elisa Washer And Reader

No.	Item Specifications	Fill Your Specifications
#	<b>ELISA Reader</b>	
I	Manufacturer Name:	
II	Model No.:	
III	Country of Origin:	
1	<b>Description of Function</b>	
1.1	ELISA Reader is required to Read the Color Density known as OD (Optical Density) in ELISA (Enzyme Linked Immuno-Sorbent Assay) Plates.	
2	<b>Operational Requirements</b>	
2.1	ELISA Reader complete with Printer is required.	
3	<b>Technical Specifications</b>	
3.1	Should have 8-12 measuring channel & reference channel	
3.2	Should have wave length range of 340- 750 nm 6 filters 340, 405, 450, 492, 540, 630nm with provision for fitting any additional filters	
3.3	Should have an absorption range of 0-4.000A	
3.4	Should have a resolution of 0.001A	
3.5	Should read within 6-8 seconds	
3.6	The control panel should have soft color touch screen display, capable of showing graph etc.	
3.7	Should have external & internal programmable time & speed shaking	
3.8	Should be able to read all types of plates	
3.9	Should have a single halogen lamp with save features as light source	
3.10	Should have user defined programs 30 or more.	
3.11	RS232/USB output for Printer, PC connectivity and Data acquisition should be there	
3.12	Should have data memory of 300 plates.	
3.13	Should have external printer, capable of printing complete results & graphs etc. from Elisa system	
3.14	Should come with UPS for the system (Washer & Reader) of suitable rating with voltage regulation and spike protection for 30 minutes back-up.	
4	<b>System Configuration Accessories, spares and consumables</b>	
4.1	System as specified.	
4.2	Halogen Lamps : 2	
4.3	External Printer	
4.4	Dust Cover -01	
4.5	Set of pipettes consisting of single channel variable volume color pipettes 0.5-10 ul, 5-40 ul, 40-200 ul,200-1000 ul	
4.6	6 channel variable volume color multi-channel pipettes 5-50 ul and 50-300 ul.	
5	<b>Operating Environment</b>	
5.1	The product offered shall be designed to be stored and to operate normally under Power Supply, Climate, Temperature, Humidity, etc. for Sudan.	
5.2	Power supply: 220-240V/ 50 Hz AC Single phase with appropriate plug. The power cable must be minimum 3 Meter	
6	<b>Standards and Safety Requirements</b>	
6.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
6.2	CE (93/42 EEC Directives) or USFDA approved product certificate.	
6.3	Must comply with IEC 61010 Safety requirements for electrical equipment for measurement, control, and laboratory use	
7	<b>User Training</b>	
7.1	On site operational training till the familiarity of the system and satisfaction of end user shall be provided.	
8	<b>Warranty</b>	
8.1	Comprehensive warranty for 2 years after acceptance.	
9	<b>Maintenance Service During Warranty Period</b>	
9.1	During the warranty period supplier must ensure corrective/breakdown maintenance whenever required.	
10	<b>Installation and Commissioning</b>	
10.1	Supplier must accomplish proper installation and commissioning of the equipment on site.	
11	<b>Documentation</b>	
11.1	User (Operating) manual in English	
11.2	Service (Technical / Maintenance) manual in English	
11.3	List of important spare parts and accessories with their part numbers and costing.	
#	<b>ELISA Washer</b>	
I	Manufacturer Name:	
II	Model No.:	
III	Country of Origin:	
1	<b>Description of Function</b>	
1.1	A washer for microtitre plates designed to ensure thorough washing of reagents between Enzyme-Linked Immunosorbent Assay (ELISA) steps.	
2	<b>Operational Requirements</b>	
2.1	8 channel.	
3	<b>System Configuration</b>	
3.1	ELISA Washer, automatic, complete unit with complete accessories.	
4	<b>Technical Specifications</b>	
4.1	8-channel strip manifold, open system.	
4.2	Rinse & prime programme.	
4.3	Wash parameters include: 16-character assay name, number of cycles, wash volume, flow rate and variable soak times.	
4.4	Dispense only and aspirate only modes for reagent addition and removal.	
4.5	Shall have built-in multi-speed shaker for improved CVs and reduced assay backgrounds.	
4.6	Shall have crosswise aspiration/double aspiration of flat bottom micro-plates for reduced residual liquid.	
4.7	Bottom wash mode for rapid dilution of reagent.	
4.8	Shall have built-in vacuum & pressure pump assembly.	
4.9	Bottles for waste rinse and wash.	
4.10	Accommodates flat, U or V-shaped bottom plates.	
4.11	Wash cycles: Between 1-10	
4.12	Dispensing volumes: from 25 to 3000ul.	
4.13	Soak time 1-600 seconds.	
4.14	Fluid flow rate in 150 to 1000ul/well/second to accommodate cellular assays.	
4.15	Spill-over protection & electronics isolated from fluidics.	
4.16	Optional automatic buffer switch in flip out aerosol cover or similar.	
5	<b>Accessories, spares and consumables</b>	
5.1	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer. Bidders must specify the quantity of every item included in their offer (including items not specified above).	
6	<b>Operating Environment</b>	
6.1	The product offered shall be designed to be stored and to operate normally under the conditions of the purchaser's country. The conditions include Power Supply, Climate, Temperature, Humidity, etc.	
6.2	Power supply: 220 – 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 meter in length.	
6.3	Suitable UPS with maintenance free batteries, voltage regulation and spike protection for minimum 30 min. back-up shall be supplied with the system.	
7	<b>Standards and Safety Requirements</b>	
7.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
7.2	CE (93/42 EEC Directives) or USFDA approved product certificate.	
7.3	Shall meet IEC 61010-2-081 safety requirements for electrical equipment for measurement, control, and laboratory use - Part 2-081: Particular requirements for automatic and semi-automatic laboratory equipment for analysis and other purposes.	
8	User Training	
8.1	On site operational training till the familiarity of the system and satisfaction of end user shall be provided.	
9	<b>Warranty</b>	
9.1	Comprehensive warranty for 2 years after acceptance.	
10	<b>Maintenance Service During Warranty Period</b>	
10.1	During warranty period supplier must ensure corrective/breakdown maintenance whenever required.	
11	<b>Installation and Commissioning</b>	
11.1	The bidder must arrange for the equipment to be installed and commissioned by certified or qualified personnel; any prerequisites for installation to be communicated to the purchaser in advance, in detail.	
12	<b>Documentation</b>	
12.1	User (Operating) manual in English.	
12.2	Service (Technical / Maintenance) manual in English.	
12.3	List of important spare parts and accessories with their part numbers and costing.	

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## Blood Gas Analyzer

No.	Item Specifications	Fill your Specification
I	Manufacturer Name:	
II	Model No.:	
III	Country of Origin:	
1	<b>Description of Function</b>	
	Blood gas analysers are used to measure blood gases , electrolytes ,pH values and biochemical parameters of the blood	
2	<b>Technical specifications</b>	
	Automated analyzer	
	Compact system for measuring pH, pCO <sub>2</sub> , pO <sub>2</sub> , -HCO <sub>3</sub> in blood	
	Fast and accurate result of test made available in about 60 seconds.	
	May have provision of modular platform for further up gradation to include glucose, lactate & hemoglobin.	
	Built in printer.	
	Barcode reader for reagents and other consumables, patient ID and quality control data	
	Automatic aspiration from syringe or capillary Sample size: approximate 250ul – 50ul	
	Easy-to follow computer assisted guidance for operator	
	Sample type: whole blood, serum, plasma	
	All parameters must be measured from a single sample	
	Approximate time for analysis: around 2 minutes	
	Automatic calibration, programmable 1 and 2 point calibration; in case of non-automatic calibration,	
	Please provide the calibration kit.	
	Data storage: approximate 500 patients	
	Ambient temperature: 18 – 30 °C	
	Reagents and waste level detection by software	
	save mode	
	Measurable parameters (approximate measurable ranges):	

ph 6.5 - 7.8
pCO2 10 -150 mmHg
pO2 10 - 700 mm Hg
Gluc 20 - 500 mg/dl or better
Hb 5 - 25 g/dl and/or Hct 15-60%
tHb mmol/L 0.5 - 16 g
sO2 0 -100%
fO2Hb 0 -100%
fCOHb 0 -100%
fMetHb 0 - 100%
fHb 0 - 100% optionally
Calculated parameters (approximate calculated ranges):
HCO3 0 - 30mmol/L
BE -30 - 30 mmol/L
TCO2 0 - 100mmol/L
pH(T) 6.5 - 7.8
RI 0-10
O2SAT 15-100%
Connection to PC at least RS 232
Self diagnosis system
No maintenance required for the electrodes
<b>3 Consumables:</b>
Specify all Consumables for 2 year (with a usage rate of min 10 tests/day)
sensor cards (box)
<b>4 Power Supply</b>
Input power supply: 220/240 V AC , 50Hz single phase schuko plug
Suitable UPS with maintenance free batteries for minimum 30 min. shall be supplied with the system.
<b>5 Environmental factors</b>
The unit shall be capable of being stored continuously in ambient temperature of 0 -55deg C and relative humidity of 15-90%
The unit shall be capable of operating in ambient temperature of 20-50 deg C and relative humidity of 80%
<b>6 Standards and safety</b>
Should be FDA or CE approved product certificate.
<b>7 User Training</b>
Must provide operating and service trainings
<b>Warranty</b>
Comprehensive warranty for 2 years.
<b>8 Documentation</b>
User (Operating) manual in English Should provide 2 sets(hardcopy and soft-copy)
Service (Technical / Maintenance) manual in English Should provide 2 sets(hardcopy and soft-copy)
List of important spare parts, accessories and consumables with their part numbers and costing.

**41** **Electrophoresis**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Technical specifications</b>	
	<b>The equipment should meet the following specifications:</b>	
1.1	The instrument should be bench-top automated agarose gel based electrophoresis system with sequential processing of each electrophoresis step from application, migration, incubation, staining, destaining, drying, scanning and quantification to allow walk-away operation.	
1.2	It should be able to perform electrophoretic analysis of Acid & Alkaline Haemoglobin (Hb), serum/urine Proteins, Bence Jones proteins, Isoenzymes and Lipoproteins. It should be capable of performing serum/ urine Immunofixations and Haemoglobin/ CSF/ Transferrin Isoelectric Focusing.	
1.3	It should have a wide Test Menu which include: Alkaline Haemoglobin electrophoresis; Acid Haemoglobin electrophoresis; Serum Protein electrophoresis, Immunofixation; Bence-Jones protein electrophoresis and Immunofixation; Pentavalent CK Isozymes; ALP Isozymes.	
1.4	It should be able to perform tests on urine and CSF without concentration.	
1.5	The system should have capacity to run at least 20 protein samples, 12 haemoglobin samples and 6 immunofixations simultaneously on one gel.	
1.6	The system should have option for simultaneous run of blood, urine and CSF samples.	
1.7	The system should have automatic sampling station and use disposable applicators for sample application.	
1.8	The system should work on No-carryover technology.	
1.9	The system should have automatic regulation of voltage, current, power and volt hour.	
1.1	The temperature control on the instrument should be precise, Peltier effect driven.	
1.11	The system should have facility for on-board reagents.	
1.12	The system should be compatible with ready to use, pre- standardized reagent kits.	
1.13	The system should have capacity for user defined programming for at least 15 methods.	
1.14	The drying in the system should be by convection heater with laminar air flow.	
1.15	The staining compartment of the system should be able to operate at least 6-8 different reagents/ stains.	
1.16	The system should be supplied with compatible gel scanner/ densitometer and easy to use intuitive software for gel quantification and analysis.	
1.17	The instrument should have optimal patient data storage facility.	
1.18	The instrument should allow customizable reporting formats and print outs of graphical reports including results, images, traces, demographics and logos.	
1.19	The instrument should have compact foot print.	
1.2	The instrument should have voltage range of 3.5 to 350 V, current range of 3.5 to 200 mA and power range of 0 to 30 W.	
1.21	The instrument should be capable of quality control measures such as automatic Levey Jennings analysis, standard deviations and flagging of normal and abnormal results.	
1.22	To be supplied with computer (minimum i5 processor, 500 GB HDD and 4 GB RAM), A4 size laser printer and appropriate bar code reader.	
1.23	Start-up kit for at least 100 tests should be provided free of cost.	
2	<b>Power Supply</b>	
2.1	Input power supply: 220/240 V AC , 50Hz single phase schuko plug	
2.2	Suitable UPS with maintenance free batteries for minimum 30 min. shall be supplied with the system.	
3	<b>Environmental factors</b>	
3.1	The unit shall be capable of being stored continuously in ambient temperature of 0 -55deg C and relative humidity of 15-90%	
3.2	The unit shall be capable of operating in ambient temperature of 20-50 deg C and relative humidity of 80%	
4	<b>Standards and safety</b>	
4.1	Should be FDA or CE approved product certificate.	
5	<b>User Training</b>	
5.1	Must provide operating and service trainings	
5.2	<b>Warranty</b>	
5.3	Comprehensive warranty for 2 years.	
6	<b>Documentation</b>	
6.1	User (Operating) manual in English Should provide 2 sets(hardcopy and soft-copy)	
6.2	Service (Technical / Maintenance) manual in English Should provide 2 sets(hardcopy and soft-copy)	
6.3	List of important spare parts, accessories and consumables with their part numbers and costing.	

**42** **Water Distiller 5L/HR**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Technical Specifications</b>	
	Minimum Distilled water output: 5L/h	
	Maximum water supply required: 1L/min	
	Flow regulator for water supply	
	Conductivity of water produced: 2 µS/cm or less	
	Automatic cut-out for low water level in the boiler	
	Automatic switch off when distillate reservoir is full	
	Heating elements should be silica glass sheathed	
2	<b>Operating Environment</b>	
	The product offered shall be designed to be stored and to operate normally under Power Supply, Climate, Temperature Humidity, etc. for Sudan.	
	Power supply: 220-240V/ 50 Hz AC Single phase with appropriate plug. The power cable must be minimum 3 Meter	
3	<b>User Training</b>	
	Must provide user training (including how to use and maintain the equipment).	
4	<b>Warranty</b>	
	Comprehensive warranty for 2 years after acceptance.	
5	<b>Maintenance Service During Warranty Period</b>	
	During the warranty period supplier must ensure corrective/breakdown maintenance whenever required.	
6	<b>Installation and Commissioning</b>	
	Supplier must accomplish proper installation and commissioning of the equipment on site.	
7	<b>Documentation</b>	
	User (Operating) manual in English	
	Service (Technical / Maintenance) manual in English	
	List of important spare parts and accessories with their part numbers and costing.	

**43** **Automated Blood Culture Machine**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	

<b>1 Technical Specifications</b>	
The system should be fully automated, continuous Monitoring Technology.	
Should have simple user interface for enhanced ease of use i.e any lab staff member can load the bottles.	
Should have colorimetric/ fluorescent sensor in each bottle for rapid, visual detection of positives prior to entry.	
Advanced algorithms for individual bottle types, for special circumstances.	
Data management systems with bar-code scanning capabilities.	
Should have fully automated quality control.	
Bottle should have media to detect Bacteria & Yeast in one bottle only.	
Should have seamlessly integrated modular unit for culturing blood of minimum 200 samples.	
Should have software for contamination tracking, blood volume quality indicator reporting, time to detection and positivity & negativity detection rates.	
Should be able to interface bi-directionally to an LIS.	
UPS of adequate capacity and latest PC configuration to be provided.	
Temperature: 68 degrees F to 86 degrees	
Relative Humidity: 10% to 85%	
<b>2 Accessories, spares and consumables</b>	
Reagents for 500- 1000 reaction should be provided with the instrument.	
Suitable on - line UPS (about 2 KVA) is required to support the instrument.	
Consumables should have high stability and long shelf life.	
All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer.	
<b>3 Operating Environment</b>	
The product offered shall be designed to be stored and to operate normally under Power Supply, Climate, Temperature, Humidity, etc. for Sudan.	
Power supply: 220-240V/ 50 Hz AC Single phase with appropriate plug. The power cable must be minimum 3 Meter	
<b>4 Standards and Safety Requirements</b>	
Must submit ISO13485-2003/AC:2007 for Medical Devices AND	
CE (93/42 EEC Directives) or USFDA approved product certificate	
Must comply with IEC 61010 Safety requirements for electrical equipment for measurement, control, and laboratory use	
<b>5 User Training</b>	
Must provide user training (including how to use and maintain the equipment).	
<b>6 Warranty</b>	
Comprehensive warranty for 2 years after acceptance.	
<b>7 Maintenance Service During Warranty Period</b>	
During the warranty period supplier must ensure corrective/breakdown maintenance whenever required.	
<b>8 Installation and Commissioning</b>	
Supplier must accomplish proper installation and commissioning of the equipment on site.	
<b>9 Documentation</b>	
User (Operating) manual in English	
Service (Technical / Maintenance) manual in English	
List of important spare parts and accessories with their part numbers and costing.	
Should be FDA or CE approved product certificate.	
<b>10</b>	
<b>11 User Training</b>	
Must provide operating and service trainings	
<b>12 Warranty</b>	
Comprehensive warranty for 2 years.	
<b>13 Documentation</b>	
User (Operating) manual in English Should provide 2 sets(hardcopy and soft-copy)	
Service (Technical / Maintenance) manual in English Should provide 2 sets(hardcopy and soft-copy)	
List of important spare parts, accessories and consumables with their part numbers and costing.	

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No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Description of Function</b>	
	A real-time PCR detection system consists of a thermal cycler equipped with an optical detection module to measure the fluorescence signal generated during each amplification cycle as the fluorophore binds to the target sequence.	
2	<b>Technical Specifications</b>	
	The system should be automated DNA and RNA purification systems for both real-time PCR and post-PCR (end point) analysis using in-built Peltier based PCR machine.	
	System should support applications including absolute quantitation, simultaneous analysis data for relative quantification of Unlimited plates of 96 wells each, (4-6 color multiplexing), allelic discrimination (SNP), dissociation curve analysis as well as pathogen detection and plus/minus assay using internal positive control.	
	Instrument should have 96-well sample block of 0.1ml capacity, able to run fast and standard run on the same block. It can also have 6 separate Peltier-controlled blocks with a fixed gradient with a 25 degree range.	
	System should complete Fast 40 cycle protocol in less than 40 minutes and standard protocol in under 2 hours.	
	The vendor should offer a complete solution for Fast real-time PCR: Fast instruments, Fast reagents, Fast protocols and Fast assays. Sample Ramp Rate: fast Mode: ±3.5°C/sec Standard Mode: ±1.6°C/sec 9600 Emulation Mode: +0.8 and -1.6°C/sec 96°C/sec Peak Ramp Rate: 5.5°C/sec Temperature range: 4°C- 100°C Temperature Accuracy: ±0.25°C (35°C- 95°C) of setpoint/ display temperature measured at 3 minutes after clock start Temperature Uniformity: ±0.50°C, 30 seconds after clock start	
	Excitation source should be single blue LED light source or Tungsten Halogen or high intensity Xenon lamp and emission detection by photodiodes or cooled CCD camera. There should be enough excitation and emission filters to cover majority of dyes.	
	System should be flexible to support 96 well plates, individual tubes and 8 strip tubes.	
	System software should provide simultaneous analysis data for relative quantitation of Unlimited plates of 96 wells each.	
	Normalization of reaction due to non-PCR related fluctuations such as pipetting variations, should be possible by using ROX™ or any other calibrated dye.	
	System should support reaction volume 5-30 µl.	
	All assays should run using Universal Thermal Cycling conditions to eliminate optimization of PCR conditions.	
	The instrument software must be capable of detecting and analyzing a different gene, SNP or pathogen target in every well of the 96-well plate. The instrument software should not restrict the number of assays or targets that can be run on a single 96-well plate.	
	The system should have easy door design for loading and unloading 96-well plates or individual 0.2 ml PCR tubes.	
	System should collect data for all filters for all wells regardless of plate setup. The software should allow reanalysis of data so that data is never lost.	
	The instrument should be pre-calibrated for at least seven dyes including the following during installation at the customer site: FAM™/SYBR® Green I, VIC™/JOE™, NED™/TAMRA™ and ROX™.	
	The user should be able to use any of these dyes in an experiment without needing to recalibrate the instrument. Addition of new dyes should be possible without hardware change.	
	A dedicated licensed full version software for primer and probe design with comprehensive assay design and development guidelines for quantitative and qualitative real-time assays, should be provided to enable designing of custom oligo assays.	
	System should be standardized for at least two homogeneous reaction chemistries including SYBR Green I and dual color TaqMan or four color hybridization probes (FRET).	
	The vendor should be able to offer pre-validated and functionally tested Gene Expression Assays as well as SNP Genotyping Assays and the flexibility to design specific assays for new templates of interest.	
	The instrument software should utilize a multi-componenting algorithm designed to provide precise deconvolution of multiple dye signals to enable the simultaneous detection of multiple fluorophores.	
	The instrument may have display with an LCD touchscreen that is a 6.5inch, full VGA (640 x 480).	
	Analysis work station should be of latest branded Pentium IV with licenced windows XP, operating system and colored laser printer.	
	Instrument should be with standalone operation independent of Computer work station.	
	System should have a port for USB Drive for uploading and downloading data and programs.	
	System should have Gradient function for the temperature or programmable of 20 °C gradient range.	
	Compatible with all kind of kits in market. Should be open system for both reagents & disposable plastic consumables.	
	Texas Red, and Cy5. Any new dyes should be used with in the filter settings.	
	System should be free of passive reference dye.	
	System should be capable of Simultaneous data acquisition for all positions in 10–1000 ms (dynamic mode)	
	Should have preferably 10 inch colored LCD touch Screen display for smooth operation while standalone usage and online fluorescence display.	
	The real time PCR software should allow the user to do the analysis of all type of application like:	
	a. Absolute quantitation	
	b. Advanced Relative quantitation	
	c. Multiplex PCR allelic discrimination (SNP)	
	d. Tm Calling (Meltcurve Anlysis – Sybr)	
	e. Endpoint Genotyping	
	f. Qualitative Gene detection	
	g. High Resolution Melting curve analysis (HRM) for mutation studies	
	h. Pathogen detection and plus/minus assay.	
	Necessary control / QC kits for installation should be supplied along with instruments	
	Software should be compatible with Win 7 to Win 10 with future upgradation.	
	RT PCR software should be of multi user installation facility and allow the user to design the experiment or plate layout conveniently.	
	Software should allow to import / export formats like Txt export, Charts: Data and image.	
	System software should support remote access for trouble shooting.	
	Software should have the provision to use barcode scanner and import / export option for plating layout to reduce the time in plating layout.	
	A laptop/ desktop PC with good configuration should be supplied	
	Should provide AMC terms and conditions	
3	<b>Accessories, spares and consumables</b>	
	Reagents for 500- 1000 reaction should be provided with the instrument.	
	Suitable on - line UPS (about 2 KVA) is required to support the instrument.	
	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer.	
4	<b>Operating Environment</b>	
	The product offered shall be designed to be stored and to operate normally under Power Supply, Climate, Temperature, Humidity, etc. for Sudan.	
	Power supply: 220-240V/ 50 Hz AC Single phase with appropriate plug. The power cable must be minimum 3 Meter	
5	<b>Standards and Safety Requirements</b>	
	Must submit ISO13485-2003/AC:2007 for Medical Devices AND	
	CE (93/42 EEC Directives) or USFDA approved product certificate	
	Must comply with IEC 61010 Safety requirements for electrical equipment for measurement, control, and laboratory use	
6	<b>User Training</b>	
	Must provide user training (including how to use and maintain the equipment).	
7	<b>Warranty</b>	
	Comprehensive warranty for 2 years after acceptance.	
8	<b>Maintenance Service During Warranty Period</b>	
	During the warranty period supplier must ensure corrective/breakdown maintenance whenever required.	
9	<b>Installation and Commissioning</b>	

	Supplier must accomplish proper installation and commissioning of the equipment on site.	
<b>10 Documentation</b>		
	User (Operating) manual in English	
	Service (Technical / Maintenance) manual in English	
	List of important spare parts and accessories with their part numbers and costing.	

**45 Fetal Monitor**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Technical specifications</b>	
2	<b>Operational Requirements :</b>	
2.1	Range: 30 - 240 bpm	
2.2	Accuracy: $\pm$ 2 bpm	
2.3	Alarms: Tachycardia, Bradycardia, Signal Loss, Dual rate detection	
2.4	Mode: Directional Pulsed Doppler	
2.5	Display: FHR values, Pulse indicator, Confidence indicator, Line graph Trace Line graph	
2.6	Repetition rate: 3.0 KHz	
2.7	Frequency: 1.5 MHz & 2.0 MHz	
2.8	Safety: Type BF protection	
2.9	Light Weight, handiest, portable	
2.1	High resolution LCD display	
2.11	Audible & visual alarm	
2.12	Power: AC 220V 50Hz, Built in 9.6V rechargeable batteries.	
3	<b>Environmental factors</b>	
3.1	The unit shall be capable of being stored continuously in ambient temperature of 0 - 55deg C and relative humidity of 15-90%	
3.2	The unit shall be capable of operating in ambient temperature of 20-50 deg C and relative humidity of 80%	
4	<b>Standards and safety</b>	
4.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
5	<b>User Training</b>	
5.1	Must provide operating and service trainings	
5.2	<b>Warranty</b>	
5.3	Comprehensive warranty for 2 years.	
6	<b>Documentation</b>	
6.1	User (Operating) manual in English Should provide 2 sets(hardcopy and soft-copy)	
6.2	Service (Technical / Maintenance) manual in English Should provide 2 sets(hardcopy and soft-copy)	
6.3	List of important spare parts, accessories and consumables with their part numbers and costing.	

**46 Delivery Set**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Technical Specification</b>	
	<b>Set contains:</b>	
1	B.P.Handle No.3 - Qty.1	
2	B.P.Handle No.4 - Qty. 1	
3	Dissecting Forceps Tooth 15cm - Qty.2	
4	Dissecting Forceps Plain 15cm - Qty.1	
5	Scissor Mayo St. 18cm - Qty.1	
6	Scissor Mayo St. & Curved 16cm - Qty.1 Each	
7	Scissor Ephestomy - Qty.1	
8	Needle Holder 18cm - Qty.2	
9	Placenta Puncture Forceps - Qty.1	
10	Sponge Holder 20cm - Qty.2	
11	Sponge Holder 26cm - Qty.1	
12	Anterior Vaginal Retractor - Qty.1	
13	Artery Forceps Curved 16cm - Qty.2	
14	Cord Clips - Qty.1	
15	Sim's Speculum Medium - Qty.1	
16	Sim's Speculum Large - Qty.1	
17	Towel Clip - Qty.4	
18	S. S. Bowl 6 cm - Qty.2	
19	Big Kidney Tray - Qty.1	
20	Allis FORCEPS 8 " - Qty.2	
21	Mosquito Artery cd - Qty.2	
2	<b>Standards and Safety Requirements</b>	
2.1	Must submit ISO 9001 or ISO 13485:2003/AC: 2007	
2.2	CE or USFDA approved product certificate.	
3	<b>Warranty</b>	
3.1	Comprehensive warranty for 2 years after acceptance.	

**47 Digital Thermometer**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Description of Function</b>	
1.1	Clinical digital thermometer to check the temperature of body.	
2	<b>Operational Requirements</b>	
2.1	Human oral use.	
3	<b>System Configuration</b>	
3.1	Digital Thermometer, Clinical.	
4	<b>Technical Specifications</b>	
4.1	Flat type, wide thermometer, safe to use, no glass, no mercury.	
4.2	Scale: Celsius scale.	
4.3	Measurement range: 32°C to 45°C	
4.4	Accuracy: $\pm$ 0.1°C between 35°C to 42°C.	
4.5	Display: Liquid crystal display, easy to read.	
4.6	Shall works on battery. There shall be low battery indicator.	
4.7	Shall have facility of beep sound and switch off.	
4.8	Water proof for ease of cleaning.	
4.9	Shall provide battery. Bidder to indicate the type of and number of battery to be supplied.	
5	<b>Accessories, Spares and Consumables</b>	
5.1	<b>Packing:</b>	
	B Single piece packing in plastic barrel with cover.	
6	<b>Operating Environment</b>	
6.1	The product offered shall be designed to be stored and to operate normally under Climate, Temperature, Humidity, etc. for Sudan.	
7	<b>Standards and Safety Requirements</b>	
7.1	CE (93/42 EEC Directives) or USFDA approved product certificate.	
8	<b>User Training</b>	
8.1	Not applicable.	
9	<b>Warranty</b>	
9.1	Warranty for 2 years after acceptance.	
10	<b>Documentation</b>	
10.1	User's manual to be supplied in English.	

**48 Examination Screen**

No.	Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Description of Function</b>	
1.1	A patient screen is widely used in hospitals when the doctor examines a patient in his private chamber or in the patient's room in the hospitals. The screen can also be used in the operation room or the changing room of the doctors and nurses.	
2	<b>Operational Requirements</b>	
2.1	Epoxy powder coated or Better , three or four fold patient screen.	
3	<b>System Configuration</b>	
3.1	Patient Screen with light blue curtain and fully swivels twin wheel castors.	
4	<b>Technical Specifications</b>	
4.1	Three or four fold ward screen approx. total size 2450 w x 1650 h mm in three or four sections.	
4.2	Mild steel tubular construction with epoxy powder coated or better treated in three or four section 600mm span width at each side and 1210 mm span width in the middle) and mounted on wide spaced legs for each section, and each foot to have two swivel castors size 50mm.	

4.3	To be supplied with hooks, springs and heavy duty curtain, firmly attached at sides, top and bottom. Curtain must have no gaps between sections	
5	<b>Accessories, spares and consumables</b>	
5.1	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer. Bidders must specify the quantity of every item included in their offer (including items not specified above).	
6	<b>Operating Environment</b>	
6.1	The product offered shall be designed to be stored and to operate normally under the conditions. The conditions include Climate, Temperature, Humidity, etc.	
7	<b>Warranty</b>	
7.1	Comprehensive warranty for 2 years after acceptance.	

**49 Couch**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Description of Function</b>	
1.1	Examination couch for use of health checkup and treatment of patients.	
2	<b>Operational Requirements</b>	
2.1	An examination couch with upholstered top in two pieces. Adjustable headrest on gas spring.	
3	<b>System Configuration</b>	
3.1	Examination couch with mattress.	
4	<b>Technical Specifications</b>	
4.1	The examination couch shall be made of a solid steel sheet and plate construction with anti-corrosive and antirust treated epoxy powder coating with upholstered top.	
4.2	All 4 legs of the bed shall be capped with heavy duty rubber footings.	
4.3	Overall size of the table must not be less than 1890mm L x 600mm W x 825mm H	
4.4	Strong Mild steel tubular construction epoxy powder coated treated. The top base of machine pressed double bent Mild steel sheet epoxy powder coated treated finish	
4.5	Gas spring assisted adjustable backrest of approx. size 450mm L x 310mm H with upholstered top.	
4.7	Swinging tray must be attached near headrest for BP apparatus and/or other health checkup minor equipment.	
4.8	The mattress shall be foldable and shall be designed to bend with the positioning of the bed when the backrest of the bed is adjusted.	
4.9	Bidder shall indicate the weight capacity and the total weight of the mattress in kilogram (kg)	
4.10	The mattress shall have mid-firmness, with foam density of approximately 0.55kg/ cubic foot, to avoid that the patient would sink down into foam with antibacterial, antistatic, acid resistance, waterproof and washable vinyl or vinylized nylon cover.	
4.11	The joints must be smooth and neat finish.	
5	<b>Accessories, spares and consumables</b>	
5.1	All standard accessories/consumables/parts required for the proper operation of the above item shall be included in the offer, the quantity and details of any items included in this offer which have not been specified in this Technical Specifications Form.	
6	<b>Operating Environment</b>	
6.1	The product offered shall be designed to be stored and to operate normally under Climate, Temperature, Humidity, etc. for Sudan.	
7	<b>Warranty</b>	
7.1	Comprehensive warranty for 2 years after acceptance.	
8	<b>Maintenance Service During Warranty Period</b>	
8.1	During the warranty period supplier must ensure corrective/breakdown maintenance whenever required.	

**50 Infant Transport Incubator**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Description of Function</b>	
1.1	Required for transportation of premature babies and neonates and it can be used for long distance transportation.	
2	<b>Operational Requirements</b>	
2.1	It shall be self-contained mobile intensive care station including power supply unit and infusion stand.	
3	<b>System Configuration</b>	
3.1	Transport incubator, complete unit with all standard accessories.	
4	<b>Technical Specifications</b>	
4.1	Microprocessor controlled, easy access control panel with feather touch switches.	
4.2	It shall be mounted on collapsible trolley having lockable rust free casters of the size 4 inches dia. or more and with facility to mount two A type Aluminium oxygen cylinders on rack under the incubator.	
4.3	Single walled incubators with at least two large pot holes for access. Iris ports for ventilator & other tubings. Bed level at least 80 cm. above ground level. Two shelves cabinet with door.	
4.4	Mattress to hood distance at least 30 cm.	
4.5	Air Mode: Adjustable set temperatures between 20 oC to 39 oC. Display of set temperatures with resolution of 0.1 oC. Skin mode adjustable set temperatures between 34 oC to 38 oC. Display of set temperatures with resolution of 0.1 oC.	
4.6	Alarms of high, low and probe failure for the set air mode up to +2.5 oC and skin mode of + 0.5 oC of temperatures.	
4.7	Oxygen monitor in incubator hood with display of 21 to 100% Oxygen alarms for high, low and probe failure.	
4.8	Heart and Oxygen saturation monitor: Fixed, built monitors, dual wavelength probe for Oxygen saturation with digital LED display for Heart rate and Oxygen saturation. Alarms for high and low for Heart Rate, Oxygen saturation and probe failure.	
4.9	The system must have an internal rechargeable maintenance free battery to ensure continued functioning of the unit for at least 3 hours during transport. It shall have automatic switch circuit for change over from battery to AC and vice versa.	
4.10	One suction apparatus with negative suction pressure of 5- 120 mm Hg must be provided.	
4.11	Shall provide IV fluid stand to support two infusion bottles.	
4.12	One Syringe infusion pump with stand compatible with 10, 20, and 50 ml syringes compatible with available brand of syringes. Range of infusion rate 1 to 99 ml / hr. in steps of 0.1ml. Shall have display functions for infusion rates, alarms for occlusions, end of infusion and it shall have internal rechargeable battery.	
4.13	Overall Dimensions with trolley (approx.):	
	□ Height less than 60"	
	□ Depth less than 30"	
	□ Width 33"-36"	
	□ Weight 90-100 kg or less.	
5	<b>Accessories, spares and consumables</b>	
5.1	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer.	
6	<b>Operating Environment</b>	
6.1	The product offered shall be designed to be stored and to operate normally under Power Supply, Climate, Temperature, Humidity, etc. for Sudan.	
6.2	Power supply: 220 – 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metre in length.	
7	<b>Standards and Safety Requirements</b>	
7.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
7.2	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
7.3	Shall meet IEC 60601-2-50 Medical Electrical Equipment PART 2: Particular Requirements for the Safety of Baby Incubators.	
8	<b>User Training</b>	
8.1	Must provide user training (including how to use and maintain the equipment).	
9	<b>Warranty</b>	
9.1	Comprehensive warranty for 2 years after acceptance.	
10	<b>Maintenance Service during Warranty Period</b>	
10.1	During warranty period supplier must ensure preventive maintenance corrective/breakdown maintenance whenever required.	
11	<b>Documentation</b>	
11.1	User (Operational) manual in English.	
11.2	Service (Technical / Maintenance) manual in English.	
11.3	List of important spare parts and accessories with their part numbers and costing.	

**51 Phototherapy Machine**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Description of Function</b>	
1.1	Phototherapy units are used to treat hyperbilirubinemia, a condition characterized by high bilirubin concentrations in the blood. These units are also called: bilirubin lamps, bilirubin lights, fiberoptic phototherapy blankets, neonatal phototherapy units.	
2	<b>Operational Requirements</b>	
2.1	It must be LED based single surface phototherapy unit used for clinical management of neonatal hyperbilirubinemia.	
3	<b>System Configuration</b>	
3.1	Phototherapy Unit (LED type), complete unit with all standard accessories.	
4	<b>Technical Specifications</b>	
4.1	Single surface, LED phototherapy unit with blue power.	
4.2	Light Source : □ Blue power LEDs for phototherapy	
4.3	Wavelength: Blue light: Peak between 450 and 470nm.	
4.4	There shall be no UV and no IR radiation.	
4.5	<b>Phototherapy Intensity Adjustment:</b> □ Intensity at 30 cm : Low level > 20 μW/cm 2/nm. High level > 30 μW/cm 2/nm. □ Effective area: 250m round (at 30cm).	
4.6	Therapy timer: An accurate LCD timer for recording therapy time with reset facility.	
4.7	Life of LED: Minimum 20,000hours of use.	
4.8	It must have flexible neck for easy use with Radiant Warmer.	
4.9	Flexible Mobile Stand: □ Base of Stand: Sturdy mild steel with epoxy powder coated base with casters. □ Approx. 4 inch dia castors with break/locking mechanism. □ Easily slides below all standard trolleys. □ Height: Adjustable from 1,000 to 1,500mm +/- 50mm (from ground). □ Tilt adjustment: 0° (horizontal) to approx. 40° (both sides).	
4.10	It shall have thick gauge Stainless Steel top of baby tray with foldable transparent acrylic side panels. The baby tray shall have facility for trendelenburg and anti-trendelenburg position.	

4.11	It shall have breakage free Stainless Steel clips and holders for acrylic panels.	
4.12	Shall provide foam / bubble mattress.	
4.14	It shall have X-ray cassette guide facility.	
4.16	It shall have facility to provide phototherapy from underneath also.	
<b>5</b>	<b>Accessories, spares and consumables</b>	
5.1	Accessories	
B	Phototherapy eye pads for preterm and term babies: 05 each.	
5.2	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer. Bidders must specify the quantity of every item included in their offer (including items not specified above).	
<b>6</b>	<b>Operating Environment</b>	
6.1	The system offered shall be designed to store and to operate normally under the conditions of the purchaser's country. The conditions include Power Supply, Climate, Temperature, Humidity, etc.	
6.2	Power supply: 220 – 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metre in length.	
<b>7</b>	<b>Standards and Safety Requirements</b>	
7.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
7.2	CE (93/42 EEC Directives) or USFDA approved product certificate.	
7.3	Shall meet IEC 60601-2-50 Medical Electrical Equipment PART 2-50: Particular Requirements for the Safety of Infant Phototherapy Equipment.	
<b>8</b>	<b>User Training</b>	
8.1	Must provide user training (including how to use and maintain the equipment).	
<b>9</b>	<b>Warranty</b>	
9.1	Comprehensive warranty for 2 years after acceptance.	
<b>10</b>	<b>Maintenance Service During Warranty Period</b>	
10.1	During warranty period supplier must ensure corrective/breakdown maintenance whenever required.	
<b>11</b>	<b>Installation and Commissioning</b>	
11.1	The bidder must arrange for the equipment to be installed and commissioned by certified or qualified personnel; any prerequisites for installation to be communicated to the purchaser in advance, in detail.	
<b>12</b>	<b>Documentations</b>	
12.1	User (Operating) manual in English.	
12.2	Service (Technical / Maintenance) manual in English.	
12.3	List of important spare parts and accessories with their part numbers and costing.	

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## Infant Warmer

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
<b>1</b>	<b>Technical Specification</b>	
1.1	It should be Microprocessor based Servo Controlled Warmer with the Service adjustable height for user comfort.	
1.2	It should have visually coded control panel and color-coded safety alarms for simple understanding.	
1.3	The Heating element should have life time warranty and should be of Quartz or Calrod type.	
1.4	The size of heating element should be precisely matched to the bed size for even heat distribution.	
1.5	The system should be made of FR grade materials to dampen the fire and retards continuous burning.	
1.6	The system should not have any access to heater element to protect the user from accidental contact during operation.	
1.7	The Unit should have Medical grade power inlet in case of any short circuit happens the fuse will blow off and protect the Care given and equipments.	
1.8	Warm up time should be less than 15 minutes.	
1.9	The heater output should be less than 600 watts and adjustable in twenty steps of 5% increment.	
1.1	All the parts that could come in potential contact with the patient should be made of Bio-compatible materials.	
1.11	It should use probe guard to prevent damage of the skin probe to enhance the life of the probe.	
1.12	The unit should stop heating if the temperature exceeds the desired value by 1 degree C and restarts only when the temperature falls back into the 1 degree C.	
1.13	It should have +/- 15 Degree Continuous Bed tilting mechanism with self locking facility and should be operable from both sides.	
1.14	The overhead heater head should 90 degrees swivel to either side for easier access and enable taking x-rays.	
1.15	It should have an integrated Slide out X-Ray tray below the X-Ray Transparent mattress, which can be pulled in and out without moving the infant.	
1.16	It should have side rail system to fit accessories and allow flexibility on positioning of accessories.	
1.17	It should have APGAR timer with audible tones on one, five and ten minutes.	
1.18	Its mattress size should be 450- 460x600-640x25-30 mm.	
1.19	It should use Thermister base probes with probe interchangeability +/- 0.1 degree C at 30-40 degree C.	
1.2	It should have independent observation light (independent of Warmer mains on/off) with intensity of minimum 500 Lux at centre of mattress with high lamp life.	
1.21	Unit surfaces should be accessible and smooth to support quick and thorough cleaning to allow infection control.	
1.22	The Unit should be supplied with superior quality completely sealed Breathing Mattress to provide maximum patient safety and comfort.	
1.23	It should have a self test function performed at power on and continuously during operation.	
1.24	It should be supplied with one IV Pole, 2 Nos Cylinder holders.	
<b>2</b>	<b>Accessories:</b>	
B	Reusable Temperature probe-2 Nos.	
B	Disposable temperature probes-10 Nos.	
B	Mattress	
B	X-ray tray	
B	Instruments shelf	
<b>3</b>	<b>Operating Environment</b>	
3.1	The system offered shall be designed to store and to operate normally under the conditions of the purchaser's country. The conditions include Power Supply, Climate, Temperature, Humidity, etc.	
3.2	Power supply: 220 – 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metre in length.	
<b>4</b>	<b>Standards and Safety Requirements</b>	
4.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
4.2	CE (93/42 EEC Directives) or USFDA approved product certificate.	
4.3	Shall meet IEC 60601-2-50 Medical Electrical Equipment PART 2-50: Particular Requirements for the Safety of Infant Warmer Equipment.	
<b>5</b>	<b>User Training</b>	
5.1	Must provide user training (including how to use and maintain the equipment).	
<b>6</b>	<b>Warranty</b>	
6.1	Comprehensive warranty for 2 years after acceptance.	
<b>7</b>	<b>Maintenance Service During Warranty Period</b>	
7.1	During warranty period supplier must ensure corrective/breakdown maintenance whenever required.	
<b>8</b>	<b>Installation and Commissioning</b>	
8.1	The bidder must arrange for the equipment to be installed and commissioned by certified or qualified personnel; any prerequisites for installation to be communicated to the purchaser in advance, in detail.	
<b>9</b>	<b>Documentations</b>	
9.1	User (Operating) manual in English.	
9.2	Service (Technical / Maintenance) manual in English.	
9.3	List of important spare parts and accessories with their part numbers and costing.	

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## Baby Capsule Phototherapy

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
<b>1</b>	<b>Technical Specification</b>	
<b>1</b>	<b>Description of Function</b>	
1.1	Used to treat of hyperbilirubinemia in neonates concentrations in the blood.	
<b>2</b>	<b>Technical Specifications</b>	
2.1	Mobile assembly with casters and accessories basket for easy movement within the unit	
2.2	Microprocessor control of the radiance applied to the patient and monitors treatment time and the service life of the light emitting source	
2.3	Alphanumeric display with backlight and easy-to-operate membrane keypad	
2.4	Emission in the blue light spectrum for treating bilirubin	
2.5	High radiance in the center and edges of the light focus	
2.6	Approx 15 SuperLEDs	
2.7	No infrared or ultraviolet light emission	
2.8	Average service life of 20,000 hours.	
2.9	Radiance emitted: 47 $\mu\text{w}/\text{cm}^2\cdot\text{nm}$ (maximum)	
2.10	Mean radiance: 32.6 $\mu\text{w}/\text{cm}^2\cdot\text{nm}$	
2.11	Dimensions of the lighted spot on the mattress approx : 32 x 20 cm	
2.12	Height approx: 41.5 cm (tabletop), 120 cm (mobile)	
2.13	Width approx: 40 cm (tabletop), 46.8 cm (mobile)	
2.14	Length approx: 59.5 cm (tabletop), 83.8 cm (mobile)	
2.15	Weight approx: 13.4 kg (tabletop), 31.9 kg (mobile)	
<b>3</b>	<b>Accessories, spares and consumables</b>	
3.1	Optical probe to measure radiance	
3.2	Eye protection kit (glasses)	
3.3	Gel mattress	
3.4	Circular pillow	
3.5	Skin temperature sensor	
3.6	Skin sensor adhesives	
3.7	Sliding drawers.	
<b>4</b>	<b>Power Supply</b>	
4.1	Input power supply: 220/240 V AC , 50Hz single phase schuko plug	
<b>5</b>	<b>Environmental factors</b>	
5.1	The unit shall be capable of being stored continuously in ambient temperature of 0 -55deg C and relative humidity of 15-95%	
5.2	The unit shall be capable of operating in ambient temperature of 20-50 deg C and relative humidity of 80%	
<b>6</b>	<b>Standards and Safety Requirements</b>	
6.1	Should be FDA or CE approved product certificate.	
<b>7</b>	<b>User Training</b>	
7.1	Must provide operating and service trainings	
<b>8</b>	<b>Warranty</b>	

	Comprehensive warranty for 2 years.	
9	<b>Documentation</b>	
	User (Operating) manual in English Should provide 2 sets(hardcopy and soft-copy)	
	Service (Technical / Maintenance) manual in English Should provide 2 sets(hardcopy and soft-copy)	
	List of important spare parts, accessories and consumables with their part numbers and costing.	

54 **Mobile X-Ray Machine**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Technical Specifications</b>	
	A microprocessor controlled mobile x-ray imaging unit is to include but not limited to the following:	
	Microprocessor controlled x-ray generator, > 20 KW	
	It should have a digital display of mAs and KV and an electronic timer.	
	KV range:40KV to 125KV	
	mA range: 300 mA or more. Please specify mA and seconds separately and not mAs alone.	
	shortest exposure time: 1 ms.	
	<b>X-Ray Tube:</b> .	
	Output should match the output of the generator.	
	Must have a rotating anode with at least 2500 rpm and focal spot size should be less than 1mm.	
	Rotating anode tube system, with focal spots, 0.6/1.2 mm of large heat storage capacity, > 120,000 HU	
	Collimator- Manually adjustable multileaf collimator, rotatable 490°	
	The exposure release switch should be detachable with a cord of at least 5 meters	
	Remote control operating distance > 10 meters	
	Remote control operating radius- 180 deg	
	lightweight manual driven unit, with braking system.	
	Small source image distance, please specify.	
	Direct 220-240V/50Hz single phase power line connection with built in line voltage compensation.	
	Grid Ratio 6:1 of following sizes should be provided (1) each 12"x15" & 10"x12"	
2	<b>User Training:</b>	
2.1	The Supplier shall conduct user training for this equipment to enable operators to use the equipment properly. The training shall include the use of all operational functions of the equipment, as well as routine checks and maintenance expected by users.	
3	<b>Warranty</b>	
3.1	Comprehensive warranty for 2 years from acceptance.	
4	<b>Maintenance Service During Warranty Period</b>	
4.1	During warranty period supplier must ensure preventive maintenance & corrective/breakdown maintenance whenever required.	
5	<b>Installation and Commissioning</b>	
5.1	The equipment to be installed by certified or qualified personnel; any prerequisites for installation to be communicated to the purchaser in advance, in detail.	
6	<b>Documentation</b>	
6.1	User (Operating) manual in English.	
6.2	Service (Technical / Maintenance) manual in English.	
6.3	List of important spare parts and accessories with their part numbers and costing.	

55 **Dental X-ray**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Technical Specifications</b>	
	It should be digital. Suitable for Adult and Pediatrics. Designed for imaging the maxillofacial region using a rotating x-ray beam (panoramic radiography), which produces a single image of the dental arch as a fixed elliptical shape; and/or to obtain images of the complete skull (cephalometric radiography) or of a region of interest from various angles.	
	Leak radiation: Outside one meter <0.002mR/h(national standard:0.25mR/h)	
	60 KV- 70 KV, 0mAs to 15 mAs	
	mobile cart	
	Soft Arm	
	Microprocessor controlled	
	Separate exposure switch	
	Exposure Time 0.1 to 4.0 second	
	Total Filtrations2.0 mmAL	
	Tube Head&cone are internally LEAD coated	
	Focal spot size should be: 0.6 mm -0.8 mm	
	Magnification: 1.2-1.5x	
	Very small focal spot(0.3mm-0.4mm)	
	Automatic Exposure Control (AEC) is required which is used to control the length of x-ray exposure.	
	Constant potential; high-frequency required	
2	<b>User Training:</b>	
2.1	The Supplier shall conduct user training for this equipment to enable operators to use the equipment properly. The training shall include the use of all operational functions of the equipment, as well as routine checks and maintenance expected by users.	
3	<b>Warranty</b>	
3.1	Comprehensive warranty for 2 years from acceptance.	
4	<b>Maintenance Service During Warranty Period</b>	
4.1	During warranty period supplier must ensure preventive maintenance & corrective/breakdown maintenance whenever required.	
5	<b>Installation and Commissioning</b>	
5.1	The equipment to be installed by certified or qualified personnel; any prerequisites for installation to be communicated to the purchaser in advance, in detail.	
6	<b>Documentation</b>	
6.1	User (Operating) manual in English.	
6.2	Service (Technical / Maintenance) manual in English.	
6.3	List of important spare parts and accessories with their part numbers and costing.	

56 **Portable Ultrasound Machine**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Description of Function</b>	
1.1	A general purpose fully digital B & W Ultrasound imaging system.	
2	<b>Operational Requirements</b>	
2.1	It shall operate on mains AC supply.	
3	<b>System Configuration</b>	
3.1	System shall come with main unit, 1 probe, 1 unit of black and white video thermal printer and Ultrasound gel warmer 1 unit.	
4	<b>Technical Specifications</b>	
4.1	Latest technology and all digital beam former general purpose standalone ultrasound machine with integrated light weight mobile cart.	
4.2	Main applications: OB/GYN, abdominal, peripheral vessels and small parts.	
4.3	The system shall have at least 12" or higher flat LCD monitor with tilt & swivel facilities.	
4.4	Shall have B-mode, M-mode, B/M mode, 2B mode & 2D mode.	
4.5	The system must have at least Two active probe ports for easy use and convenient operation.	
4.6	256 Grey shades for sharp contrast resolutions.	
4.7	Controls for depth, gain compensation, body markers with transducer position.	
4.8	Shall have real time continuous dynamic focus.	
4.9	Shall have facility for image zoom, freeze, text annotation.	
4.10	The system shall have extensive calculation software package for Ob/Gyn and general imaging.	
4.11	The system must have provision for measurement and calculation of distance, area, volume, heart rate and circumference on the image.	
4.12	The system shall have Tissue Harmonic Imaging.	
4.13	Near and far gain adjustable.	
4.14	Contrast, adjustable.	
4.15	Focus: auto adjustable.	
4.16	Shall have an alpha-numeric keyboard with easy access scans controls and track ball and status display.	
4.17	Cine memory of 250 frames for cine loop playback.	
4.18	Frame rate: not less than 50fps.	
4.19	Display depth: minimum 28-30cm	
4.20	Dynamic range: selectable up to approximately 165dB.	
4.21	Image storage: Minimum 200 patient's images on main unit.	
4.22	Shall have facility for inbuilt CD writer.	
4.23	System shall be DICOM ready and capable of being interfaced with HIS/RIS/PACS.	
4.24	Facility for future upgradeability.	
4.25	Probe: 2 to 5 MHz convex probe for Obs /Gyn. and abdominal application is to be supplied.	
5	<b>Accessories, spares and consumables</b>	
5.1	<b>Accessories:</b>	
	B Black and white video thermal printer with 50 rolls of high density recording paper: 01 no.	
	B DVD/CD Recorder with DICOM media transfer.	
	B Ultrasound gel warmer: 01 unit.	
5.2	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer.	
6	<b>Operating Environment</b>	
6.1	The product offered shall be designed to be stored and to operate normally under Power Supply, Climate, Temperature, Humidity, etc. for Sudan.	
6.2	Power supply: 220 – 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metre in length.	

6.3	Shall provide UPS of suitable rating with voltage regulation and spike protection for 30 minutes back-up.	
<b>7 Standards and Safety Requirements</b>		
7.1	Must submit ISO 13485:2003/AC: 2007 AND	
7.2	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
7.3	Electrical safety conforms to standards for Electrical Safety IEC 60601-2-37 Medical electrical equipment – Part 2-37: Particular requirements for the basic safety and essential performance of ultrasonic medical diagnostic and monitoring equipment.	
<b>8 User Training</b>		
8.1	Must provide user training (including how to use and maintain the equipment).	
<b>9 Warranty</b>		
9.1	Comprehensive warranty for 2 years after acceptance.	
<b>10 Maintenance Service During Warranty Period</b>		
10.1	During the warranty period supplier must ensure preventive maintenance and corrective/breakdown maintenance whenever required.	
<b>11 Documentation</b>		
11.1	User (Operating) manual in English.	
11.2	Service (Technical / Maintenance) manual in English.	
11.3	List of important spare parts and accessories with their part number and costing.	

**57 Conventional X-Ray Machine**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Description of Function</b>	
1.1	A general purpose X-ray machine for routine X-ray examinations at healthcare facilities.	
2	<b>Operational Requirements</b>	
2.1	It shall be suitable to be used for adult and paediatric patients in general Radiography examination.	
3	<b>System Configuration</b>	
3.1	X-ray Generator, 1 unit	
3.2	X-Ray tube & tube support system, 1 unit	
3.3	Radiographic patient table, fixed height 1 unit	
3.4	Floor mounted Bucky stand, 1 unit	
4	<b>Technical Specifications</b>	
4.1	Should be floor to floor mounted	
<b>X-ray Generator:</b>		
	Microprocessor based, high frequency inverter generator, the generator shall have at least 50KHz.	
	Generator Output: not less than 30 Kw	
	Radiographic voltage: 40 kV to 140kV, in 1kV step.	
	Radiographic current approx : 10 to 350 mA	
	Exposure times: 0.001sec (1msec) - 10sec.	
	Anatomical Programmable Radiographic mode shall be available.	
	Manual & automatic exposure control and automatic brightness control shall be available.	
	Shall come with overload protection device.	
<b>Floor Mounted Tube Stand:</b>		
	Longitudinal travel: approx. 1750mm.	
	Vertical travel: from 630 -1850mm or in the range.	
	Movement arrested by electromagnetic brakes.	
	Rotation of tube arm around vertical axis: 1800; lockable at 00 to +/- 900.	
<b>X-Ray Tube:</b>		
	Maximum tube output shall match with the generator output of not less than 20 Kw.	
	X-ray tube rotating: +/-90°.	
	Large focus not more than 1.2 mm.	
	Small focus not more than 0.6 mm.	
	Maximum tube voltage 140 KV.	
	Filtration: min 2.5mm Al equivalent.	
	Cooling method passive or forced air and/or oil cooling.	
	Anode rotating speed: More than 3000 rpm.	
	Anode heat capacity shall not be less than 200 KHU.	
<b>Collimator:</b>		
	Manually adjustable.	
	Manually selectable filters.	
	Light localizer with timer controlled light.	
	Built-in light switch should be provided.	
	Turning angle should be min +/- 45 degree.	
	Light source: halogen lamp or better.	
<b>Radiography Patient Table:</b>		
	Radiography table shall be fixed height, 4-way floating top type with foot switch control.	
	Come with grid and cassette tray, with grid ratio: approx 8:1 or more. Grid line number: 40 line/cm. Focus distance: 115cm.	
	Cassette size: accept all sizes from cassette 5" x 7" cm to 14" x 17" type.	
	Radiography table shall be fixed height of about 60cm.	
	Table top to film distance: approx. 6cm.	
	Table top transverse movement : approx. 114cm.	
	Table longitudinal movement : approx. ± 29cm.	
	Table top dimension: approx. 2000 x 800 mm (LxW)	
	Table movement arrested by electromagnetic brakes.	
<b>Floor Mounted Bucky Stand:</b>		
	Vertical travel: from 460-1700mm or in the range.	
	Moving Grid with Grid ratio approx: 8:1 or more. Grid line number: 40 lines/cm.	
	Shall come with Automatic Exposure Control for vertical bucky exposures.	
	Cassette size: accept all sizes from 5"x7" to 14"x17".	
	Movement arrested by electromagnetic brakes.	
<b>Control Console:</b>		
	Digital Display.	
	Minimum 3 Point Exposure Technique.	
	Status display, error display.	
	Shall have area dose product determination and display.	
	Shall come with radiography remote control in control room.	
<b>Accessories, spares and consumables</b>		
	All standard accessories, consumables and parts required to operate the equipment.	
<b>Power supply:</b>		
	Power supply: 415 + 5%V (3 Phase), 50Hz fitted with appropriate plug	
<b>Environmental factors</b>		
	The unit shall be capable of being stored continuously in ambient temperature of 0 -55deg C and relative humidity of 15-95%	
	The unit shall be capable of operating in ambient temperature of 20-50 deg C and relative humidity of 80%	
<b>Standards &amp; Safety Requirements</b>		
	Should be CE or FDA approved product certificate.	
<b>Warranty</b>		
	Comprehensive warranty for 2 years.	
<b>Documentation</b>		
	User (Operating) manual in English Should provide 2 sets(hardcopy and soft-copy)	
	Service (Technical / Maintenance) manual in English Should provide 2 sets(hardcopy and soft-copy)	
	List of important spare parts, accessories and consumables with their part numbers and costing.	

**58 Echo Ultrasound Machine**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Description of Function</b>	
1.1	Colour Doppler Echocardiography System is required to study the anatomical abnormalities and blood flow in the heart and associated vessels.	
2	<b>Operational Requirements</b>	
2.1	Latest generation Electronic Phased array Colour Doppler system with minimum 512 electronic independent channels.	
	System must be DICOM ready and capable of being interfaced with HIS/RIS/PACS.	
	Must be upgradable to next generation system on site.	
	Frequency compounding or better technology for better resolution and penetration.	
3	<b>System Configuration</b>	
3.1	Colour Doppler System with all application packages, quad loop for serial studies with high frame rate review. Harmonic imaging capability in all modes. (Tissue, Contrast, Angio) Integrated Stress Echo Package, Digital Storage and Retrieval – 01no.	
	B 1-3 MHz Adult Cardiac probe Electronics Phased Array probe- 01 ea.	
	B 3-11 MHz Electronics Phased Array Probe for Vascular applications- 01 ea.	
	B Multi-plane TEE Probe- 4.8 MHz for Adult as well as Paediatric echocardiography.	
	B 5-10 MHz Electronic phased array probe for Paediatric cardiology.	
	B Colour Printer -01no.	
	B B/W Video Thermal Printer -01no.	
4	<b>Technical Specifications</b>	
4.1	Latest generation Electronic Phased array colour Doppler system with Minimum 512 Electronic independent channels.	
4.2	256 gray shades for sharp contrast resolutions	

4.3	Multi-dimensional Beam former for generating two images simultaneously-one at low end of bandwidth and one at high end-then selectively retrieves and mixes the components together for finely textured 2-D or 8 mode image with superior contrast resolution	
4.4	Adult Cardiac and Vascular Probes to be supplied which must be latest generation wide band transducers without frequency selection for higher sensitivity of response over a broader frequency range of operation. All probes to be phased array. Probes for paediatric application and Trans oesophageal Echo for future requirement.	
4.5	Harmonic Imaging. System must have following modes in harmonic with separate setting for: B Tissue Harmonic B Contrast Harmonic - both triggered and real time B Harmonic Angio. B Quantification of harmonics imaging	
4.6	Harmonic imaging capability in Adult Cardiac, Paediatric Cardiac and linear Probe.	
4.7	Gain control in two dimensions for additional level of flexibility to image quality control.	
4.8	Real time high frequency 2D for higher resolution and low frequency Doppler for higher sensitivity in all probes	
4.9	Frame rate must be 300 FPS or more.	
4.10	Steerable PW/CW in all Phased Array probes.	
4.11	High definition acoustic zoom for enlarging sections of 2D and colour flow images with more acoustic information for greater clarity and detail while maintaining an optimal frame rate.	
4.12	Modes -4D, M-Mode, Steerable PW/CW Doppler, Colour Doppler, and High Definition colour. flow with capability of automatically picking up colour flow as a function of focal depth	
4.13	Monitor must be 15" or more, high resolution colour monitor. Tilt and Swivel monitor must be able to view in all angles and all light conditions.	
4.14	Colour Flow Imaging for: B Increased lateral & spatial resolution. B Detection of even subtle areas of turbulence, displaying a more physiological blood flow appearance without loss of frame rate. B Colour flow with capability of automatically picking up colour flow as a function of focal depth.	
4.15	Tissue Colorization (B-colour) for improved contrast resolution	
4.16	Application software for Adult, Paediatric, Foetal and Peripheral Vascular and Trans oesophageal applications. (All application packages must be built into the system).	
4.17	Cine loop memory- more than 120MB of memory. B High Frame rate review for better clarity of playback images study in slow motion. B Quad loop with memory for pre and post image comparison of any procedure. B Memory: 256 frames or more in quad loop, M Mode & Doppler Scroll Memory-40 seconds or more. B Frame grabber facility for post analysis.	
4.18	Various maps for pre and post processing.	
4.19	ECG triggers facility.	
4.20	User defined system and application pre-sets for multi-user department.	
4.21	Minimum 4.8 GB optical disc drive for image storage and retrieval. (standard with system)	
4.22	Dedicated integrated dynamic stress echo package for flexible user defined protocols with stacked sub loops facility and contrast stress protocol.	
4.23	Tissue movement colorization with quantification possibility for IHD/CAD patients.	
4.24	Three transducer ports will be preferred.	
4.25	Colour Map resolution up to 128 levels.	
4.26	Study Manager (> 1.5 GB) for on-cart digital acquisition, review and editing of complete patient studies.	
4.27	Facility of Real-time perfusion studies.	
4.28	System Peripherals shall include: B CD Writer with calculation facility on playback. B Colour Video Printer. B B/W Thermal Printer.	
5	<b>Accessories, spares and consumables</b>	
5.1	<b>Accessories:</b> B DVD/CD Recorder with 100 CDs and 100 DVDs B Colour Print Paper- 500 sheets B B/W Thermal Paper - 10 rolls B ECG Cable - 02nos. B MO Disc - 10nos	
5.2	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer.	
6	<b>Operating Environment</b>	
6.1	The product offered shall be designed to be stored and to operate normally under Power Supply, Climate, Temperature, Humidity, etc. for Sudan.	
6.2	Power supply: 220 – 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metre in length.	
6.3	UPS of suitable rating conforming to international standards shall be supplied for minimum 30 min. backup for the entire system.	
7	<b>Standards and Safety Requirements</b>	
7.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
7.2	CE (93/42 EEC Directives) or USFDA approved product certificate.	
7.3	The product shall comply to IEC 60601-2-37 ed1: Medical Electrical Equipment - Part 2-37: Particular Requirements for the Safety of Ultrasonic Medical Diagnostic and Monitoring Equipment.	
7.4	Type of protection against electric shocks - Class I Degree of protection against electric shocks for ultrasound probes Type "BF" For ECG electrodes Type "CF"	
8	<b>User Training</b>	
8.1	Must provide user training (including how to use and maintain the equipment).	
9	<b>Warranty</b>	
9.1	Comprehensive warranty for 2 years.	
10	<b>Maintenance Service during Warranty Period</b>	
10.1	During the warranty period supplier must ensure planned preventive maintenance (PPM) along with corrective/breakdown maintenance whenever required.	
11	<b>Documentation</b>	
11.1	User (Operative) manual in English	
11.2	Service (Technical / Maintenance) manual in English	
11.3	List of important spare parts and accessories with their part numbers and costing.	

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## C-Arm Machine

No.	Item Specifications	Fill your Specification
I	Manufacturer Name:	
II	Model No.:	
III	Country of Origin:	
1.1	Description of Function	
1	This equipment is used in orthopaedic fractures for imaging of bone pathology or fractures on display monitor during operation/ reduction of fractures.	
2	Operational Requirements For continuous fluoroscopy, image storage and retrieval The system offered shall be a general fluoroscopy/radiology system. It should be a non-digital, non-DICOM compatible type.	
3	<b>System Configuration</b>	
3.1	X-ray C-Arm Mobile with complete accessories	
4	<b>Technical Specifications</b>	
4.1	X-Ray Generator	
	Microprocessor based, high frequency inverter generator	
	Generator Output: not less than 2kW at 100kV	
	Fluoroscopic/ Radiographic KV range	
	Lower limit shall not exceed 40 KV	
	Higher limit shall not be less than 120 KV	
	Fluoroscopic mA range	
	Lower limit shall be ~0.1 mA	
	Upper limit shall be ~9 mA	
4.2	X-Ray Tube	
	Rotating anode type	
	Single focal spot, shall not be more than 0.6 mm	
	Nominal voltage: 110 KV	
	Anode heat storage capacity not less than 300 KHU	
	Inherent filtration should be at least 3 mm Al eq.	
4.3	Collimator	
	Operator controlled automatic collimation	
4.4	C-Arm	
	- Focus - I.L. Distance shall be at least 100 cm	
	- Depth shall be ~ 75cm	
	- Horizontal travel at least 200mm	
	- Vertical travel at least 450 mm	
	- Orbital movement shall be ~125°	
	- Swivel range shall be ~12°	
	- Rotation about horizontal axis shall be more than +/-180°	
4.5	Image Intensifier	
	- At least 23 cm input screen with direct coupling with camera	
	- Shall be at least 52 $\mu$ /cm	
	- Noise reduction, scattered light trap for high contrast dynamics	
	- CCD camera technology with ABC and AGC control	
4.6	TV Monitor	
	- 2 units LCD monitor side by side for live and reference image	
	- Shall be at least 43 cm with automatic brightness control	
4.7	Image rotation	
	- Shall be at least 625 scanning lines at 50 Hz	
	- Trolley for 2 display screens and with the alphanumeric keyboard included	
	- High resolution and anti glare	
4.8	Imaging Modes	
	- Fluoroscopy mode shall have the following facilities:	
	- Continuous fluoroscopy with last image hold	
	- Last image hold with at least two frames image memory	
	- Continuous fluoroscopy with image acquisition rate: about 20 frame/second.	
	- Hard disk with image storage capacity of at least 30000 images	

	- RAM Memory of 256 images	
	- Mosaic display of 16 images	
	- Zoom (x 2)	
	- Measures: at least distances, angles	
	- Come with CD/DVD/RW drive	
4.9	Video printer for B/W thermal printing on paper, size 20 x 25 cm, resolutions about 300 dpi. The video printer can be placed on the monitor trolley	
4.1	Indicate here other features and software functions included in this offer.	
	<b>5 System Configuration Accessories, spares and consumables</b>	
5.1	Video printer for B/W thermal printing 01 no.	
5.2	Sterilizable textile cover and clips, for the X-ray tube and the Cassette holder for 24 x 30 cm	
5.3	All standard accessories/consumables/parts required for the proper operation of the above item shall be included in the offer.	
	<b>6 Operating Environment</b>	
6.1	The product offered shall be designed to and operate normally under Power Supply, Climate, Temperature, Humidity, etc. for Sudan.	
6.2	Should work on 220-240V/ 50 Hz AC Single phase fitted with appropriate plugs and sockets.	
	<b>7 Standards and Safety Requirements</b>	
	The unit offered shall be certified to meeting the relevant requirements of TUV, CE mark (MDD), FDA and/ or any equivalent quality and safety standards.	
	<b>8 User Training</b>	
8.1	On site operational training till the familiarity of the system and satisfaction of end user shall be provided.	
	<b>9 Warranty</b>	
9.1	Comprehensive warranty for 2 years.	
	<b>10 Maintenance Service During Warranty Period</b>	
10.1	Preventive & Corrective Maintenance: During the warranty period supplier must ensure planned preventive maintenance (PPM) at least 3 nos. in a year along with corrective/breakdown maintenance whenever required.	
	<b>11 Installation, Inspections and Commissioning</b>	
11.1	Supplier must accomplish proper installation and commissioning of the equipment on site.	
11.2	Inspections to verify the compliance of the offered equipment as per the specifications	
	<b>12 Documentation</b>	
12.1	User (Operating) manual in English	
12.2	Service (Technical / Maintenance) manual in English	
12.3	List of important spare parts and accessories with their part numbers and costing.	
12.4	Log book with instruction for daily, weekly, monthly and quarterly maintenance checklist.	

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## Computed Radiography System (CR)

No.	Item Specifications	Fill your Specification
	<b>I Manufacturer Name:</b>	
	<b>II Model No.:</b>	
	<b>III Country of Origin:</b>	
	<b>1 Description of Function</b>	
	Used for processing of all standard medical x-ray and imaging films.	
	<b>2 Technical Specifications</b>	
	Computed Radiology (CR) must be a state of the art system	
	Adhering to following specifications. CR system should broadly comprise of following modules/ components:	
	a) Image recording system (cassettes & reading plates)	
	b) Image reading system (reader/ digitizer)	
	c) Identification & CR processing workstation.	
	d) Dry imager.	
	1. Image recording system (cassettes & imaging plates)	
	The following sizes of radiography cassettes along with image plates should be supported by the unit	
	a. 35 cm X 43 cm or 14" X 17" :4 nos.	
	b. 35 cm X 35 cm or 14" X 14" :2 nos.	
	c. 24 cm X 30 cm or 10" X 12" :4 nos.	
	d. 18 cm X 24 cm or 8" X 10" :2 nos.	
	2. Image reader (CR reader/ digitizer)	
	a) The CR reader / digitizer should be able to process 65 image plates/hr or more of the largest size cassette	
	b) CR reader / digitizer must be able to handle phosphor image plates. CR reader capable of handling latest Dual side /needle/structured/columnar image plates will be preferred.	
	c) It should have a resolution of 6 pixels/mm (minimum) for standard resolution cassettes & 10 pixel / mm (minimum) for high resolution cassette reading.	
	d) Digitizer must have a resolution of 20 pixel / mm (minimum) for screening mammography.	
	e) Gray scale resolution: CR reader / digitizer should have a minimum resolution of 12bits/ pixel for images sent to CR processing station.	
	3. Identification Station & processing server	
	a) The processing station must have 2GB RAM, at least 2x 500 GB HDD in RAID configuration and 21" clinical grade monitor. The PC hardware and monitors must be from reputed brands. The monitor should have a wide viewing angle and it should be clinical grade monitor with at least 1.3 MP resolution.	
	b) Processing server capable of identification of patient demographics to the acquired images will be preferred, else a separate identification station must be provided.	
	c) The server and/or ID station must be DICOM (DICOM modality worklist) compliant to access patient and study data from HIS or RIS.	
	d) It should provide display of acquired images with greater details of demographics viz. patient/ study listing for easy access	
	e) The server must provide full amount of post processing features viz. geometric corrections, window level algorithms, annotation like markers, predefined text, drawing lines and geometrical shapes, multi-scale image processing, measuring distance and angles, shuttering, histograms, zoom, grey scale reversal, edge enhancement, noise reduction, indication of gray scale saturation level, latitude reduction etc.	
	f) It should facilitate full fledged DICOM printing and should be able to print multiple formats of patient study.	
	g) Should be able to send DICOM images to DICOM workstation or PACS without loss of information	
	h) Should be equipped with DICOM CD writer for transferring image	
	i) Should be able to store image on external device viz. CD or pen drive etc.	
	j) The system should have a facility to indicate over specify the image preview time.	
	k) The software must have dedicated paediatric and mammography image processing.	
	4. Dry imager	
	a) The system must have a dry imager without need of any wet chemistry	
	b) It must be DICOM 3.0 compatible allowing multiple modalities to be connected at a time	
	c) The system must be able to print at least 60 films/ hr of the largest size	
	d) The system must deliver its first film within 80 seconds from the request sent	
	e) The imager must have spatial resolution of 500 ppi minimum	
	f) The system must have contrast resolution of 14 bits/pixel or more. The system must have at least three online film sizes and should be capable of printing any of the 8" X 10", 10" X 12", 11" X 14" or 14" X 17" films.	
	g) The imager should support daylight loading of films.	
	5. Suitable UPS back up must be provided for 15 minutes backup for the whole system	
	6. The firm should attach detailed installation list along with users' complete address and telephone number.	
	7. Additional speciality software /hardware if any should be quoted separately as optional.	
	<b>Power supply:</b>	
	Input power supply: 220/240 V AC , 50Hz single phase schuko plug	
	<b>Environmental factors</b>	
	The unit shall be capable of being stored continuously in ambient temperature of 0 -55deg C and relative humidity of 15-95%	
	The unit shall be capable of operating in ambient temperature of 20-50 deg C and relative humidity of 80%	
	<b>Standards &amp; Safety Requirements</b>	
	Should be CE or FDA approved product certificate.	
	<b>User Training</b>	
	Must provide operating and service trainings	
	<b>Warranty</b>	
	Comprehensive warranty for 2 years.	
	<b>Documentation</b>	
	User (Operatine) manual in English Should provide 2 sets(hardcopy and soft copy)	
	Service (Technical / Maintenance) manual in English Should provide 2 sets(hardcopy and soft copy)	
	List of important spare parts, accessories and consumables with their part numbers and costing.	

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## Dental Unit

No.	Item Specifications	Fill your Specification
	<b>I Manufacturer Name:</b>	
	<b>II Model No.:</b>	
	<b>III Country of Origin:</b>	
	<b>1 Description of Function</b>	
	1.1 A Dental chair for Dental treatment	
	<b>2 Operational Requirements</b>	
	2.1 It shall operate on AC power supply.	
	<b>3 System Configuration</b>	
	3.1 Dental Unit with complete attachments and accessories.	
	3.1 Patient chair, 1 unit	
	3.2 Working stool, 2 units	
	3.3 High speed hand piece, 2 units	
	3.4 Low speed motor with 1 straight hand piece & 1 contra-angle hand piece, 1 set	
	3.5 A built-in light cure unit	
	3.6 A built-in ultrasonic scaler with one each of pointed and flat scaler tips	
	3.7 One air compressor at least 1 horse power	
	3.8 One suction unit at least 1 horse power	
	3.9 One unit of automatic amalgamator	
	3.10 One set of amalgam carrier with tips and one amalgam well	
	3.11 One set of 4 pieces of amalgam condensers	
	3.12 One set of 5 pieces of amalgam carvers	
	3.13 One set of 5 pieces of burnishers	
	3.14 Bidder shall indicate brand and model information here and provide technical data document for major components specified above.	
	<b>4 Technical Specifications</b>	
	4.1 Patient type: adult & paediatric & deformity.	
	4.2 Main unit standard configuration as follow:	

4.3	<b>Patient chair:</b>	
4.4	With electrical chair movement and deluxe double articulated headrest.	
4.5	With one left armrest as standard.	
4.6	3 pre-set chair positions: start, treatment and rinsing position.	
4.7	Electrical patient chair loading capacity: not less than 1323N (135kg).	
4.8	Backrest movement range 105°-175°	
4.9	The lowest position of the patient chair from the ground shall not be less than 380mm.	
4.10	The highest position of the patient chair from the ground shall not be less than 780mm.	
4.11	Chair movement is controllable by the 4 way foot control at the chair base without touch panel.	
4.12	No cables on the floor, hygienic and clean.	
4.13	One main switch to control air, water and power.	
4.14	The chair position is locked while an instrument is working.	
4.15	With chair-backrest safety system, backrest and seat movement can be stopped once it meets obstacle.	
4.16	<b>Dentist element:</b>	
4.17	Dentist element with whip arm system.	
4.18	Height of dentist element is adjustable.	
4.19	1 X-ray film viewer (12V, 2000cd/m2).	
4.20	1 silicon mat for the dentist element which can be sterilized.	
4.21	1 three way syringe.	
4.22	3 ISO 4-hole/Midwest hand piece hoses.	
4.23	1 air pressure meter.	
4.24	<b>Assistant element:</b>	
4.25	1 three way syringe.	
4.26	1 strong suction hose.	
4.27	1 saliva ejector.	
4.28	With suction filter system.	
4.29	<b>Water unit:</b>	
4.30	The cuspidor can be swivelled and removable for easy cleaning.	
4.31	Cup filler and bowl rinsing systems shall prevent over filling of cup and prolong rinsing of bowl. Preferably programmable.	
4.32	With automatic water heating system (24V)	
4.33	With water venturi and air water separator system	
4.34	Fresh water bottle, at least 1 lt.	
4.35	<b>Operating light:</b>	
4.36	Colour temperature: 3800-4500K.	
4.37	12V, 50 Watt Halogen bulb or Better.	
4.38	Dental light intensity: min 25000lux with intensity dimming function.	
4.39	Working stool, 2 units.	
4.40	Mobile on 5 castors.	
4.41	Height of seat and backrest is adjustable.	
4.42	Backrest angle is adjustable and lockable.	
4.43	Come with NSK or equivalent high speed hand piece, 2 units.	
4.44	Come with NSK or equivalent low speed motor with 1 straight hand piece & 1 contra-angle hand piece, 1 set.	
4.45	Come with a built-in light cure unit.	
4.46	Come with a built-in ultrasonic scaler with one each of pointed and flat scaler tips.	
4.47	Come with one unit of automatic amalgamator.	
4.48	Come with one set of amalgam carrier with tips and one amalgam well.	
4.49	Bidder shall indicate brand and model/ part number information here and provide catalogue of each piece of item offered here.	
4.50	Come with one set of 4 pieces of amalgam condensers, one each of serrated small size, serrated big size, smooth small size & smooth big size.	
4.51	Bidder shall indicate brand and model/ part number information here and provide catalogue of each piece of item offered here.	
4.52	Come with one set of 5 pieces of amalgam carvers, double-ended, made of stainless steel, one size each from small, medium up to large size.	
4.53	Bidder shall indicate brand and model/ part number information here and provide catalogue of each piece of item offered here.	
4.54	Come with one set of 5 pieces of burnishers, double-ended, made of stainless steel, one size each of different type.	
4.55	Bidder shall indicate brand and model/ part number information here and provide catalogue of each piece of item offered here.	
4.56	Come with one air compressor at least 1 horse power or capacity sufficient to supply to the Dental chair specified above, whichever higher. Bidder shall indicate capacity of the unit offered here.	
4.57	Air compressor must be oil less & noise less.	
4.58	Come with one suction unit at least 1 horse power or capacity sufficient to supply to the Dental chair specified above, whichever higher. Bidder shall indicate capacity of the unit offered here.	
5	<b>Accessories, Spare Parts and Consumables</b>	
5.1	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer. Bidders must specify the quantity of every item included in their offer (including items not specified above).	
6	<b>Operating Environment</b>	
6.1	Power supply: 220 – 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metres in length.	
6.2	Environment:	
6.2.1	Temperature: 10-45 degree C	
6.2.2	Relative Humidity: not more than 98%	
6.3	Air supply pressure 0.55-0.80Mpa	
6.4	Water supply pressure 0.20-0.40Mpa	
7	<b>Standards &amp; Safety Requirements</b>	
7.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
7.2	CE (93/42 EEC Directives) or USFDA approved product certificate.	
7.3	Electrical safety conforms to standards for electrical safety IEC 60601.	
8	<b>User Training</b>	
8.1	The Supplier shall conduct user training for this equipment to enable operators to use the equipment properly. The training shall include the use of all operational functions of the equipment, as well as routine checks and maintenance expected by users.	
9	<b>Warranty</b>	
9.1	The warranty period for this item shall be 24 months after acceptance of the Goods	
10	<b>Maintenance Service During Warranty Period</b>	
10.1	Preventive and corrective maintenance services during warranty period shall be included.	
11	<b>Installation and Commissioning</b>	
11.1	The bidder must arrange for the equipment to be installed and commissioned by certified or qualified personnel; any prerequisites for installation to be communicated to the purchaser in advance, in detail.	
12	<b>Documentation</b>	
12.1	User (Operating) manual in English	
12.2	Service (Technical / Maintenance) manual in English	
12.3	List of important spare parts and accessories with their part number and costing.	

**62 High Speed Hand Piece**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Technical Specifications</b>	
1.1	NSK or equivalent high speed hand piece	
2	<b>Operating Environment</b>	
2.1	The unit shall be capable of operating in ambient temperature of 10°C-45°C and relative humidity of 10-95%	
2.2	The unit shall be capable of being stored continuously in ambient temperature of -20°C -60°C and relative humidity of 10-95%	
3	<b>Standards and Safety Requirements</b>	
3.1	Must submit ISO 9001 or ISO 13485:2003/AC: 2007 AND	
3.2	CE or USFDA or TUV approved product certificate.	
4	<b>Warranty</b>	
4.1	Comprehensive warranty for 2 years after acceptance.	
5	<b>Documentation</b>	
5.1	User (Operating) manual in English Should provide 2 sets(hardcopy and soft-copy)	

**63 ENT Diagnostic Set**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Technical Specifications</b>	
1.1	Auroscope head with 3 standard specula, Nasal speculum, Laryngeal stem to take tongue depressor, Laryngeal or post nasal mirror	
1.2	Antrum sheath.	
1.3	Large handle and two spare lamps.	
1.4	Head Mirror	
1.5	All to be supplied complete in plastic covered case.	
2	<b>Operating Environment</b>	
2.1	The product offered shall be designed to be stored and to operate normally under Climate, Temperature, Humidity, etc. for Sudan.	
3	<b>Standards and Safety Requirements</b>	
3.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
3.2	CE (93/42 EEC Directives) or USFDA approved product certificate.	
4	<b>User Training</b>	
4.1	Must provide user training (including how to use and maintain the equipment).	
5	<b>Warranty</b>	
5.1	Comprehensive warranty for 2 years after acceptance.	

**64 Trial Lens Set**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	

II	Model No.:	
III	Country of Origin:	
1	<b>Technical Specifications</b>	
	Full – aperture trial lenses 267 pieces of accurate power degrees perfect finish	
	Metal rim/handles – with power degrees engraved on both sides	
	Standard removable tray with labels	
	Dimensions: W 538 mm x L 338mm x H 35mm +/- 2mm	
	Standard Carrying Case of aluminum framework, aluminum cover	
	Dimensions: W 545mm x L 355mm x H 100mm +/- 2mm	
	Weight: 6-8 kg	
	FRAME:	
	Separate adult size and pediatrics size frame should be there	
	P.D. : One touch adjustment	
	P.D. : 48 – 60mm, movable about 20mm in each 10mm.	
	Axis of astigmatism : Provides each 5	
	Nose pad : Adjustable in width and height	
	Temple : In angle and length	
2	<b>Operating Environment</b>	
2.1	The unit shall be capable of operating in ambient temperature of 10°C-45°C and relative humidity of 10-95%	
2.2	The unit shall be capable of being stored continuously in ambient temperature of -20°C -60°C and relative humidity of 10-95%	
3	<b>Standards and Safety Requirements</b>	
3.1	Must submit ISO 9001 or ISO 13485:2003/AC: 2007 AND	
3.2	CE or USFDA or TUV approved product certificate.	
4	<b>Warranty</b>	
4.1	Comprehensive warranty for 2 years after acceptance.	
5	<b>Documentation</b>	
5.1	User (Operating) manual in English Should provide 2 sets(hardcopy and soft-copy)	

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## Ultrasound A-B Scan

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Technical Specifications</b>	
1.1	High resolution dedicated A and B, ophthalmic scanning unit B scan will cross vector.	
1.2	The system should consist of fourth generation microcomputer and high speed digital electronics, with highest resolution monitor.	
1.3	<b>Technical features:</b>	
1.4	<b>A-scan</b>	
1.5	Three a scan modes	
1.6	Auto biometric, manual biometric, diagnostic	
1.7	Complete IOL program capabilities include SRK1 SRK11 SRK. T Holladay or Binkhorest formulas.	
1.8	Save in memory capacity at least 45 cases for a-scan images and corresponding IOL data.	
1.9	10mhz solid probe	
1.1	The unit should incorporate, audio feed back for probe alignment.	
1.11	<b>B-scan</b>	
1.12	256 gray levels	
1.13	User definable, DGC curve	
1.14	Pre & post processing capabilities.	
1.15	Volume, distance and area/ perimeter measurement	
1.16	Selectable a-vector for simultaneous A/B display.	
1.17	Annotation/arrow placement	
1.18	Archiving of at least 150 patients in a single data file with an unlimited number of data files possible.	
1.19	Complete IOL calculation capability with IOL data storage.	
1.2	B-scan sector angle at least 55°	
1.21	<b>Standard accessories</b>	
1.22	Should include:	
1.23	Console with 7" display	
1.24	Alphanumeric keyboard	
1.25	Trackball	
1.26	Foot pedal	
1.27	7&10 MHz, A-B scan probe	
1.28	A scan calibration cylinder	
1.29	Probe holders etc	
1.3	Vendors may quote other accessories	
1.31	Standard accessories should include:	
1.32	Console with 7" display	
1.33	Alphanumeric key board	
1.34	Trackball	
1.35	Foot pedal	
1.36	100 & 12.5 MHz, A-B scan probe	
1.37	A scan calibration cylinder	
1.38	Probe holders etc	
2	<b>Accessories, spares and consumables</b>	
2.1	All standard accessories/consumables/parts required for the proper operation of the above item shall be included in the offer.	
3	<b>Operating Environment</b>	
3.1	The unit shall be capable of operating in ambient temperature of 10°C-45°C and relative humidity of 10-95%	
3.2	The unit shall be capable of being stored continuously in ambient temperature of -20°C -60°C and relative humidity of 10-95%	
4	<b>Power supply:</b>	
4.1	Input power supply: 220/240 V AC, 50Hz single phase schuko plug	
5	<b>Standards and Safety Requirements</b>	
5.1	Must submit ISO 9001 or ISO 13485:2003/AC: 2007 AND	
5.2	CE or USFDA or TUV approved product certificate.	
6	<b>Training</b>	
6.1	Must provide user & service training.	
7	<b>Warranty</b>	
7.1	Comprehensive warranty for 2 years after acceptance.	
8	<b>Maintenance Service During Warranty Period</b>	
8.1	Supplier must ensure planned preventive maintenance (PPM) along with corrective/breakdown maintenance whenever required.	
9	<b>Documentation</b>	
9.1	User (Operating) manual in English Should provide 2 sets(hardcopy and soft-copy)	
9.2	Service (Technical / Maintenance) manual in English Should provide 2 sets (hardcopy and soft-copy)	
9.3	List of important spare parts, accessories and consumables with their part numbers and costing.	

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## Ophthalmology Surgical Microscope

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Technical Specifications</b>	
1.1	Versatile surgical microscope of international repute suitable for all Ophthalmic Surgeries.	
1.2	Microscope body with motorized zoom magnification system with apochromatic optics and anti-reflection multi-coating.	
1.3	Zoom, factor range: 0.4x, 2.4x, motorized fine objective lens focal length 200mm	
1.4	Stereo coaxial illumination for unique detail recognition	
1.5	High contrast & stability of Red reflex even with strongly illuminated decentered and ametropic eye.	
1.6	Focusing with range 50mm or more; manual front-to-back tilt facility with range of 180 degrees with the facility of image inverting for VR surgery.	
1.7	Motorized x-y coupling with range of 40mm X 40mm or more.	
1.8	Key for resetting to initial position of x-y coupling and focus	
1.9	Automatic depth of focus management by press of a button.	
1.1	Independent integrated binocular assistant microscope with 5-step magnification changer and focusing it should be without beam splitter with independent optics.	
1.11	Full retinal protection device & integrated handgrips pair of high eye point wide push-in (magnetic) eyepieces 10x, 12.5x, field of view Diameter 15-50mm or more.	
1.12	Diopter setting from -8D to +5D or better, also suitable for spectacles wearers.	
1.13	Waterproof foot control panel with 24 functions and 3.0m cable for control of at least on/off and intensity control, zoom fine focusing, x-y movements.	
1.14	High quality programmable floor stand with large swivel arm magnetic breaks and clutches for easy positioning through handles and suspension arm.	
1.15	Load carrying capacity at least 20 Kg or more.	
1.16	Stand should have integrated power supply for all motorized functions with display and programmable facility for speeds of zoom, focus, x-y movements and setting of intensity.	
1.17	Stand should be rust free & have integrated dual illumination system 180 W Xenon superlux with backup Xenon & 2nd illumination system 12V 100W Halogen with Backup Halogen.	
1.18	Cold light fiber Optic with dual o/p port for Stereo coaxial illumination system (SCI).	
1.19	It should have separate fiber cable Xenon & Halogen illumination with manual change over.	
1.2	<b>OPTIONAL ACCESSORIES:</b> 3 CCD Digital Camera attachment with colour television & video recording system; video objective lens, C-mount adaptor, Beam splitter 80:20 & BIOM with two lenses for VR Surgery.	
1.21	It should be USFDA or European CE approved.	
2	<b>Accessories, spares and consumables</b>	
2.1	All standard accessories/consumables/parts required for the proper operation of the above item shall be included in the offer.	
3	<b>Operating Environment</b>	
3.1	The unit shall be capable of operating in ambient temperature of 10°C-45°C and relative humidity of 10-95%	
3.2	The unit shall be capable of being stored continuously in ambient temperature of -20°C -60°C and relative humidity of 10-95%	
4	<b>Power supply:</b>	
4.1	Input power supply: 220/240 V AC, 50Hz single phase schuko plug	

5	<b>Standards and Safety Requirements</b>	
5.1	Must submit ISO 9001 or ISO 13485:2003/AC: 2007 AND	
5.2	CE or USFDA or TUV approved product certificate.	
6	<b>Training</b>	
6.1	Must provide user & service training.	
7	<b>Warranty</b>	
7.1	Comprehensive warranty for 2 years after acceptance.	
8	<b>Maintenance Service During Warranty Period</b>	
8.1	Supplier must ensure planned preventive maintenance (PPM) along with corrective/breakdown maintenance whenever required.	
9	<b>Documentation</b>	
9.1	User (Operating) manual in English Should provide 2 sets(hardcopy and soft-copy)	
9.2	Service (Technical / Maintenance) manual in English Should provide 2 sets (hardcopy and soft-copy)	
9.3	List of important spare parts, accessories and consumables with their part numbers and costing.	

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Phaco Machine		
No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Technical Specifications</b>	
	<b>Fluidics System</b>	
	Peristaltic pump	
	Gravity infusion, electric I/V pole	
	Tubing system with integrated, closed pressure sensor	
	Auto Venting	
	Restrictable reflux	
	<b>Control</b>	
	Control panel with glass covering, luminous display and silicon keys	
	Dual linear multifunctional pedal	
	Wireless remote control	
	Individual programming with ParaProg for up to 50 surgeons	
	Self-testing function and preop function	
	Audio signals	
	<b>I/A Function</b>	
	3 program memories with DirectAccess	
	Vacuum override function	
	Continuous irrigation	
	<b>Phaco Function</b>	
	3 program memories with DirectAccess	
	Ultrasound phaco with auto tuning	
	Hexadisk handpiece with 6 piezo plates	
	Linear, PULSE, CMP, BURST and panel mode	
	Occlusion mode	
	Easy Phaco, CO-MICS and MICS technique	
	Dual linear phaco	
	Override function	
	<b>Anterior Segment Vitrectomy</b>	
	3 program memories with Direct Access	
	Electrically driven SUS guillotine cutter	
	20G, 23G	
	Linear 30 to 1200 cuts/min	
	Individual cuts	
	Dual linear or linear pedal control	
	Irrigation/aspiration/cut	
	Irrigation/cut/aspiration	
	<b>Bipolar Functions</b>	
	Endo-diathermy	
	Macro-diathermy	
	Conjunctival coaptation	
	Instant diathermy function	
	RF capsulotomy	
	STT glaucoma sclerotherapy	
	10K glaucoma intrastromal diathermal keratotomy	
	<b>ACCESSORIES REQUIRED</b>	
	2 PHACO HANDPIECES AND 4 TUBINGS	
	5 PHACO TIPS AND 10 SLEEVES	
	2 I/A HANDPIECES AND 5 SLEEVES	
	<b>2 Accessories, spares and consumables</b>	
	2.1 All standard accessories/consumables/parts required for the proper operation of the above item shall be included in the offer.	
	<b>3 Operating Environment</b>	
	3.1 The unit shall be capable of operating in ambient temperature of 10°C-45°C and relative humidity of 10-95%	
	3.2 The unit shall be capable of being stored continuously in ambient temperature of -20°C -60°C and relative humidity of 10-95%	
	<b>4 Power supply:</b>	
	4.1 Input power supply: 220/240 V AC, 50Hz single phase schuko plug	
	<b>5 Standards and Safety Requirements</b>	
	5.1 Must submit ISO 9001 or ISO 13485:2003/AC: 2007 AND	
	5.2 CE or USFDA or TUV approved product certificate.	
	<b>6 Training</b>	
	6.1 Must provide user & service training.	
	<b>7 Warranty</b>	
	7.1 Comprehensive warranty for 2 years after acceptance.	
	<b>8 Maintenance Service During Warranty Period</b>	
	8.1 Supplier must ensure planned preventive maintenance (PPM) along with corrective/breakdown maintenance whenever required.	
	<b>9 Documentation</b>	
	9.1 User (Operating) manual in English Should provide 2 sets(hardcopy and soft-copy)	
	9.2 Service (Technical / Maintenance) manual in English Should provide 2 sets (hardcopy and soft-copy)	
	9.3 List of important spare parts, accessories and consumables with their part numbers and costing.	

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Autorefractometer		
No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Description of Function</b>	
1.1	Measuring instruments used to determine the ratio of the velocity of light in a vacuum to the velocity of light in another medium (i.e., index of refraction).	
2	<b>Technical Specifications</b>	
2.1	Should have in the system.	
2.2	Should have refractive measurement sphere from -25 to +22D in steps of 0.25D.	
2.3	Should have refractive measurement cylinder from -10 to +10D in steps of 0.25D.	
2.4	Should have refractive measurement axis angle from 1 to 180° in steps of 1°.	
2.5	Should have at least 0, 12 and 13.5 vertex distance.	
2.6	Should measure a minimum pupil diameter of 2.5mm.	
2.7	Should have at least 5 inches LCD/LED display.	
2.8	Should have vertically adjustable chin rest of at least ±25mm.	
2.9	Should have motorized table.	
3	<b>Accessories, spares and consumables</b>	
3.1	All standard accessories/consumables/parts required for the proper operation of the above item shall be included in the offer.	
4	<b>Operating Environment</b>	
4.1	The unit shall be capable of operating in ambient temperature of 10°C-45°C and relative humidity of 10-95%	
4.2	The unit shall be capable of being stored continuously in ambient temperature of -20°C -60°C and relative humidity of 10-95%	
5	<b>Power supply:</b>	
5.1	Input power supply: 220/240 V AC, 50Hz single phase schuko plug	
6	<b>Standards and Safety Requirements</b>	
6.1	Must submit ISO 9001 or ISO 13485:2003/AC: 2007 AND	
6.2	CE or USFDA or TUV approved product certificate.	
7	<b>Training</b>	
7.1	Must provide user & service training.	
8	<b>Warranty</b>	
8.1	Comprehensive warranty for 2 years after acceptance.	
9	<b>Maintenance Service During Warranty Period</b>	
9.1	Supplier must ensure planned preventive maintenance (PPM) along with corrective/breakdown maintenance whenever required.	
10	<b>Documentation</b>	
10.1	User (Operating) manual in English Should provide 2 sets(hardcopy and soft-copy)	
10.2	Service (Technical / Maintenance) manual in English Should provide 2 sets (hardcopy and soft-copy)	
10.3	List of important spare parts, accessories and consumables with their part numbers and costing.	

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Argon Laser		
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No.	Item Specifications	Fill your Specification
I	Manufacturer Name:	
II	Model No.:	
III	Country of Origin:	
1	Description of Function	
1.1	Nd:YAG frequency-doubled lasers, usually operated in pulsed modes, used to coagulate abnormal vascular tissue in the retina and other photocoagulation procedures in the eye. They are typically coupled to a bio microscope slit lamp or an indirect ophthalmoscope.	
2	Technical Specifications	
2.1	BEAM CHARACTERISTICS:	
2.1	Should have treatment laser type Argon, Dye, Krypton, and Frequency-Doubled Nd: YAG.	
2.2	Principal wavelengths shall be 530-540 nm.	
2.3	Delivered power of different lasers shall be as:	
i.	Argon blue-green 3 W,	
ii.	Argon green 1 W,	
iii.	Dye 1 W,	
iv.	Krypton green 1.5 W,	
v.	Krypton yellow 1.5 W,	
vi.	Krypton red 1 W,	
vii.	Nd: YAG 1 W.	
2.4	Delivery Mode - Single, repeat.	
2.5	The amount of time the patient is exposed to activated laser energy shall be 0.01-2 Sec.	
2.6	Repeat time shall be 0.1-2 Sec.	
2.7	Spot diameter @ retina shall be 50-1,000µm	
AIMING BEAM:		
2.8	1. Wavelength shall be 630 nm	
2.9	2. Power shall be <1 mW.	
2.1	DELIVERY SYSTEM TYPE:	
1	Slit lamp is required.	
2	Intraocular probe is required.	
3	Hand piece(s) is required.	
Accessories:		
Dust covers- 1		
Allen Key - 1 set		
Iridotomy and capsulotomy lens.(2 each)		
Appropriate UPS backup		
spare bulb - 2 Nos		
Should be supplied with motorized table		
Should provide protective goggles to be exclusive for ND-Yag Laser		
3	Accessories, spares and consumables	
3.1	All standard accessories/consumables/parts required for the proper operation of the above item shall be included in the offer.	
4	Operating Environment	
4.1	The unit shall be capable of operating in ambient temperature of 10°C-45°C and relative humidity of 10-95%	
4.2	The unit shall be capable of being stored continuously in ambient temperature of -20°C -60°C and relative humidity of 10-95%	
5	Power supply:	
5.1	Input power supply: 220/240 V AC , 50Hz single phase schuko plug	
6	Standards and Safety Requirements	
6.1	Must submit ISO 9001 or ISO 13485:2003/AC: 2007 AND	
6.2	CE or USFDA or TUV approved product certificate.	
7	Training	
7.1	Must provide user & service training.	
8	Warranty	
8.1	Comprehensive warranty for 2 years after acceptance.	
9	Maintenance Service During Warranty Period	
9.1	Supplier must ensure planned preventive maintenance (PPM) along with corrective/breakdown maintenance whenever required.	
10	Documentation	
10.1	User (Operative) manual in English Should provide 2 sets(hardcopy and soft-copy)	
10.2	Service (Technical / Maintenance) manual in English Should provide 2 sets (hardcopy and soft-copy)	
10.3	List of important spare parts, accessories and consumables with their part numbers and costing.	

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## YAG Laser

No.	Item Specifications	Fill your Specification
I	Manufacturer Name:	
II	Model No.:	
III	Country of Origin:	
1	Description of Function	
1.1	Neodymium-doped yttrium-aluminum-garnet (Nd:YAG) lasers, usually Q-switched, used to cause a photo disruptive effect in the eye (e.g., posterior capsulotomy), forming a plasma and generating immense localized mechanical shock waves (micro explosions) that, when highly focused, can destroy tissue. These lasers have built-in slit-lamp bio microscopes or are coupled to a slit-lamp or indirect ophthalmoscope by fixed mirrors.	
2	Technical Specifications	
2.1	BEAM CHARACTERISTICS:	
i.	Operating mode: Q-switched	
ii.	Mode structure: Fundamental	
iii.	Energy range: Single pulse, 0.3-10mj	
iv.	Pulse width shall be 4 n sec	
v.	Burst shall be 1-3 pulses/burst	
vi.	Repetition rate	
a.	Single pulse shall be 1-2 Hz	
b.	Burst shall be 1 Hz.	
vii.	Spot size shall be 10 µm	
viii.	Cone angle shall be 16 deg.	
2.2	AIMING BEAM:	
i.	Type: Dual Laser	
ii.	It should have variable intensity	
2.3	COMPATIBLE SLIT LAMP	
i.	Magnification shall be ≤25x	
ii.	Working distance shall be 100 mm	
2.4	DISPLAYS/CONTROLS	
i.	Selected energy is required	
ii.	Shot selection is required	
iii.	Power output is required	
iv.	Shot counter is required	
2.5	Calibration method shall be automatic.	
2.6	COOLING REQUIREMENTS: Air	
2.7	Accessories:	
i.	Contact lens	
ii.	TV, 35 mm adapter	
iii.	Head restraint	
iv.	Tonometer	
v.	Dust covers- 1	
vi.	Allen Key - 3 set	
vii.	Spare bulb - 2 Nos	
3	Accessories, spares and consumables	
3.1	All standard accessories/consumables/parts required for the proper operation of the above item shall be included in the offer.	
4	Operating Environment	
4.1	The unit shall be capable of operating in ambient temperature of 10°C-45°C and relative humidity of 10-95%	
4.2	The unit shall be capable of being stored continuously in ambient temperature of -20°C -60°C and relative humidity of 10-95%	
5	Power supply:	
5.1	Input power supply: 220/240 V AC , 50Hz single phase schuko plug	
6	Standards and Safety Requirements	
6.1	Must submit ISO 9001 or ISO 13485:2003/AC: 2007 AND	
6.2	CE or USFDA or TUV approved product certificate.	
7	Training	
7.1	Must provide user & service training.	
8	Warranty	
8.1	Comprehensive warranty for 2 years after acceptance.	
9	Maintenance Service During Warranty Period	
9.1	Supplier must ensure planned preventive maintenance (PPM) along with corrective/breakdown maintenance whenever required.	
10	Documentation	
10.1	User (Operative) manual in English Should provide 2 sets(hardcopy and soft-copy)	
10.2	Service (Technical / Maintenance) manual in English Should provide 2 sets (hardcopy and soft-copy)	
10.3	List of important spare parts, accessories and consumables with their part numbers and costing.	

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## Ophthalmic Perimeter

No.	Item Specifications	Fill your Specification
I	Manufacturer Name:	
II	Model No.:	
III	Country of Origin:	

<b>1 Technical Specifications</b>	
Maximum temporal range of degrees) , with moving fixation point	
Stimulus duration 0.1 up to 9 second	
Visual field testing distance up to 30 cm	
Different Background illumination LED (green ,white , red )	
<b>Threshold test library:</b>	
different testina: 24-2, 30-2, 10-2, Macula	
60-4, Nasal step	
<b>Suprathreshold test library :</b>	
C40, C76, C80,C64, C-Armaly ,Peripheral test patterns	
<b>Suprathreshold test modes :</b>	
Age corrected,threshold related, Single intensity	
Specialty test library	
Social Security Disability, monocular, binocular	
Esternan monocular, binocular, superior 36, 64 .	
Kinetic testing ,can be auto	
Custom Kinetic testing,Custom Static testing test editor	
Fixation control	
Heiil-Krakau blind spot monitor.	
Video eye monitor.	
Gaze / Head tracking.	
Vertex monitoring.	
<b>Stimulus</b>	
White-on-white	
Red- or blue-on-white	
Blue-on-yellow (SWAP)	
General testing features	
Stimulus sizes : 1 up V	
Foveal threshold testing	
Automatic pupil measurement	
<b>Liquid Trial Lens (AutoTLC).</b>	
Ret EYE eye review	
Software features	
Single Field Analysis (SFA), Glaucoma Hemifield Test (GHT)	
Visual Field Index (VFI), Guided Progression Analysis (GPA)	
Serial field overview,Networking, DICOM Connectivity	
Data storage, retrieval and analysis	
Hard drive : USB ,CD-R/W drive ,printer to be compatible with windows user defined test storage	
Operator interface	
Display LCD, touch screen ,Keyboard	
<b>2 Electrical requirements</b>	
Power supply: 220 – 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metre in length. Suitable UPS	
Operation Manual	
<b>3 Standards</b>	
Meets UL, CSA and CE standards	
Dust cover	
Power supply: 220 – 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metre in length. Suitable UPS	
Suitable UPS with maintenance free batteries, voltage regulation and spike protection for minimum 30 min. back-up shall be supplied with the system.	
All Customer Calibration Tools & Special Calibration tools must be included in the offered price and their cost must be stated in details in a separate file	
warranty:2years	
<b>4 Documentation</b>	
User (Operating) manual in English Should provide 2 sets(hardcopy and soft-copy)	
Service (Technical / Maintenance) manual in English Should provide 2 sets(hardcopy and soft-copy)	
List of important spare parts, accessories and consumables with their part numbers and costing.	

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**Optical Coherence Tomography**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Description of Function</b>	
1.1	Optical coherence tomography (OCT) is an interferometry, non-invasive optical tomographic imaging technique offering millimetre penetration (approximately 2-3 mm in tissue) with micrometre scale axial and lateral resolution.	
2	<b>Operational Requirements</b>	
2.1	OCT machine automatically scans both eyes and produces simultaneously an OCT scan & red free images.	
3	<b>System Configuration</b>	
3.1	Optical Coherence Tomography, complete unit with all standard accessories.	
4	<b>Technical Specifications</b>	
4.1	<b>Tomography Imaging:</b>	
	B Cross sectional imaging of fundus.	
	B Signal type: Optical scattering from tissue.	
	B Signal source: Super luminescent Diode, 820 nm.	
	B Optical power: 750 microwatts at cornea.	
	B Longitude/Axial Resolution: 20 µm in tissue.	
	B Sample size: 2mm heavily calcified tissue.	
	B Scanners: Galvanometric mirrors.	
	B Scan patterns: Line, Circle, Concentric Rings, Radial lines.	
	B Scan pixels: Adjustable from (1024 axial x 128 transverse) to (1024 axial x 768 transverse).	
	B Longitudinal (Depth) range: 2 mm in tissue.	
	B Scan rate: 2.5 msec / A-scan	
	B Norm ative database: RNFL (Retinal Nerve Fibre Layer) and Macular thickness.	
4.2	<b>Fundus Alignment, Documentation:</b>	
	B Signal type: CCD im age.	
	B Field of view: 290 x 230.	
	B Viewing method: Flat panel display.	
	B Illumination: Near IR / Red free.	
	B Internal fixation: 32 x 16 LED Dot Matrix.	
	B External fixation: Sin lamp type adjustable blinking LED.	
	B Minimum pupil diameter: 3.2 mm.	
	B Power consumption: 700VA.	
	B Footprint: 120 x 85cm - 48inches x 34inches	
4.3	PC workstation with Core i5 CPU with laser printer (colour), 300 GB HDD, DVD Read/Write, Image capture card and software loaded for digitization of images, 2GB RAM and interfaces to RVG and Intraoral digitization.	
5	<b>Accessories, spares and consumables</b>	
5.1	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer.	
6	<b>Operating Environment</b>	
6.1	The product offered shall be designed to be stored and to operate normally under Power Supply, Climate, Temperature, Humidity, etc. for Sudan.	
6.2	Power supply: 220 – 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metre in length.	
6.3	Suitable UPS with maintenance free batteries, voltage regulation and spike protection for minimum 30 min. back-up shall be supplied with the system.	
7	<b>Standards and Safety Requirements</b>	
7.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
7.2	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
7.3	Electrical safety conforms to standards for electrical safety IEC 60601-1 General requirement for Electrical safety of Medical Equipment.	
8	<b>User Training</b>	
8.1	Must provide user training (including how to use and maintain the equipment).	
9	<b>Warranty</b>	
9.1	Comprehensive warranty for 2 years.	
10	<b>Maintenance Service During Warranty Period</b>	
10.1	During warranty period supplier must ensure corrective/breakdown maintenance whenever required.	
11	<b>Documentation</b>	
11.1	User (Operating) manual in English.	
11.2	Service (Technical / Maintenance) manual in English.	
11.3	List of important spare parts and accessories with their part numbers and costing.	

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**Synoptophore**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Technical Specifications</b>	
1.1	<b>Movement of Optical Tubes:</b>	
1.1.1	Horizontal: Adduction + 50 degree, Abduction-40 degree	
1.1.2	Vertical: Hyper 30 degree, Hypo 30 degree	
1.1.3	Torsional : Incyclo 20 degree, Excyclo 20 degree	
1.2	<b>Slide Illumination:</b>	
1.2.1	By rheostat controlled 6v Lamp for each slide. After Image Illumination by 12v Lamp	
1.3	<b>Auto Flashing:</b>	
1.3.1	Auto flashing of slide illumination either simultaneously or alternatively in rapid and variable models.	

1.7	<b>Mode &amp; Mode Selection:</b> Five Modes of slide illumination namely Normal, Flashing Right, Flashing R+L & Flashing, can be selected	
1.8	<b>Haidinger Brush:</b> One Haidinger brush attachment along with rheostat for speed control and switch for direction reversal.	
1.9	<b>Dimensions:</b> Longitudinal : 40-55cm Lateral : 30-40cm Vertical : 30-50cm Weight : 10-15kg	
1.1	<b>Standard Accessories:</b> A set of slides containing 9 pairs	
1.11	<b>Accessories:</b> One power cord One dust Cover Spare 6V Bulbs (2 Nos) & 12v Bulbs (2 Nos.)	
2	<b>Accessories, spares and consumables</b>	
2.1	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer.	
3	<b>Operating Environment</b>	
3.1	The product offered shall be designed to be stored and to operate normally under Power Supply, Climate, Temperature, Humidity, etc. for Sudan.	
3.2	Power supply: 220 – 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metre in length.	
3.3	Suitable UPS with maintenance free batteries, voltage regulation and spike protection for minimum 30 min. back-up shall be supplied with the system.	
4	<b>Standards and Safety Requirements</b>	
4.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
4.2	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
4.3	Electrical safety conforms to standards for electrical safety IEC 60601-1 General requirement for Electrical safety of Medical Equipment.	
5	<b>User Training</b>	
5.1	Must provide user training (including how to use and maintain the equipment).	
6	<b>Warranty</b>	
6.1	Comprehensive warranty for 2 years.	
7	<b>Maintenance Service During Warranty Period</b>	
7.1	During warranty period supplier must ensure corrective/breakdown maintenance whenever required.	
8	<b>Documentation</b>	
8.1	User (Operating) manual in English.	
8.2	Service (Technical / Maintenance) manual in English.	
8.3	List of important spare parts and accessories with their part numbers and costing.	

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## Vision Chart

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Description of Function</b> It is the latest technology in Visual Acuity testing with multiple other features for vision assessment in a single chart	
	<b>Technical Specifications</b>	
	B Distance configuration - 2, 3, 6 meters (direct) or 2, 3, 6 meters (reverse)	
	B With Contrast chart, LOGMAR chart	
	B Wall mountable	
	B Language charts in all major languages	
	B Optometry tests - Landolt Ring, Numeral, Alphabet, Tumbling E, Pictures, Dots	
	B Visual test for Red/Green, Astigmatism, Heterophoria, Stereoscopic, Aniseikonia, Binocular Vision	
	B Should operate on 230V direct supply and external AA battery.	
	<b>Accessories</b>	
	1. Wall mountable clamp, 2. Remote control, 3. Chair mountable clamp	
5	<b>Accessories, spares and consumables</b>	
5.1	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer.	
6	<b>Operating Environment</b>	
6.1	The product offered shall be designed to be stored and to operate normally under Power Supply, Climate, Temperature, Humidity, etc. for Sudan.	
6.2	Power supply: 220 – 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metre in length.	
6.3	Suitable UPS with maintenance free batteries, voltage regulation and spike protection for minimum 30 min. back-up shall be supplied with the system.	
7	<b>Standards and Safety Requirements</b>	
7.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
7.2	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
8	<b>User Training</b>	
8.1	Must provide user training (including how to use and maintain the equipment).	
9	<b>Warranty</b>	
9.1	Comprehensive warranty for 2 years.	
10	<b>Maintenance Service During Warranty Period</b>	
10.1	During warranty period supplier must ensure corrective/breakdown maintenance whenever required.	
11	<b>Documentation</b>	
11.1	User (Operating) manual in English.	
11.2	Service (Technical / Maintenance) manual in English.	
11.3	List of important spare parts and accessories with their part numbers and costing.	

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## Lensometer

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Technical Specifications</b> Auto - mono and multi focal detection ,LCD touch panel	
	<b>Measurement Ranges:</b>	
	Sphere Power +/- 25 D.	
	Cylinder Power +/- 10 D.	
	Axis 0 to 180°.	
	ADD 0 to 10 D.	
	Prism 0 to 10 D.	
	Measurement Mode	
	Measuremen Cylinder : + / - / -	
	Prism : Rectangular Coordinates / x-y / P-B	
	Lens detection :	
	Auto for single and progressive lenses	
	contact Lens measurmnt	
	hard /soft contact lense	
	light source	
	green led refractive measurement / UV LED UV mrasurment	
	Screen	
	color touch screen	
	PD measurement	
	50 up to 90 mm	
	Printer and external interface	
	Thermal printer Type ,and LAN to be included	
	Dust cover	
2	<b>Accessories, spares and consumables</b>	
2.1	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer.	
3	<b>Operating Environment</b>	
3.1	The product offered shall be designed to be stored and to operate normally under Power Supply, Climate, Temperature, Humidity, etc. for Sudan.	
3.2	Power supply: 220 – 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metre in length.	
3.3	Suitable UPS with maintenance free batteries, voltage regulation and spike protection for minimum 30 min. back-up shall be supplied with the system.	
4	<b>Standards and Safety Requirements</b>	
4.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
4.2	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
5	<b>User Training</b>	
5.1	Must provide user training (including how to use and maintain the equipment).	
6	<b>Warranty</b>	
6.1	Comprehensive warranty for 2 years.	
7	<b>Maintenance Service During Warranty Period</b>	
7.1	During warranty period supplier must ensure corrective/breakdown maintenance whenever required.	
8	<b>Documentation</b>	
8.1	User (Operating) manual in English.	
8.2	Service (Technical / Maintenance) manual in English.	
8.3	List of important spare parts and accessories with their part numbers and costing.	

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## Endo Laser

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	

III	<b>Country of Origin:</b>	
1	<b>Technical Specifications</b>	
	Yag laser source : wave length : 532nm	
	Power in tissue up to 1200mW	
	Pulse duration 20ms to continuous	
	Foot switch, foot cover	
	Delivery system : Ophthalmoscope adapter (tress type,leica type), slit lamp adapter,laser indirect ophthalmoscopes,	
	Laser probes straight,curved,flexible,curved ,steerable	
2	<b>Accessories, spares and consumables</b>	
2.1	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer.	
3	<b>Operating Environment</b>	
3.1	The product offered shall be designed to be stored and to operate normally under Power Supply, Climate, Temperature, Humidity, etc. for Sudan.	
3.2	Power supply: 220 – 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metre in length.	
3.3	Suitable UPS with maintenance free batteries, voltage regulation and spike protection for minimum 30 min. back-up shall be supplied with the system.	
4	<b>Standards and Safety Requirements</b>	
4.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
4.2	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
5	<b>User Training</b>	
5.1	Must provide user training (including how to use and maintain the equipment).	
6	<b>Warranty</b>	
6.1	Comprehensive warranty for 2 years.	
7	<b>Maintenance Service During Warranty Period</b>	
7.1	During warranty period supplier must ensure corrective/breakdown maintenance whenever required.	
8	<b>Documentation</b>	
8.1	User (Operating) manual in English.	
8.2	Service (Technical / Maintenance) manual in English.	
8.3	List of important spare parts and accessories with their part numbers and costing.	

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## Corneal Topography machine

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Technical Specifications</b>	
	Keratometer cone 24 rings equally distributed on a 430 sphere	
	Analysed points Over 100,000	
	Measured points Over 6,200	
	Corneal coverage Up to 9.8mm on a sphere of radius 8,00mm (42.2 dioptries with N=1.3375)	
	Diopeter power range 1D to 120DFrom	
	Resolution +/- 0.01D, 1 micron	
	Accuracy / Precision axial radius +/- 0.03mm altimetric data +/- 2um at 4mm	
	Capture system Auto-focus with auto-capture	
	Output ports USB, LAN	
	Monitor LCD 10.1 inch capacitive touch screen	
	Database Internal	
	Pupillometry Dynamic, Photopic, Mesopic, Scotopic	
	Fluorescein Image & video	
	Report Corneal map, comparison map, contact lens, height map,	
	Zernike analysis, pupillometry, toric IOL screenshot,	
	Meibomian glands, Tear film break up time	
2	<b>Accessories, spares and consumables</b>	
2.1	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer.	
3	<b>Operating Environment</b>	
3.1	The product offered shall be designed to be stored and to operate normally under Power Supply, Climate, Temperature, Humidity, etc. for Sudan.	
3.2	Power supply: 220 – 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metre in length.	
3.3	Suitable UPS with maintenance free batteries, voltage regulation and spike protection for minimum 30 min. back-up shall be supplied with the system.	
4	<b>Standards and Safety Requirements</b>	
4.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
4.2	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
5	<b>User Training</b>	
5.1	Must provide user training (including how to use and maintain the equipment).	
6	<b>Warranty</b>	
6.1	Comprehensive warranty for 2 years.	
7	<b>Maintenance Service During Warranty Period</b>	
7.1	During warranty period supplier must ensure corrective/breakdown maintenance whenever required.	
8	<b>Documentation</b>	
8.1	User (Operatng) manual in English.	
8.2	Service (Technical / Maintenance) manual in English.	
8.3	List of important spare parts and accessories with their part numbers and costing.	

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## Cross Linking Machine

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Technical Specifications</b>	
	UV light Source LED UV-A range.	
	High level of safety, come with one or more diod and special optics and to avoid the hot spots and the endothelium protected	
	flexibility, can chose between 3 or more energy levels	
	can be portable with a table mount	
	Working distance up 54 mm.	
	System for collimation with special focus on effectiveness	
	Tele camera integrated 1/4" camera.	
	W / Monitor Display.	
2	<b>Accessories, spares and consumables</b>	
2.1	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer.	
3	<b>Operating Environment</b>	
3.1	The product offered shall be designed to be stored and to operate normally under Power Supply, Climate, Temperature, Humidity, etc. for Sudan.	
3.2	Power supply: 220 – 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metre in length.	
3.3	Suitable UPS with maintenance free batteries, voltage regulation and spike protection for minimum 30 min. back-up shall be supplied with the system.	
4	<b>Standards and Safety Requirements</b>	
4.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
4.2	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
5	<b>User Training</b>	
5.1	Must provide user training (including how to use and maintain the equipment).	
6	<b>Warranty</b>	
6.1	Comprehensive warranty for 2 years.	
7	<b>Maintenance Service During Warranty Period</b>	
7.1	During warranty period supplier must ensure corrective/breakdown maintenance whenever required.	
8	<b>Documentation</b>	
8.1	User (Operatng) manual in English.	
8.2	Service (Technical / Maintenance) manual in English.	
8.3	List of important spare parts and accessories with their part numbers and costing.	

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## Cryo System

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Operational Requirement:</b>	
	Useful for cataract, retinal detachment, glaucoma and intravitreal surgery	
2	<b>Technical Specification:</b>	
	B Completely non-electric, portable for Gas N <sub>2</sub> O	
	B Foot controlled	
	B Instant defrosting	
	B Quick freezing and quick defrosting	
	B Autom atic Probes cleaning	
	Cryo Probes:	
	Probes to be provided	
	Cataract (-40°C), Retinal (-80°C), Glaucoma(-80°C), Intravitreal (-20°C)	
3	<b>Accessories, spares and consumables</b>	
3.1	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer.	
4	<b>Standards and Safety Requirements</b>	
4.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
4.2	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	

5	<b>User Training</b>	
5.1	Must provide user training (including how to use and maintain the equipment).	
6	<b>Warranty</b>	
6.1	Comprehensive warranty for 2 years.	
7	<b>Maintenance Service During Warranty Period</b>	
7.1	During warranty period supplier must ensure corrective/breakdown maintenance whenever required.	
8	<b>Documentation</b>	
8.1	User (Operating) manual in English.	
8.2	Service (Technical / Maintenance) manual in English.	
8.3	List of important spare parts and accessories with their part numbers and costing.	

**80 Diathermy for Ophthalmic Surgery**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Technical Specification:</b>	
	B Output power : 5 W or more.	
	B Should have output power indicator.	
	B Should have 7-segment LED or LCD display.	
	B O/b level : 0 to 9 positions	
	B Input supply : *110-230 V, 50 Hz	
2	<b>Standard Accessories</b>	
	1. Silicone bipolar cord	
	2. Standard tenzel bipolar forceps	
	3. Foot switch	
3	<b>Accessories, spares and consumables</b>	
3.1	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer.	
4	<b>Standards and Safety Requirements</b>	
4.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
4.2	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
5	<b>User Training</b>	
5.1	Must provide user training (including how to use and maintain the equipment).	
6	<b>Warranty</b>	
6.1	Comprehensive warranty for 2 years.	
7	<b>Maintenance Service During Warranty Period</b>	
7.1	During warranty period supplier must ensure corrective/breakdown maintenance whenever required.	
8	<b>Documentation</b>	
8.1	User (Operating) manual in English.	
8.2	Service (Technical / Maintenance) manual in English.	
8.3	List of important spare parts and accessories with their part numbers and costing.	

**81 Ophthalmic Operating Table**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Technical Specification:</b>	
	B Should be electro-hydraulically operated.	
	B Disinfectant resistant stainless steel finished, foot switch operated	
	B All stainless steel accessories	
	B With special design cushioned head holder	
	B Safety back up of all functions	
	B Up & down movements	
	B Minimum height : 700 mm (approx)	
	B Maximum height : 900 mm (approx)	
	B Stroke length : 200 mm (approx)	
	Standard Accessories: 1.Foot switch (1no.), 2.Power cord (1no.)	
	<b>Standard Accessories</b>	
	1. Silicone bipolar cord	
	2. Standard tenzel bipolar forceps	
	3. Foot switch	
2	<b>Accessories, spares and consumables</b>	
2.1	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer.	
3	<b>Operating Environment</b>	
3.1	The product offered shall be designed to be stored and to operate normally under Power Supply, Climate, Temperature, Humidity, etc. for Sudan.	
3.2	Power supply: 220 – 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metre in length.	
3.3	Suitable UPS with maintenance free batteries, voltage regulation and spike protection for minimum 30 min. back-up shall be supplied with the system.	
4	<b>Standards and Safety Requirements</b>	
4.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
4.2	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
5	<b>User Training</b>	
5.1	Must provide user training (including how to use and maintain the equipment).	
6	<b>Warranty</b>	
6.1	Comprehensive warranty for 2 years.	
7	<b>Maintenance Service During Warranty Period</b>	
7.1	During warranty period supplier must ensure corrective/breakdown maintenance whenever required.	
8	<b>Documentation</b>	
8.1	User (Operating) manual in English.	
8.2	Service (Technical / Maintenance) manual in English.	
8.3	List of important spare parts and accessories with their part numbers and costing.	

**82 Portable Slit Lamp**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Technical Specification:</b>	
	Type Binocular Hand held Biomicroscope Slit Lamp	
	Small and light weight	
	Filters Red free, Blue, Heat absorption Grey, chalt, blue	
	Slit angle +/- 30 or +/- 90°	
	Fixation targets LED system,high lumination with long life hours	
	Biomicroscope	
	Magnification variable size	
	Dust cover.	
2	<b>Accessories, spares and consumables</b>	
2.1	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer.	
3	<b>Operating Environment</b>	
3.1	The product offered shall be designed to be stored and to operate normally under Power Supply, Climate, Temperature, Humidity, etc. for Sudan.	
3.2	Power supply: 220 – 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metre in length.	
3.3	Suitable UPS with maintenance free batteries, voltage regulation and spike protection for minimum 30 min. back-up shall be supplied with the system.	
4	<b>Standards and Safety Requirements</b>	
4.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
4.2	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
5	<b>User Training</b>	
5.1	Must provide user training (including how to use and maintain the equipment).	
6	<b>Warranty</b>	
6.1	Comprehensive warranty for 2 years.	
7	<b>Maintenance Service During Warranty Period</b>	
7.1	During warranty period supplier must ensure corrective/breakdown maintenance whenever required.	
8	<b>Documentation</b>	
8.1	User (Operating) manual in English.	
8.2	Service (Technical / Maintenance) manual in English.	
8.3	List of important spare parts and accessories with their part numbers and costing.	

**83 Specular Microscope**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Technical Specification:</b>	
	Photography Magnification 254x (on the Control Panel)	
	Photography Range 0.25x0.55mm	
	Resolving Power More than 125 line/mm	

	Fixation Target Central and Peripheral	
	Corneal Thickness Measurement	
	Measurement Range 0.400-0.750mm (Display Unit: 0.001mm Step Display)	
	The machine should be easy to operate and should have Auto image capture mode.	
	Should be able to capture Endothelial image. Also should have Auto-focusing and auto alignment.	
	Measurement - Should have Automated, Center & Flex - Center methods.	
	Cell analysis should be completed in a few seconds. Also choice for Automated.	
	Flex-Center and the center method should be used as manual analysis.	
	Analysis Data: Average Cell area, Maximum & Minimum cell area, Number of analyzed cell, Percentage of hexagonal cell, Corneal Thickness, Cell density, Standard deviation, Coefficient of variation	
	Cell image should be displayed in the entire frame and should have wide and clear image to help for objective diagnosis.	
	Should have built in Auto Pachymeter for Corneal Thickness Measurement.	
	Should have a Widescreen Touch of 15" having Panel PC mounted.	
	Should have a CCD Camera with a Konan Xe tube Flash & Konan Halogen Lamp Illumination for Focusing.	
	Photographic Field should be 0.24 x 0.4mm	
	Photographic Location should be Centre and Peripherals (12, 2, 10, 6 o' Clock)	
	Power Requirements Should be AC 100V - 240V 50/60 Hz.	
	Power consumption should be of 200VA.	
	Dimension should be approximately 388(W) x 457(D) x 780(H) mm	
	Should be quoted with Motorised Instrument Table.	
	• Wide Angle "Panorama" Photography Mode -Substantial Size increase of the analyzed area	
	• Two Specific Photographic Modes -Sequence Course & Free Style Course	
	• Quick Automatic Measurement and Analysis -Instant acquisition of the analysis result -intuitive Operation	
	• Easy-to Read Screen and Comprehensive Analysis Software	
	-Frequency referred values are shown on top	
	-A pleomorphic/polymegetic histogram can be shown with color	
	• Compact and Stylish Design -10.4" rotatable touch panel monitor	
	<b>2 Accessories, spares and consumables</b>	
	2.1 All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer.	
	<b>3 Operating Environment</b>	
	3.1 The product offered shall be designed to be stored and to operate normally under Power Supply, Climate, Temperature, Humidity, etc. for Sudan.	
	3.2 Power supply: 220 - 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metre in length.	
	3.3 Suitable UPS with maintenance free batteries, voltage regulation and spike protection for minimum 30 min. back-up shall be supplied with the system.	
	<b>4 Standards and Safety Requirements</b>	
	4.1 Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
	4.2 CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
	<b>5 User Training</b>	
	5.1 Must provide user training (including how to use and maintain the equipment).	
	<b>6 Warranty</b>	
	6.1 Comprehensive warranty for 2 years.	
	<b>7 Maintenance Service During Warranty Period</b>	
	7.1 During warranty period supplier must ensure corrective/breakdown maintenance whenever required.	
	<b>8 Documentation</b>	
	8.1 User (Operative) manual in English.	
	8.2 Service (Technical / Maintenance) manual in English.	
	8.3 List of important spare parts and accessories with their part numbers and costing.	

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## Low Vision Devices

No.	Item Specifications	Fill your Specification
I	Manufacturer Name:	
II	Model No.:	
III	Country of Origin:	
1	<b>Technical Specification:</b>	
	To have protective hard coating	
	Provide the largest field possible per magnification	
	Provide illumination system	
2	<b>Accessories, spares and consumables</b>	
2.1	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer.	
3	<b>Operating Environment</b>	
3.1	The product offered shall be designed to be stored and to operate normally under Power Supply, Climate, Temperature, Humidity, etc. for Sudan.	
4	<b>Standards and Safety Requirements</b>	
4.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
4.2	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
5	<b>User Training</b>	
5.1	Must provide user training (including how to use and maintain the equipment).	
6	<b>Warranty</b>	
6.1	Comprehensive warranty for 2 years.	
7	<b>Maintenance Service During Warranty Period</b>	
7.1	During warranty period supplier must ensure corrective/breakdown maintenance whenever required.	
8	<b>Documentation</b>	
8.1	User (Operative) manual in English.	
8.2	Service (Technical / Maintenance) manual in English.	
8.3	List of important spare parts and accessories with their part numbers and costing.	

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## Vitrectomy Machine

No.	Item Specifications	Fill your Specification
I	Manufacturer Name:	
II	Model No.:	
III	Country of Origin:	
1	<b>Technical Specification:</b>	
	Should have the facility to generate direct venturi vacuum of up to 650 mm Hg through cassette system having 2 independent aspiration ports.	
	Should have the capacity to compensate the infusion pressure constantly with results in a more stable IOP.	
	Should have the 3-D technology to linearly control vacuum and cut rate simultaneously in vitrectomy mode.	
	Should have the facility to allow surgeon to select from 3 different duty cycle options at any given cut rate for more control and precise cutting near retina or similar mechanism.	
	Should have the ability to drive vertical guillotine vitrectomy cutter to go up to 5000 cuts to 20,000 cuts/min.	
	Should have the capacity to monitor infusion pressure constantly.	
	The system should have two Xenon illuminators with four ports. The System should recognize the gauge of illuminator connected and adjust the illumination accordingly.	
	The system should have the facility to monitor the bulb life, to avoid surges.	
	Should have the capacity to support MIVS options like 23 G, 25 G AND 27 G.	
	The System should have Vented Gas Forced Infusion Capability.	
	The System should have the Automated Silicon Oil Injection Capability.	
	Should have the fully programmable footswitch with the facility to change procedural modes through footswitch.	
	Should have the facility of regular fixed diathermy.	
	Should have the facility to digitally control the infusion pressure and the facility to toggle between a regular infusion pressure and an higher alternate pressure (to achieve tamponade effect) with the help of footswitch.	
	Should have the facility for the extrusion of sub retinal fluid.	
	Should have the facility of voice re - confirmation.	
	Should programmability to store various parameters.	
	Should have the facility of fragmentation with the help of 4 crystal ultrasound light weight hand - piece.	
	Should have a Bar - Code Scanner to identify the gauge of the vitrectomy cutter and populate it in the consumable list.	
	The system should have Auto Fluid / Air Exchange; No stop - cock.	
	The System should have Auto Gas Fill (CF8 and SF6) option.	
	Should have the facility of Proportional Reflux.	
	Alarm for infusion fluid change	
	Should have inbuilt 532 nm green laser.	
2	<b>Accessories, spares and consumables</b>	
2.1	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer.	
3	<b>Operating Environment</b>	
3.1	The product offered shall be designed to be stored and to operate normally under Power Supply, Climate, Temperature, Humidity, etc. for Sudan.	
3.2	Power supply: 220 - 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metre in length.	
3.3	Suitable UPS with maintenance free batteries, voltage regulation and spike protection for minimum 30 min. back-up shall be supplied with the system.	
4	<b>Standards and Safety Requirements</b>	
4.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
4.2	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
5	<b>User Training</b>	
5.1	Must provide user training (including how to use and maintain the equipment).	
6	<b>Warranty</b>	
6.1	Comprehensive warranty for 2 years.	
7	<b>Maintenance Service During Warranty Period</b>	
7.1	During warranty period supplier must ensure corrective/breakdown maintenance whenever required.	
8	<b>Documentation</b>	
8.1	User (Operative) manual in English.	
8.2	Service (Technical / Maintenance) manual in English.	
8.3	List of important spare parts and accessories with their part numbers and costing.	

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## Cataract &amp; ILO Set With Sterilization box

No.	Item Specifications	Fill your Specification
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I	Manufacturer Name:	
II	Model No.:	
III	Country of Origin:	
1	Technical Specification:	
	Barraguer Wire Speculum, Large - Qty. 1	
	Sutura Tine Forceps, Curved - Qty. 1	
	Mc Pherson Forceps, Angled - Qty. 1	
	Mc Pherson Corneal Forceps, 1x2 Teeth - Qty. 1	
	Superior Rectus Forceps - Qty. 1	
	Wills Hospital Utility Forceps - Qty. 1	
	Castroviejo Corneal Scissors, Universal - Qty. 1	
	Vannas Capsulotomy Scissors, Angled - Qty. 1	
	Westcott Stitch Scissors - Qty. 1	
	Barraguer Needle Holder, Micro Jaws/W/O Lock - Qty. 1	
	Hartman Mosquito Forceps, Straight - Qty. 1	
	Hartman Mosquito Forceps, Curved - Qty. 1	
	Rydrift Air Injection Cannula - Qty. 1	
	Simcoe I/A Cannula, Direct - Qty. 1	
	Bard-Parker Handle - Qty. 1	
	Agarwal Phaco Chopper - Qty. 1	
	Sinsky II Lens Manipulative Hook - Qty. 1	
	Lewis Lens Loop, Small - Qty. 1	
	Smith Lens Expressor - Qty. 1	
	Sterilization Box Stainless - Qty. 1	
2	Standards and Safety Requirements	
2.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
2.2	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
3	Warranty	
3.1	Comprehensive warranty for 2 years.	

**87** **LID Set With Sterilizer box**

No.	Item Specifications	Fill your Specification
I	Manufacturer Name:	
II	Model No.:	
III	Country of Origin:	
1	Technical Specification:	
	Lancaster Eye Speculum - Qty. 1	
	Desmarnes Lid Retractor, Size 0 - Qty. 1	
	Jagger Lid Plate - Qty. 1	
	Fixation Hook, 2.0x1.5mm, Small - Qty. 1	
	Graefe Muscle Hook, Size 3 - Qty. 1	
	Meyerhoefer Chalazion Curette, Size 2 - Qty. 1	
	St. Martin Suturing Forceps, 1x2 Teeth - Qty. 1	
	Fixation Forceps, 1x2 Teeth - Qty. 1	
	Beer Cilia Forceps - Qty. 1	
	Berke Pliers Forceps, 20mm - Qty. 1	
	Snellen Entropion Forceps, Left, Small - Qty. 1	
	Snellen Entropion Forceps, Right, Small - Qty. 1	
	Ayer Chalazion Forceps - Qty. 1	
	Lambert Chalazion Forceps - Qty. 1	
	Mc Pherson Tying Forceps, Long Handle - Qty. 1	
	Hartman Mosquito Forceps, Straight - Qty. 1	
	Hartman Mosquito Forceps, Curved - Qty. 1	
	Westcott Stitch Scissors - Qty. 1	
	Eye Scissors, Curved, 4 1/2" Length - Qty. 1	
	Stevens Tenotomy Scissors, Curved - Qty. 1	
	Kalt Needle Holder - Qty. 1	
	Barraguer N. Holder, Short Model, M. Jaws W/O Lock - Qty. 1	
	Bard Parker Handle #3 - Qty. 1	
	Castroviejo Caliper, Straight - Qty. 1	
	Fixation Forceps, 2x3 Teeth, Angular - Qty. 1	
	Corneal Scissors, Stainless - Qty. 1	
2	Standards and Safety Requirements	
2.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
2.2	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
3	Warranty	
3.1	Comprehensive warranty for 2 years.	

**88** **Vitrectomy Surgical Set (Retina Surgical Set)**

No.	Item Specifications	Fill your Specification
I	Manufacturer Name:	
II	Model No.:	
III	Country of Origin:	
1	Technical Specification:	
	Pauque universal suturing forceps with tying platform - Qty. 1	
	Westcott Scissors blunt-blunt, 12 cm - Qty. 1	
	Thornton fixation ring swivelable 12 teeth inside diameter 16 mm - Qty. 1	
	Vannas capsulotomy scissors extremely delicate curved 8 cm - Qty. 1	
	Vannas capsulotomy scissors extremely delicate straight 8 cm - Qty. 1	
	Vannas capsulotomy scissors extremely delicate angled on flat 8 cm - Qty. 1	
	Kelman mcpherson fragment forceps angled 7.5 mm - Qty. 1	
	Dardenne tying forceps angled 6 mm - Qty. 1	
	Tuebingen model tying forceps straight - Qty. 1	
	Frankfurt model hydrodissection cannula 27 G/0.40 mm - Qty. 1	
	Sautter hydrodissection cannula 27 G/0.40mm - Qty. 1	
	Fuller iris retractor in sterilising case for mechanical dilation of the pupil nylon flex - Qty. 1	
	Snellen lens loop - Qty. 1	
	Kratz capsule polishing canula - Qty. 1	
	Dardenne iris hook push pull - Qty. 1	
	Backhaus towel forceps total length 90 mm - Qty. 1	
	Diffenbach serre fine straight total 35 mm - Qty. 1	
	Dressing forceps 1/2 teeth 0.7mm - Qty. 1	
	Grehn glaucoma punch 20 G /0.90mm - Qty. 1	
	Luntz-dodicklaucoma punch with rotatable cutting - Qty. 1	
	Harms trabecular probe radius 7mm right - Qty. 1	
	Harms trabecular probe radius 7mm left - Qty. 1	
	Capsulorhexis forceps extremely delicate - Qty. 1	
	Meloney keratometer - Qty. 1	
	Healon cannula 21 G/0.80mm/30mm - Qty. 1	
	Castroviejo cyclodialysis spatula cannula 19G/1.10mm length of spatula 10mm - Qty. 1	
	Frankfurt model hydrodissection cannula 27 G/0.40mm - Qty. 1	
	Bonn model irrigation cannula delicate - Qty. 1	
	Silicon bulb 20 ml - Qty. 1	
2	Standards and Safety Requirements	
2.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
2.2	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
3	Warranty	
3.1	Comprehensive warranty for 2 years.	

**89** **Flash Autoclave**

No.	Item Specifications	Fill your Specification
I	Manufacturer Name:	
II	Model No.:	
III	Country of Origin:	
1	Technical Specifications	
	Should be of Class B type.	
	Should be a microprocessor controlled table top autoclave for ophthalmic applications.	
	Should provide sterilization at 121°C and 134°C for both wrapped and unwrapped instruments and tools.	
	Should have flash cycle for rapid sterilization and should have an option for liquid cycle.	
	Should have pre & post vacuum cycle.	
	Should have rapid warm up facility.	
	The system should be equipped with required safety features. The door should have double locking safety feature and should open only with atmospheric pressure in the chamber.	
	Should have automatic safety cut-off to prevent overheating and cut-off for insufficient water.	
	Should have a chamber capacity of 20 liters/cycle or more.	
	All tubing's, fixtures, fuses, reusable and accessories should be supplied along with the equipment.	
	Controls should be visible and clearly defined.	

	Labels and markings should be clear and visible.	
<b>2</b>	<b>Accessories, spares and consumables</b>	
2.1	All standard accessories/consumables/parts required for the proper operation of the above item shall be included in the offer.	
<b>3</b>	<b>Operating Environment</b>	
3.1	The unit shall be capable of operating in ambient temperature of 10°C-45°C and relative humidity of 10-95%	
3.2	The unit shall be capable of being stored continuously in ambient temperature of -20°C -60°C and relative humidity of 10-95%	
<b>4</b>	<b>Power supply:</b>	
4.1	Input power supply: 220/240 V AC, 50Hz single phase schuko plug	
<b>5</b>	<b>Standards and Safety Requirements</b>	
5.1	Must submit ISO 9001 or ISO 13485:2003/AC: 2007 AND	
5.2	CE or USFDA or TUV approved product certificate.	
<b>6</b>	<b>Training</b>	
6.1	Must provide user & service training.	
<b>7</b>	<b>Warranty</b>	
7.1	Comprehensive warranty for 2 years after acceptance.	
<b>8</b>	<b>Maintenance Service During Warranty Period</b>	
8.1	Supplier must ensure planned preventive maintenance (PPM) along with corrective/breakdown maintenance whenever required.	
<b>9</b>	<b>Documentation</b>	
9.1	User (Operational) manual in English Should provide 2 sets(hardcopy and soft-copy)	
9.2	Service (Technical / Maintenance) manual in English Should provide 2 sets (hardcopy and soft-copy)	
9.3	List of important spare parts, accessories and consumables with their part numbers and costing.	

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## Heat Sealing Machine

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
<b>1</b>	<b>Technical Specifications</b>	
	The unit should have manual heat adjustments	
	System should be suitable for the sealing of surgical instruments in paper envelopes.	
	Should be microprocessor controlled.	
	Smooth easy cleaning surfaces.	
	Quick sealing time with sealing width of 12mm.	
	It should be a compact table top system.	
	Ergonomic handling with anti fatigue movement.	
<b>2</b>	<b>Accessories, spares and consumables</b>	
2.1	All standard accessories/consumables/parts required for the proper operation of the above item shall be included in the offer.	
<b>3</b>	<b>Operating Environment</b>	
3.1	The unit shall be capable of operating in ambient temperature of 10°C-45°C and relative humidity of 10-95%	
3.2	The unit shall be capable of being stored continuously in ambient temperature of -20°C -60°C and relative humidity of 10-95%	
<b>4</b>	<b>Power supply:</b>	
4.1	Input power supply: 220/240 V AC, 50Hz single phase schuko plug	
<b>5</b>	<b>Standards and Safety Requirements</b>	
5.1	Must submit ISO 9001 or ISO 13485:2003/AC: 2007 AND	
5.2	CE or USFDA or TUV approved product certificate.	
<b>6</b>	<b>Training</b>	
6.1	Must provide user & service training.	
<b>7</b>	<b>Warranty</b>	
7.1	Comprehensive warranty for 2 years after acceptance.	
<b>8</b>	<b>Maintenance Service During Warranty Period</b>	
8.1	Supplier must ensure planned preventive maintenance (PPM) along with corrective/breakdown maintenance whenever required.	
<b>9</b>	<b>Documentation</b>	
9.1	User (Operational) manual in English Should provide 2 sets(hardcopy and soft-copy)	
9.2	Service (Technical / Maintenance) manual in English Should provide 2 sets (hardcopy and soft-copy)	
9.3	List of important spare parts, accessories and consumables with their part numbers and costing.	

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## Ultrasonic Cleaner

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
<b>1</b>	<b>Technical Specifications</b>	
	Provision of digital timer and digital display	
	Should be able to remove the dirt and debris from the crevices of instruments.	
	Should have a SS 304 grade sturdy, non corrosive tank and casing.	
	Should have a tank capacity of approximately 8 L.	
	Should be supplied with standard accessories including SS 304 grade mesh bucket & lid.	
	Should have 37-42 KHz transducer ( Heating capacity 200 Watts )	
	Should have heating facility upto 70 degree.	
	Low noise Ultrasonic machines (noise level less than to 80 dB)	
	Should have Electronic controller cum indicator with time set feature for heating and sonication, LED display also showing remaining time of cleaning.	
	Should have Water drain facility.	
<b>2</b>	<b>Accessories, spares and consumables</b>	
2.1	All standard accessories/consumables/parts required for the proper operation of the above item shall be included in the offer.	
<b>3</b>	<b>Operating Environment</b>	
3.1	The unit shall be capable of operating in ambient temperature of 10°C-45°C and relative humidity of 10-95%	
3.2	The unit shall be capable of being stored continuously in ambient temperature of -20°C -60°C and relative humidity of 10-95%	
<b>4</b>	<b>Power supply:</b>	
4.1	Input power supply: 220/240 V AC, 50Hz single phase schuko plug	
<b>5</b>	<b>Standards and Safety Requirements</b>	
5.1	Must submit ISO 9001 or ISO 13485:2003/AC: 2007 AND	
5.2	CE or USFDA or TUV approved product certificate.	
<b>6</b>	<b>Training</b>	
6.1	Must provide user & service training.	
<b>7</b>	<b>Warranty</b>	
7.1	Comprehensive warranty for 2 years after acceptance.	
<b>8</b>	<b>Maintenance Service During Warranty Period</b>	
8.1	Supplier must ensure planned preventive maintenance (PPM) along with corrective/breakdown maintenance whenever required.	
<b>9</b>	<b>Documentation</b>	
9.1	User (Operational) manual in English Should provide 2 sets(hardcopy and soft-copy)	
9.2	Service (Technical / Maintenance) manual in English Should provide 2 sets (hardcopy and soft-copy)	
9.3	List of important spare parts, accessories and consumables with their part numbers and costing.	

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## Wheel Chair

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
<b>1</b>	<b>Description of Function</b>	
1.1	Wheel chair is used in hospitals for means of mobility by disabled persons/or persons who have impairments that limit their ability to walk.	
<b>2</b>	<b>Operational Requirements</b>	
2.1	It shall be a foldable BUT shall NOT a collapsible type. The mechanism of folding & unfolding must be easy. Large standard adult size hospital wheelchair fixed/ foldable type. Easy maneuverable.	
<b>3</b>	<b>System Configuration</b>	
3.1	Wheel chair invalid type.	
<b>4</b>	<b>Technical Specifications</b>	
4.1	Must be made of the highest quality materials such as Chrome polished finish or stainless steel.	
4.2	Dimensions: approx. W 68 cm x D 110 cm x H 94 cm. Seat width: approx.450mm (18").	
4.3	Wheels to have braking/locking mechanism and self-propelling SS hoops; two swivel castors (200mm dia. approx.) in front.	
4.4	Tyre fitted with self-propelling hoops and brake arrangements.	
4.5	Tyre sizes: Rear approx. 60cm (24") solid Mag tyres or Bicycle type spoked wheels, and Front approx. 200mm (8") Mag swivel casters.	
4.6	Armrests: Padded, Fixed height and detachable.	
4.7	Waterproof upholstery and easy to clean.	
4.8	Padded back rest, seat and push handle.	
4.9	Footrests: Fixed height and swing away foot plates and detachable, preferably made of Aluminium.	
4.1	Maximum Patient weight capacity: approx. 110kg (250 lbs.).	
4.11	I.V. pod shall be provided at the right side of the back rest.	
<b>5</b>	<b>Accessories, spares and consumables</b>	
5.1	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer.	
<b>6</b>	<b>Operating Environment</b>	
6.1	The product offered shall be designed to be stored and to operate normally under Climate, Temperature, Humidity, etc. for Sudan.	
<b>7</b>	<b>Standards and Safety Requirements</b>	
7.1	Must submit ISO 9001 or ISO 13485:2003/AC:2007 AND	
7.2	CE or USFDA approved product certificate.	
<b>8</b>	<b>User Training</b>	
8.1	Not applicable.	

9	<b>Warranty</b>	
9.1	Comprehensive warranty for 2 years.	
10	<b>Maintenance Service During Warranty Period</b>	
10.1	Standard warranty conditions are applicable.	
11	<b>Installation and Commissioning</b>	
11.1	Must supply pre-assembled unit, ready to use.	
12	<b>Documentation</b>	
12.1	User's manual shall be supplied in English.	

93 **Electronic Wheel Chair**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Description of Function</b>	
1.1	Indoor Heavy-Duty Electric-Powered Wheelchair for transportation of patients who are unable to stand/walk.	
2	<b>Technical Specifications</b>	
2.1	State-of-the-art control panel	
2.2	Front-wheel drive for excellent maneuverability	
2.3	Larger foot platform	
2.4	Flip-up armrests	
2.5	Very compact dimensions for easy maneuverability	
2.6	Minimum Driving Range from 15 to 20 miles.	
2.7	Swing-away foot and arm supports for easy stepping on/off.	
2.8	Armrests seat and back are upholstered.	
2.9	<b>Materials:</b>	
2.9.1	High resistance to corrosion.	
2.9.2	Frame: Chrome-plated tubular steel.	
2.9.3	Upholstery: Plastic, flexible highly tear resistant, anti-static, flame retardant, disinfectant- and liquid proof, washable.	
2.9.4	Tires: Heavy duty solid rubber.	
3	<b>Accessories, spares and consumables</b>	
3.1	All standard accessories/consumables/parts required for the proper operation of the above item shall be included in the offer.	
4	<b>Standards and Safety Requirements</b>	
4.1	USFDA or CE or TUV approved product	
4.2	ISO 13485 / ISO14971 certification for quality standards.	
5	<b>Warranty and Maintenance</b>	
5.1	2 years	

94 **Commode Chair**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Description of Function</b>	
1.1	versatile toileting, shower and commode solution	
2	<b>Technical Specifications</b>	
2.1	Easy to maneuver and easy to clean	
2.2	Ergonomically shaped backrest with integrated hand grip for caregiver aid	
2.3	Drop-arm design	
2.4	Height adjustable, swinging and removable foot supports	
2.5	Swiveling and locking castors for secure transfers	
2.6	Soft and durable seat allows for comfortable seating and easy cleaning	
2.7	Hygiene bucket with vacuum seal top	
2.8	Heavy duty wheelchair	
2.9	stainless steel aluminum chrome plate.	
2.10	wheel break ,solid wheel ,rear wheel Ø600-650 mm , front wheel Ø 200- 250 mm.	
2.11	patient weight : => 150 Kg , seat width : 450 - 600 mm , Depth : 400 - 450 mm	
2.12	foam rubber , armrest , footrest	
2.13	foldable backrest	
2.14	Brake( for person who is push , for the person on the seat)	
3	<b>Accessories, spares and consumables</b>	
3.1	All standard accessories/consumables/parts required for the proper operation of the above item shall be included in the offer.	
4	<b>Standards and Safety Requirements</b>	
4.1	Must be USFDA or CE or TUV approved product	
5	<b>Warranty and Maintenance</b>	
5.1	2 years	

95 **Folding Walking Frame**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Technical Specifications</b>	
1.1	Light weight.	
1.2	Painted aluminum tubular construction.	
1.3	Fold easily and quickly.	
1.4	Slipping locking pins in proper notch.	
1.5	Fitted with soft PVC hand grips and shoes.	
1.6	Maximum User Weight 125kg.	
1.7	Height Adjustment 75 - 90cm .	
2	<b>Accessories, spares and consumables</b>	
2.1	All standard accessories/consumables/parts required for the proper operation of the above item shall be included in the offer.	
3	<b>Operating Environment</b>	
3.1	The unit shall be capable of operating in ambient temperature of 10°C-45°C and relative humidity of 10-95%	
3.2	The unit shall be capable of being stored continuously in ambient temperature of -20°C -60°C and relative humidity of 10-95%	
4	<b>Standards and Safety Requirements</b>	
4.1	Must submit ISO 9001 or ISO 13485:2003/AC: 2007 AND	
4.2	CE or USFDA or TUV approved product certificate.	
5	<b>Warranty</b>	
5.1	Comprehensive warranty for 2 years after acceptance.	
6	<b>Documentation</b>	
6.1	User (Operator) manual in English Should provide 2 sets(hardcopy and soft-copy)	

96 **Muscle Stimulator**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Technical Specifications</b>	
	It should be a microprocessor based , therapeutic, muscle stimulator unit for muscle stimulation	
	It should be light weight and compact in design.	
	It should have visual/audio indicator for different mode of treatment.	
	It should have a soft touch key to select treatment modes.	
	Machine should produce output only after intensity is set to Zero with audio alarm	
	It should enable user to select accurate pulses with pulse width for treatment in fraction of seconds.	
	It should have digital display of output current to accurately set output current	
	It should have surge protection safety feature circuit to protect the machine and patient if high surge is sensed in the input current .	
	It should have microprocessor controlled digital display of treatment time. The output should switch off automatically after treatment time is over.	
	It should have Plain Galvanic, Pulsed Galvanic, Plain Faradic and Surged Faradic for muscle stimulation.	
	Pulseduration:01, 03, 1, 3, 10,30,100,300 mSec.	
	Faradic frequency: 50 Hz/7 mSec	
	Surge duration 1-5 sec	
	Output current 0-40 mA	
2	<b>Operating Environment</b>	
2.1	The product offered shall be designed to be stored and to operate normally under Power Supply, Climate, Temperature, Humidity, etc. for Sudan.	
2.2	Power supply: 220-240V/ 50 Hz AC Single phase with appropriate plug .The power cable must be minimum 3 Meter	
2.3	Suitable UPS with maintenance free batteries for minimum one-hour back-up should be supplied with the system.	
3	<b>Standards and Safety Requirements</b>	
3.1	Must submit ISO 13485:2003/AC:2007 for Medical Devices AND	
3.2	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
4	<b>User Training</b>	
4.1	Must provide user training (including how to use and maintain the equipment).	
5	<b>Warranty</b>	
5.1	Comprehensive warranty for 2 years after acceptance.	
6	<b>Maintenance Service During Warranty Period</b>	

6.1	During the warranty period supplier must ensure corrective/breakdown maintenance whenever required.	
7	<b>Installation and Commissioning</b>	
7.1	Supplier must accomplish proper installation and commissioning of the equipment on site.	
8	<b>Documentation</b>	
8.1	User (Operating) manual in English	
8.2	Service (Technical / Maintenance) manual in English	
8.3	List of important spare parts and accessories with their part numbers and costing.	

97 Shortwave Therapy Machine

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Technical Specifications</b>	
1.1	Short wave diathermy produces high frequency alternating current. The heat energy obtained from the wave is used for giving pain relief to the patient.	
2	<b>Operational Requirements</b>	
2.1	A device using electromagnetic energy in the shortwave frequency range (3-30 MHz) for therapeutic purposes, the unit included electrodes the shortwave generator and all associated electronics controls and enclosure.	
3	<b>Technical Specification</b>	
3.1	Output of 400 to 500w in continuous mode and 800 to 1100 w in pulse mode pulse repetition frequency of 20 to 200 Hz adjustable in 10 steps LCD Screen display of parameter Treatment timer with all standard accessories condenser pad with cable Dis electrodes with arms and cables.	
3.2	Patient safety switch	
4	<b>Operating Environment</b>	
4.1	The product offered shall be designed to be stored and to operate normally under Power Supply, Climate, Temperature, Humidity, etc. for Sudan.	
4.2	Power supply: 220-240V/ 50 Hz AC Single phase with appropriate plug. The power cable must be minimum 3 meter.	
4.3	Suitable UPS with maintenance free batteries for minimum one-hour back-up should be supplied with the system.	
5	<b>Standards and Safety Requirements</b>	
5.1	Must submit ISO13485-2003/AC:2007 for Medical Devices AND	
5.2	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
6	<b>User Training</b>	
6.1	Must provide user training (including how to use and maintain the equipment).	
7	<b>Warranty</b>	
7.1	Comprehensive warranty for 2 years after acceptance.	
8	<b>Maintenance Service During Warranty Period</b>	
8.1	During the warranty period supplier must ensure corrective/breakdown maintenance whenever required.	
9	<b>Installation and Commissioning</b>	
9.1	Supplier must accomplish proper installation and commissioning of the equipment on site.	
10	<b>Documentation</b>	
10.1	User (Operating) manual in English	
10.2	Service (Technical / Maintenance) manual in English	
10.3	List of important spare parts and accessories with their part numbers and costing.	

98 Treadmill Device

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Technical Specifications</b>	
1.1	Treadmill (T.M.T) Jogger with side handles	
1.2	Speed range approx. 0-12 km/h.	
1.3	Elevation approx. 0-12 %.	
1.4	Walking area approx. 120x50cm.	
1.5	Ergonomically designed front and side handles.	
1.6	Emergency stop switch.	
1.7	Use weight capacity approx. 150 Kg.	
1.8	Soft start/stop feature.	
1.9	Digital display of speed and elevation.	
1.10	Display of stage number, stage time, distance covered, pace, calories/minute, METS.	
1.11	Must have a Powder Coated frame	
2	<b>Accessories, spares and consumables</b>	
2.1	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer. Bidders must specify the quantity of every item included in their offer (including items not specified above).	
3	<b>Operating Environment</b>	
3.1	Power supply: 220-240V/ 50 Hz AC Single phase.	
4	<b>Standards and Safety Requirements</b>	
4.1	ISO13485-2003/AC:2007 for Medical Devices	
4.2	CE (93/42 EEC Directives), TUV or USFDA approved product certificate.	
5	<b>Warranty</b>	
5.1	Comprehensive warranty for 2 year.	
6	<b>Documentation</b>	
6.1	List of important spare parts and accessories with their part numbers and costing.	
6.2	Service (Technical / Maintenance) manual in English	
6.3	List of important spare parts and accessories with their part numbers and costing.	

99 Bicycle Ergometer

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Technical Specifications</b>	
1.1	Tubular steel frame on balanced legs with four rubber heavy-duty tips.	
1.2	Should have comfortable saddle and foam fitted handle	
1.3	Should have adjustable design to fit all heights and weights.	
1.4	Should have Resistance system with manual control.	
1.5	Should have Adjustable seat pad, Adjustable seat back	
1.6	Must be fitted with a ball bearing resistance roller, which permits controlled movement in riding.	
1.7	Capacity approx. 150kg.	
2	<b>Accessories, spares and consumables</b>	
2.1	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer. Bidders must specify the quantity of every item included in their offer (including items not specified above).	
3	<b>Standards and Safety Requirements</b>	
3.1	ISO13485-2003/AC:2007 for Medical Devices	
3.2	CE (93/42 EEC Directives), TUV or USFDA approved product certificate.	
4	<b>Warranty</b>	
4.1	Comprehensive warranty for 2 year.	
5	<b>Documentation</b>	
5.1	List of important spare parts and accessories with their part numbers and costing.	

100 Shockwave Therapy Machine

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Technical Specifications</b>	
1.1	Compact Easily transported shockwave	
1.2	High pressure up to 5 bars	
1.3	High frequency up to 22 Hz	
1.4	Single mode & Continuous mode	
1.5	Intensity gradient mode	
1.6	Touch screen display	
1.7	Color therapeutic encyclopedias with anatomical images	
1.8	Comfortable applicator, with ergonomic grip and elimination of backward shocks	
2	<b>Accessories, spares and consumables</b>	
2.1	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer. Bidders must specify the quantity of every item included in their offer (including items not specified above).	
3	<b>Operating Environment</b>	
3.1	Power supply: 220-240V/ 50 Hz AC Single phase.	
4	<b>Standards and Safety Requirements</b>	
4.1	ISO 9001 or ISO 13485-2003/AC:2007	
4.2	CE (93/42 EEC Directives), TUV or USFDA approved product certificate.	
5	<b>Warranty</b>	
5.1	Comprehensive warranty for 2 years.	
6	<b>Documentation</b>	
6.1	List of important spare parts and accessories with their part numbers and costing.	

101 Continuous Passive Motion Unit for Wrist Joint

No.	Item Specifications	Fill your Specification
I	Manufacturer Name:	
II	Model No.:	
III	Country of Origin:	
1	Description of Function	
1.1	Continuous Passive Motion (CPM) is a postoperative treatment method that is designed to aid recovery after joint surgery.	
2	Operational Requirements	
2.1	Must have anatomically correct movements.	
3	System Configuration	
3.1	Continuous Passive Motion Unit for Wrist Joint complete with accessories.	
4	Technical Specifications	
4.1	Flexion extension: 80deg-0deg-80deg.	
4.2	Linear radial deviation: 25deg-0deg-20deg.	
4.3	Should have laser detector to ensure the correct positioning of the joint.	
4.4	Should have patient stop switch for patient safety.	
4.5	Should have control panel on the machine itself and not on the remote control for safety reasons.	
4.6	Unit height should be adjustable as per patient's requirement.	
4.7	Unit should be supplied with accessory trolley.	
4.8	The unit should be movable on castor wheels.	
5	Accessories, spares and consumables	
5.1	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer. Bidders must specify the quantity of every item included in their offer (including items not specified above).	
6	Standards and Safety Requirements	
6.1	ISO13485:2003/AC:2007 for Medical Devices	
6.2	CE (93/42 EEC Directives), TUV or USFDA approved product certificate.	
7	Warranty	
7.1	Comprehensive warranty for 2 year.	
8	Documentation	
8.1	List of important spare parts and accessories with their part numbers and costing.	

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**Continuous Passive Motion Unit for Shoulder Joint**

No.	Item Specifications	Fill your Specification
I	Manufacturer Name:	
II	Model No.:	
III	Country of Origin:	
1	Description of Function	
1.1	Continuous Passive Motion (CPM) is a postoperative treatment method that is designed to aid recovery after joint surgery.	
2	Operational Requirements	
2.1	The device must have various controls like speed, duration of usage, amount of motion, rate of increase of motion	
3	System Configuration	
3.1	Continuous Passive Motion Unit for Shoulder Joint with timer complete with accessories.	
4	Technical Specifications	
4.1	Upper extremity continuous passive mobilizer.	
4.2	Must have facility for memory chip card.	
4.3	The control must provide ease of operation and safety.	
4.4	Must have facility of warm up mode.	
4.5	Must have facility of reverse on overload.	
4.6	Must have conversion technique for left and right shoulder treatment.	
4.7	Must have a timer up to 5 hours.	
4.8	Adduction/abduction range: 40deg-130deg	
4.9	Intra extra-rotation range: 90deg-0deg-90deg	
4.10	Elevation range: 5deg-175deg.	
5	Accessories, spares and consumables	
5.1	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer. Bidders must specify the quantity of every item included in their offer (including items not specified above).	
6	Standards and Safety Requirements	
6.1	ISO13485:2003/AC:2007 for Medical Devices	
6.2	CE (93/42 EEC Directives), TUV or USFDA approved product certificate.	
7	Warranty	
7.1	Comprehensive warranty for 2 year.	
8	Documentation	
8.1	List of important spare parts and accessories with their part numbers and costing.	

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**Continuous Passive Motion Unit for Elbow Joint**

No.	Item Specifications	Fill your Specification
I	Manufacturer Name:	
II	Model No.:	
III	Country of Origin:	
1	Description of Function	
1.1	Continuous Passive Motion (CPM) is a postoperative treatment method that is designed to aid recovery after joint surgery.	
2	Operational Requirements	
2.1	The device must have various controls like speed, duration of usage, amount of motion, rate of increase of motion, etc.	
3	System Configuration	
3.1	A continuous passive mobilizer for elbow joint complete with accessories.	
4	Technical Specifications	
4.1	Extension flexion: 0deg -140deg	
4.2	Prono-Supination: 90deg-0deg-90deg	
4.3	Should have laser detector to ensure the correct positioning of the joint.	
4.4	Should have patient stop switch for patient safety.	
4.5	Should have control panel on the machine itself and not on the remote control for safety reasons.	
4.6	Unit height should be adjustable as per patient's requirement.	
4.7	Unit should be supplied with accessory trolley.	
4.8	The unit should be movable on castor wheels.	
5	Accessories, spares and consumables	
5.1	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer. Bidders must specify the quantity of every item included in their offer (including items not specified above).	
6	Standards and Safety Requirements	
6.1	ISO13485:2003/AC:2007 for Medical Devices	
6.2	CE (93/42 EEC Directives), TUV or USFDA approved product certificate.	
7	Warranty	
7.1	Comprehensive warranty for 2 year.	
8	Documentation	
8.1	List of important spare parts and accessories with their part numbers and costing.	

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**Continuous Passive Motion Unit for Lower Limbs**

No.	Item Specifications	Fill your Specification
I	Manufacturer Name:	
II	Model No.:	
III	Country of Origin:	
1	Description of Function	
1.1	Continuous passive motion (CPM) is a treatment method designed to aid in the recovery of joints after surgery.	
2	Operational Requirements	
2.1	CPM involves the use of a mechanical device, which automatically moves the joint with the goal of initiating early movement following surgery. The device itself supports the limb and slowly moves the joint without patient assistance.	
3	System Configuration	
3.1	Continuous Passive Motion (CPM) Therapy for Lower Limbs with complete accessories.	
4	Technical Specifications	
4.1	The unit should have digital keyboard with LCD display.	
4.2	Knee and Hip mobilization in the same unit.	
4.3	Ankle Mobilization is must in the same unit.	
4.4	Speed control during Flexion / Extension	
4.5	Force control	
4.6	Work time control	
4.7	Automatic increase in Extension range	
4.8	Pause during flexion/ Extension	
4.9	Automatic increase in Flexion range	
4.10	Warm up Cycles	
4.11	The unit should have get functional panel on the unit only, but not on the patient stop switch or remote control for patient safety.	
4.12	Knee movement breadth: 0deg – 110deg	
4.13	Ankle movement breadth: 20deg to 130deg	
4.14	Hip movement breadth (mid limb) : 10deg – 70deg	
4.15	Easy to operate and transport.	
5	Accessories, spares and consumables	
5.1	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer. Bidders must specify the quantity of every item included in their offer (including items not specified above).	

6	<b>Standards and Safety Requirements</b>	
6.1	ISO13485:2003/AC:2007 for Medical Devices	
6.2	CE (93/42 EEC Directives), TUV or USFDA approved product certificate.	
7	<b>Warranty</b>	
7.1	Comprehensive warranty for 2 year.	
8	<b>Documentation</b>	
8.1	List of important spare parts and accessories with their part numbers and costing.	

**105 Parallel Bar**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Description of Function</b>	
1.1	medical devices specifically used in physical and occupational rehabilitation therapy to assist individuals to re-learn to walk and for gait training, as well as to regain balance, strength, range of motion, and mobility.	
2	<b>Technical Specifications</b>	
2.1	Unit with adjustable height Adult Bar and adjustable height Child's Bar.	
2.2	Secure Lock System.	
2.3	Adult bar adjusts from approx. 29" to 42"H and child's bar adjusts from approx. 19" to 32" high.	
2.4	Each upright telescopes up/down in 1/2" increments and locks into position with fail-safe ball- tip locking pin.	
2.5	Adult bars adjust in width from approx. 11" to 25" and child bars from approx. 8" to 23" with ergonomic control knobs.	
2.6	15 ft long Salm-finish hardwood platform with tapered ends for easy wheelchair access.	
2.7	Steel uprights.	
2.8	Anti-slip treads on each end.	
3	<b>Accessories, spares and consumables</b>	
3.1	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer. Bidders must specify the quantity of every item included in their offer (including items not specified above).	
4	<b>Standards and Safety Requirements</b>	
4.1	Must submit ISO 9001 or ISO13485:2003/AC:2007	
4.2	CE, TUV or USFDA approved product certificate.	
5	<b>Warranty</b>	
5.1	Comprehensive warranty for 2 years.	
6	<b>Documentation</b>	
6.1	List of important spare parts and accessories with their part numbers and costing.	

**106 Shoulder Exercise Wheel**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Description of Function</b>	
1.1	A tool for improving shoulder function and range of motion.	
2	<b>Technical Specifications</b>	
2.1	Fitted with calibrated sensitive resistance mechanism, the resistance is controllable from zero to maximum. A 360 deg.	
2.2	Fitted with resistance mechanism at 360°.	
2.3	Wall Mounted set must include mounting hardware	
3	<b>WARRANTY AND MAINTENANCE</b>	
3.1	Comprehensive warranty for 2 years.	

**107 Exercise Staircase**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Description of Function</b>	
1.1	Staircase used for exercising in physiotherapy.	
2	<b>Operational Requirements</b>	
2.1	Staircase as specified with approx. capacity 200 Kg.	
3	<b>System Configuration</b>	
3.1	Sturdy built Exerciser Stair Case.	
4	<b>Technical Specifications</b>	
4.1	Sturdy built	
4.2	First step moves into the second to make it a bus step of 30 cm height.	
4.3	Steps shall be 75 cm wide and 25 cm deep or better.	
4.4	Shall have handrails at different heights to accommodate adults and children.	
4.5	Steps and platform covered with antiskid material.	
5	<b>Accessories, spares and consumables</b>	
5.1	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer. Bidders must specify the quantity of every item included in their offer (including items not specified above).	
6	<b>Standards and Safety Requirements</b>	
6.1	ISO 9001 or ISO13485:2003/AC:2007	
6.2	CE (93/42 EEC Directives), TUV or USFDA approved product certificate.	
7	<b>Warranty</b>	
7.1	Comprehensive warranty for 2 years.	

**108 Hand Exerciser Table**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Description of Function</b>	
1.1	A device specifically designed to exercise the intrinsic hand, wrist and forearm muscles, with or without resistance.	
2	<b>Operational Requirements</b>	
2.1	Height-adjustable axial resistance unit allows forearm pronation, supination and wrist circumduction.	
3	<b>System Configuration</b>	
3.1	Hand Exerciser Table.	
4	<b>Technical Specifications</b>	
4.1	Table with laminated top.	
4.2	Fitted with 6 pulleys in a steel frame.	
4.3	Loops and nylon cord passing through the table with hanging weights underneath.	
4.4	To be supplied with five sets of Graduated weight set for progression from lighter to heavier weights.	
5	<b>Accessories, spares and consumables</b>	
5.1	Graduated weight set for progression from lighter to heavier weights.	
5.2	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer. Bidders must specify the quantity of every item included in their offer (including items not specified above).	
6	<b>Standards and Safety Requirements</b>	
6.1	ISO 9001 or ISO13485:2003/AC:2007	
6.2	CE (93/42 EEC Directives), TUV or USFDA approved product certificate.	
7	<b>Warranty</b>	
7.1	Comprehensive warranty for 2 years.	
8	<b>Documentation</b>	
8.1	List of important spare parts and accessories with their part numbers and costing.	

**109 Dumbbell Set with Cart**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Description of Function</b>	
1.1	Strengthen weak muscle through load resisting exercises of both upper and lower limbs	
2	<b>Technical Specifications</b>	
2.1	Solid steel dumbbell with chrome plated finish and powder coated cart	
2.2	2 dumbbell set of each: 1kg, 1.5kg, 2 kg, 2.5 kg, 3 kg, 3.5 kg, 4 kg, 4.5 kg, 5 kg.	
2.3	Cart must move on heavy duty wheels	
3	<b>WARRANTY AND MAINTENANCE</b>	
3.1	2 years	

**110 Pediatric Walking Frame**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Description of Function</b>	

1.1	Helps maintain balance and stability when standing and walking	
2	<b>Technical Specifications</b>	
2.1	Folds up for convenient, compact storage and transport	
2.2	Easy push-button mechanisms may be operated by fingers, palms or side of hand	
2.3	Each side operates independently to allow easy movement through narrow spaces and greater stability while standing	
2.4	J-shape frame design	
2.5	Comfortable molded hand grips for a secure hold	
2.6	Slip-resistant rear tips for secure support	
2.7	Lightweight alloy construction to ensure maximum strength while remaining lightweight	
3	<b>Accessories, spares and consumables</b>	
3.1	All standard accessories/consumables/parts required for the proper operation of the above item shall be included in the offer.	
4	<b>STANDARDS AND SAFETY</b>	
4.1	Must be USFDA or CE or TUV approved product	
5	<b>WARRANTY AND MAINTENANCE</b>	
5.1	Comprehensive warranty for 2 years.	

**111 Activity Mattress**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Description of Function</b>	
1.1	All purpose lightweight mat of high density foam, protects body during exercises.	
2	<b>Technical Specifications</b>	
2.1	Smooth texture and easy to clean	
2.2	Anti-slippery	
3	<b>WARRANTY AND MAINTENANCE</b>	
3.1	Comprehensive warranty for 2 years.	

**112 Spider Suspension System**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Description of Function</b>	
1.1	The Universal Exercise Unit (UEU), also known as the spider cage, is a suspension system using belts, bungee cords, and a pulley system to allow patients with neuromuscular disorders to move more freely and independently	
4	<b>Technical Specifications</b>	
4.1	The device must work for a variety of individuals of varying weight, age, and height	
4.2	The device should be transportable.	
4.3	The device must include some elastic suspension bands of varying length and resistance.	
4.4	The spider cage should provide enough room to allow for the individual to translocate around the cage in each direction. It should provide attachment locations for the necessary elastic straps, and allow these straps to be attached or detached to the individual using the cage.	
4.5	The spider cage should be strong and stable enough to allow for rapid movement and loads that will exceed the normal weight of the individual.	
5	<b>Accessories, spares and consumables</b>	
5.1	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer. Bidders must specify the quantity of every item included in their offer (including items not specified above).	
6	<b>Standards and Safety Requirements</b>	
6.1	ISO13485:2003/AC:2007 for Medical Devices	
6.2	CE (93/42 EEC Directives), TUV or USFDA approved product certificate.	
7	<b>Warranty</b>	
7.1	Comprehensive warranty for 2 years.	
8	<b>Documentation</b>	
8.1	List of important spare parts and accessories with their part numbers and costing.	

**113 Pediatric Tilting Table**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Description of Function</b>	
1.1	A primary use of the Tilt Table is to transitionally bring a patient into a progressively upright standing position. They are used with bedridden, wheelchair bound patients or with people who are unable to support their own weight due to neurological impairment or injury.	
2	<b>Operational Requirements</b>	
2.1	Heavy duty electrical tilt Table.	
3	<b>System Configuration</b>	
3.1	Tilt Table (Electrical), complete unit with accessories.	
4	<b>Technical Specifications</b>	
4.1	Tilt table with electrical height adjustment control and electric tilt control.	
4.2	Foam padded top.	
4.3	Silent and smooth lifting action.	
4.4	Full 90 degree tilt, with height adjustment to lower to wheelchair height.	
4.5	Height adjustment range approx. 45-85 cm.	
4.6	Electric tilt full 90° plus negative facility must have adjustable angle worktable.	
4.7	Must have angle indicator and large castors with brakes.	
4.8	Must have three positioning straps.	
4.9	Removable stainless steel footboard for vertical positioning support.	
4.10	Fitted with a quick release mechanism (QRM)	
4.11	Hand grips	
4.12	Thoracic, pelvic and knee straps	
5	<b>Accessories, spares and consumables</b>	
5.1	B Should be supplied with Standard Accessories: (Hand Grip, work table, fixation belts: Thoracic, Pelvic, Knee)	
5.2	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer. Bidders must specify the quantity of every item included in their offer (including items not specified above).	
6	<b>Operating Environment</b>	
6.1	Power supply: 220-240V/ 50 Hz AC Single phase.	
7	<b>Standards and Safety Requirements</b>	
7.1	ISO 9001 or ISO 13485:2003/AC:2007	
7.2	CE (93/42 EEC Directives), TUV or USFDA approved product certificate.	
8	<b>Warranty</b>	
8.1	Comprehensive warranty for 2 years.	
9	<b>Documentation</b>	
9.1	List of important spare parts and accessories with their part numbers and costing.	

**114 Patient Lift**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Technical Specifications</b>	
1.1	The lift shall offer a dignified and secure way for disabled patients to be lifted, transferred, seated and transported into and from the bed.	
1.2	Height-adjustable	
1.3	Foot operated lifting system for raising and lowering to assure hands free operation for caregiver	
1.4	Patients shall have the possibility to be lifted from the floor or beds	
1.5	Compact base design to allow access under low bed frames	
1.6	The lift is belt driven, runs gently, quietly and operates free from sudden movements	
1.7	Foot activated emergency stop	
1.8	Equipped with two brake castors and two straight steering castors for safe and easy patient transport	
1.9	Automated fall stop in case of components malfunction	
1.10	High capacity rechargeable batteries (min. 10 Ah) to be charged via main supply	
1.11	Magnetic battery charger connection for safety and ease of use	
1.12	Seating surfaces shall be made of a soft, durable material that is non water absorbent, easy to clean and disinfect and comfortable to sit and lay on	
1.13	Stainless steel lifting column	
1.14	Anti-corrosion treatment on all metal parts	
2	<b>Accessories, spares and consumables</b>	
2.1	All standard accessories/consumables/parts required for the proper operation of the above item shall be included in the offer.	
3	<b>Standards and Safety Requirements</b>	
3.1	USFDA or CE or TUV approved product	
4	<b>ENERGY SOURCE</b>	
4.1	Power supply: 220 – 240 VAC, 50Hz, single phase.	
5	<b>WARRANTY AND MAINTENANCE</b>	
5.1	Comprehensive warranty for 2 years.	
5.2	The spare price list of all spares and accessories (including minor) required for maintenance and repairs in future after guarantee / warranty period	

**115 Children Positioning Chair**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Description of Function</b>	
1.1	Used for initial upright standing of children in the sitting position.	
2	<b>Operational Requirements</b>	
2.1	It must be able to carry a user weighing approx. 100 Kg.	
3	<b>Technical Specifications</b>	
3.1	Shall be made of best quality wood and fitted with laminated top tray.	
3.2	Adjustable tilt angle (from 0° to 90°)	
3.3	Shall have 3 straps provided for heel, knee and pelvic support.	
3.4	Hinged knee support	
4	<b>Accessories, spares and consumables</b>	
4.1	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer. Bidders must specify the quantity of every item included in their offer (including items not specified above).	
5	<b>Standards and Safety Requirements</b>	
5.1	ISO 9001 or ISO13485:2003/AC:2007	
5.2	CE (93/42 EEC Directives), TUV or USFDA approved product certificate.	
6	<b>Warranty</b>	
6.1	Comprehensive warranty for 2 years.	

**116 Hydrotherapy Pool**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Description of Function</b>	
1.1	Hydrotherapy Pool. Shall provide a safe and relaxing space for movement therapy and water exercise. It should be large enough for the users to carry out a full rehabilitation program.	
2	<b>Technical Specifications</b>	
2.1	Freestanding, construction-free hydrotherapy Pool.	
2.2	Temperature and ventilation: The pool temperature might range between 34-35°C (92.6- 98.6°F) in winter & 31-33°C (87.4-92°F) in summer.	
2.3	Surfaces: Both areas in the pool, and around the pool & in facilities need to be non-slip, non-abrasive & easily cleaned.	
2.4	Adjustable water depth	
3	<b>Accessories, spares and consumables</b>	
3.4	Pool accessories and equipment: Under water parallel bar, Under water tread mill, Under water bike	
3.5	All equipment, such as parallel bars, stools, seats & plinths should be movable, not permanently fixed.	
3.6	patient lifts floor mounted, stainless steel construction with powder coat finish, remote control hand set, dual flip up arms, flip up foot rest, adjustable lap belt	
3.7	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer. Bidders must specify the quantity of every item included in their offer (including items not specified above).	
4	<b>Standards and Safety Requirements</b>	
4.1	ISO13485:2003/AC:2007 for Medical Devices	
4.2	CE (93/42 EEC Directives), TUV or USFDA approved product certificate.	
5	<b>Warranty</b>	
5.1	Comprehensive warranty for 2 years.	
6	<b>Documentation</b>	
6.1	List of important spare parts and accessories with their part numbers and costing.	

**117 Rigid Bronchoscope**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Technical Specifications</b>	
1.1	The tracheal and bronchoscope tubes should be made of high quality stainless steel.	
1.2	The assembly should include a HD (High Definition) / High quality (3 chip CCD video) camera head fully compatible with the viewing telescope.	
1.3	The video processor provided should be compatible with the camera head and provide a high resolution output to medical grade flat screen high definition/resolution 20 inch or greater sized video monitor.	
1.4	There tracheoscope and bronchoscope tubes should be without a distal fiber optic light carrier.	
1.5	The tracheobronchoscope tubes should be of use with proximally insertable telescopes.	
1.6	The bronchoscopes should be durable and should be able to be cleaned with commonly used sterilizing solutions without affecting the surface of the scope.	
1.7	All the accessories should be compatible with the sheath	
1.8	The complete system should be covered under warranty as per the AIIMS Jodhpur rules .	
1.9	A dedicated imported trolley for carrying the entire system and recording equipment should be provided	
1.10	The equipment should be USFDA or European CE approved	
1.11	A recording system to be provided which should have facility for recording and storage of media in both image and video format and allow transfer on removable storage (either CD or USB flash drive)	
1.12	All metallic instruments and accessories should be autoclavable	
1.13	Operating voltage - Power 220 V 50 Hz AC.	
1.14	The system should include all the other possible accessories, UPS, power cables, fiber optic cables connectors etc to make the unit fully functional.	
1.15	The system should be provided with a laptop PC (Windows 7 OS, 750 GB Hard disc drive, 8 GB RAM, Core i-7 processor)	
1.16	Price of all the accessories as mentioned should be included within the quoted price	
1.17	Rate list of all possible spares, accessories and consumables should be provided as part of the financial bid by the company.	
2	<b>Technical Specification of Equipment:</b>	
2.1	Zero degree straight forward viewing telescope with integrated fiberoptic light transmission, diameter 4.5 mm, working length of 50 cm length- 1 No.	
2.2	Zero degree straight forward viewing telescope with integrated fiberoptic light transmission, diameter 2.8 mm, working length of 44 cm - 1 No.	
3	Tracheoscope tube size 6.5 mm, length at least 30 cm- 1 No.	
4	Tracheoscope tube size 12 mm, length at least 30 cm -1 No.	
5	Tracheoscope tube size 14 mm, length at least 30 cm for application of stents -1 No.	
6	Bronchoscope tube size 6.5 mm, length at least 40 cm - 1 No.	
7	Bronchoscope tube size 11 mm for application of stents, length at least 40 cm- 1 No.	
8	Bronchoscope tube size 12 mm, length at least 40 cm-1 No.	
9	Bronchoscope tube size 14 mm, length at least 40 cm for application of stents – 1 No.	
10	Optical forceps, alligator -1 No.	
11	Optical forceps, cupped jaws for biopsy-2 Nos.	
12	Optical forceps, universal-1 No.	
13	Optical forceps for removal of coins and flat foreign body-1 No.	
14	Manual forceps alligator, diameter 2.5 mm at least 50 cm length-2 Nos.	
15	Manual forceps round cupped jaws for biopsy, diameter 2.5 mm at least 50 cm length-1 No.	
16	Manual forceps universal, diameter 2.5 mm at least 50 cm length-1 No.	
17	Manual forceps for peanuts and soft foreign bodies at least 50 cm length-1 No.	
18	Foreign body basket with handle > 50 cm length-1 No.	
19	Sponge holder forceps-1 No.	
20	Cotton applicator forceps -1 No.	
21	Insulated coagulation tube with connector for unipolar coagulation 1 No.	
22	TONN Stent applicator system for deployment of silicon stents of diameter 14- 20 mm and 11- 13 mm consisting of Folding System, Clamping Rod, Loading Rod, Introducer Tube length 42 cm, with 2-ring handle and Pusher-1 Set (Red 1 and Green 1)	
23	Dedicated forceps for opening and deployment of silicon stents- 1 No.	
24	One set of boogies.	
25	Silicone stent (3 each) : Tracheal stent with wall thickness 1.5 mm, Thin tracheal stent with wall thickness 1.0 mm, Bronchial stent with wall thickness 1.0 mm, Carina stent with wall thickness 1.0 mm, Total carina stent with wall thickness 1.0/1.3 mm	
26	Controlled Radial Expansion Balloon dilator (Wire Guided) size of 6-8 mm, 8-10mm, 10-12mm, 12-14mm-2 each.	
27	Each Balloon Inflation System for CRE Balloon-1 Set	
28	Should be accompanied with all accessories essential for the functioning of the equipment including:	
29	Prismatic Light Deflector - 5 pieces	
30	Rubber telescope guide - 20 pieces	
31	Glass window plug - 10 pieces	
32	Movable adaptor with sealing cap - 5 pieces	
33	Injection cannula for positive pressure ventilation - 5 pieces	
34	Adaptor for respirator - 10 pieces	
35	Instrument guide - 10 pieces	
36	Rubber tipped suction catheter (4 mm) of at least 50 cm length with adaptor- 10	
37	Adjustable head rest for positioning of patients head during the procedure -1	
38	Flexible suction catheters - at least 100	
39	Cleaning brushes - 5	
40	Equipment carrying case (for the tubes and forceps) - 1	
41	Anti fog solution -30 ml - 15 bottles	
42	High resolution 3 chip video camera CCU and head - 1 No. [3x1/2" CCD image sensor chip, Resolution : 750 lines - 800 lines horizontal. Picture element = 752 (h) x 582(v) pixels per chip, Min. sensitivity : 3 lux (f=1.4), AGC: + 18 db, signal tonoise ratio > 60 db. Camera should have integrated parfocal zoom lens, F=25-50mm, It should have DV output and image processing module and it should have image freeze function, Programmable control buttons on camera head for controlling, Gain , white balance shutter speed, video printer and recorder, Keyboard input . for data entry through built in character, Generator, Camera should be compatible with FBAS, S-VHS and RGB, Manual or automatic exposure control (1/50 sec. —1/10000), Should have automatic white balance with storage functions, For two white balance values, Unit should be certified to IEC 60601-1, CE according to MDD.]	
43	LED (175-300 W) light source with cable compatible with the unit -1 No.	
44	High resolution medical grade flat screen 20 inch monitor for the system -1 No.	
45	<b>Operating Environment</b>	
46	The unit shall be capable of operating in ambient temperature of 15°C-35°C and relative humidity of 10-95%	
47	The unit shall be capable of being stored continuously in ambient temperature of -5°C -40°C and relative humidity of 10-95%	

<b>Power supply:</b>	
Input power supply: 220/240 V AC, 50Hz single phase schuko plug	
Power supply: 220 – 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metres in length.	
<b>Standards &amp; Safety Requirements</b>	
Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
CE 03/02 EEC Directives) or USFDA or TUV approved product certificate.	
<b>Training</b>	
Must provide user & service training.	
<b>Warranty</b>	
Comprehensive warranty for 2 years.	
<b>Maintenance Service During Warranty Period</b>	
Supplier must ensure planned preventive maintenance (PPM) along with corrective/breakdown maintenance whenever required.	
<b>Documentation</b>	
User (Operating) manual in English Should provide 2 sets(hardcopy and soft-copy)	
Service (Technical / Maintenance) manual in English Should provide 2 sets(hardcopy and soft-copy)	
List of important spare parts, accessories and consumables with their part numbers and costing.	

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**Craniotomy Surgical Set**

No.	Item Specifications	Fill your Specification
	<b>Manufacturer Name:</b>	
	<b>Model No.:</b>	
	<b>Country of Origin:</b>	
	<b>Technical Specifications</b>	
	Rampley sponge holding forceps 230 mm QTY:5	
	B.P. handle no. 3 QTY:6	
	B.P. handle no. 4 QTY:6	
	Towel clips 3/12" QTY:12	
	Towel clips 5" QTY:12	
	Allis Classic Tissue Forceps 5" QTY:2	
	Sargent dural motor elevator, with groove for stellate incisions. QTY:2	
	Pennbacker Periosteal Elevator, Sharp, 6 mm, 1/4 in. wide, curved. QTY:1	
	Farabeuf Periosteal elevator, Straight, 160 mm, 6 <sup>1/4</sup> " QTY:1	
	Farabeuf Periosteal elevator, Curved, 160 mm, 6 <sup>1/4</sup> " QTY:1	
	Adson periosteal elevator Straight, 8 mm QTY:1	
	Adson periosteal elevator Curved, 7 mm QTY:1	
	Cottle Periosteum Elevator, 195 mm, 7 <sup>3/4</sup> " 8 mm QTY:1	
	Cottle Periosteum Elevator, 170 mm, 7 <sup>3/4</sup> " 4 mm QTY:1	
	Schneider Periosteal Elevator, 175 mm, 7", 13 mm QTY:1	
	Halstead- Mosquito Forceps, Straight, 125 mm QTY:20	
	Halstead- Mosquito Forceps, Curved, 125 mm QTY:20	
	Style no. 1, 7-1/4" (18.4 cm), double end, 6 mm sharp cut and 6 mm blunt dissector QTY:1	
	Style No. 2, Double ended, curved dissector and wax packer, Overall length 73/8in (18.7cm) QTY:1	
	Style no. 3, Full Curve and Tamper, 7 <sup>1/2</sup> " 6mm QTY:1	
	Style No. 4, Light, slightly curved, Overall length 8 <sup>1/2</sup> " (21.6cm) QTY:1	
	Style no. 5, Double End, Slight Curve, Blunt QTY:1	
	DANDY Scalp Hemostatic Forceps, curved on side, 5 1/2" (140mm), bright finish serrated QTY:50	
	MICRO-ADSON, Micro Forceps serrated jaw, 120 mm, 4 3/4" QTY:1	
	MICRO-ADSON, Micro Forceps serrated jaws 150 mm, 6" QTY:1	
	MICRO-ADSON-BIEMER, Micro Forceps 1 x 2 teeth, 120 mm, 4 3/4", Tip Width: 1.7mm QTY:1	
	MICRO-ADSON, Micro Forceps 1 x 2 teeth, 120 mm, 4 3/4" QTY:1	
	MICRO-ADSON, Micro Forceps 1 x 2 teeth, 150 mm, 6" QTY:1	
	MICRO-ADSON, Micro Forceps 1 x 2 teeth, 150 mm, 8" QTY:1	
	Adson Bayonet Shaped Dissection Forceps, serrated, 1x2 teeth 191 mm (7 1/2") QTY:1	
	Cushing Bayonet Tissue Forceps, dissecting end, 197 mm. (7 3/4 in.), 1 x 2 teeth, stainless steel QTY:2	
	Adson bayonet shaped dressing forceps with fine serrated ends, 178mm (7"). QTY:2	
	Cushing bayonet dressing forceps, dissecting end, 184mm (7 1/4") stainless steel. QTY:2	
	Cushing Bayonet Dressing Forceps, dissecting end, 197 mm. (7 3/4 in.), stainless steel. QTY:2	
	Hudson brace non-glare 10" stainless steel Snap chuck system QTY:1	
	Hudson Brace Cerebellar Extension, 4" (10.2 cm) QTY:1	
	Cushing Perforator 18mm QTY:1	
	Cushing Perforator 12mm QTY:1	
	Cushing Perforator 15mm QTY:1	
	Cushing Perforator 17mm QTY:1	
	Cushing Perforator 18mm QTY:1	
	Cushing Perforator 20mm QTY:1	
	Cushing Burrs, conical, Non-glare finish 9mm QTY:1	
	Cushing Burrs, conical, Non-glare finish 11mm QTY:1	
	Cushing Burrs, conical, Non-glare finish 13mm QTY:1	
	Cushing Burrs, conical, Non-glare finish 16mm QTY:1	
	Cushing Burrs, conical, Non-glare finish 17mm QTY:1	
	Cushing Burrs, conical, Non-glare finish 19mm QTY:1	
	McKenzie Perforator 13mm QTY:1	
	Hudson Downs Burr 16 mm (conical) QTY:1	
	Hudson Downs Burr 22mm (Spheric) QTY:1	
	Drill bit (compatible with the Hudson Brace) 2 mm QTY:1	
	Skull Trephines with dura guard, graduated scale and retractable centering drill, high speed steel blade Length: 3 3/4" (95mm) Diameter: 2" (51mm) QTY:1	
	Skull Trephines with dura guard, graduated scale and retractable centering drill, high speed steel blade Length: 3 3/4" (95mm) Diameter: 2 1/4" (61mm) QTY:1	
	Skull Trephines with dura guard, graduated scale and retractable centering drill, high speed steel blade Length: 3 3/4" (95mm) Diameter: 2.5" (51mm) QTY:1	
	Gigli saw guide and protector, stainless steel, Non-glare finish QTY:4	
	Gigli Saw Handle stainless steel QTY:6	
	SINGLE PRECISION CUT GIGLI SAW WIRE non-glare finish QTY:100	
	Adson Rectangular dural Hook, sharp, fine, 191 mm. (7 1/2 in.) QTY:2	
	FRAZIER Type Dural Hook, sharp, Length: 5"(127mm), Tip Diameter: 2mm QTY:2	
	FRAZIER Type Dural Separator, tapered blade width 1/16" to 1/8" (2 to 3mm), Blade Width: 3/8"(13mm), Total Length: 6 1/2"(165mm) QTY:2	
	DANDY Type Nerve Hook, straight, blunt, Hook Depth: 1/8"(3mm) QTY:2	
	Total Length: 7"(178mm) Tip Diameter: 13mm QTY:2	
	DANDY Nerve Hook, straight, blunt Hook depth: 1/8" (3mm) QTY:2	
	Total length: 8 5/8" (219mm) Tip diameter: 1.5mm QTY:2	
	Mayo-Hegar Needle Holder, Box Joint, 152mm (6"). For 0 to 2-0 sutures, Tungsten carbide jaws gold plated bows QTY:2	
	MAYO'S HEGGAR Needle Holder, Box Joint, (8"). For 0 to 2-0 sutures, Tungsten carbide jaws gold plated bows QTY:2	
	Neurosurgery Needle Holder, 6" (152mm). For 3-0 to 5-0 sutures, Tungsten carbide jaws gold plated bows QTY:2	
	Neurosurgery Needle Holder, 8" (200mm). For 3-0 to 5-0 sutures, Tungsten carbide jaws gold plated bows QTY:2	
	WETTLANER SHARP self retaining retractor, 165mm, 6 1/2" non-glare finish QTY:1	
	Cone retractor, self-retaining with hinged arms, 165mm (6 1/2") QTY:1	
	Jansen self-retaining Retractor, with blunt blades, 114mm, (4 1/2") QTY:2	
	Mollison self-retaining retractor, curved, 165mm (6 1/2") QTY:1	
	Mollison self-retaining Retractor curved 165 mm. (6 1/2 in.) small size 2 x 2 prongs, for children. QTY:1	
	Cairns "Rake" Scalp Retractor 4 prong, sharp, semi sharp, blunt 19 mm. (3/4 in.) wide, 210 mm. (8 1/4 in.) long. QTY:1	
	ADSON cerebellar retractors, self retaining Total Opening: 4 1/2" (114mm) QTY:2	
	4x4 sharp prongs, straight shaft Blade Width: 5/8" (16mm) Blade Depth: 7/8" (22mm) Length: 7 1/2" (191mm) QTY:2	
	ADSON cerebellar retractors, self retaining Total Opening: 4 1/2" (114mm) QTY:2	
	4x4 sharp prongs, angular shaft Blade Width: 5/8" (16mm) Blade Depth: 7/8" (22mm) Length: 7" (178mm) QTY:2	
	ANDERSON-ADSON Scalp retractors, self retaining Total Opening: 4 1/2" (114mm) QTY:2	
	4x4 sharp prongs, angular shaft Blade Width: 3/4" (19mm) Blade Depth: 5/8" (16mm) Length: 7 1/2" (191mm) QTY:2	
	MISKIMON Cerebellar Retractor, angled arms, 7 x 7 sharp prongs. Total length: 7 1/2" (191mm), Prong width: 1 1/4" (44mm) Prong depth: 1 1/4" (32mm), Total opening: 4" QTY:2	
	STILLE, 230 mm, 9", bone Rongeur. QTY:1	
	Luer-Jansen Rongeur, double action, slightly curved on flat, light model, 4mm. bite, 197mm (7 1/2"). QTY:1	
	Sargent Rongeur, double action, curved on flat, 229mm (9"). QTY:1	
	LUER Type Bone Rongeur, Bite 1/2"(6mm), Length 7"(178mm), Straight. QTY:1	
	LUER Type Bone Rongeur, Bite 1/2"(6mm), Length 7"(178mm), Curved. QTY:1	
	BEYER (LEMPERT) Type Rongeur, Straight, Curved, Bite 1/16"(2mm), Length 6 1/8"(156mm) QTY:1	
	ZAUFAL-JANSEN Type Rongeur, double-action, curved, Bite: 4mm x 30mm, Length: 6 3/4" (171mm) QTY:1	
	BACON Cranial Rongeur, angular Bite: 3/16" (5mm) Length: 7 3/4" (197mm) QTY:1	
	Echlin (2 x 10mm), 9", bone Rongeur. QTY:1	
	Echlin (3 x 10mm), 9", bone Rongeur. QTY:1	
	FRYKHOLM, 230 mm, 9", bone Rongeur. QTY:1	
	LEKSELL-STILLE, 240 mm, 9 1/2", bone Rongeur. QTY:1	
	Suction Regulating Valve QTY:2	
	Subsiding Tear Drop shaped Hole Micro suction tips different sizes. Set of eight, Non-glare finish, 1.5 mm to 5 mm. Length: 9 1/2" QTY:1set	
	CONE Ventricular Needles, graduated, 2 holes, Luer Lock Hub Length: 3 3/8" (89mm) (i) 14G, (ii) 16G, (iii) 18G. QTY: 6pair	
	MAUIS Type Neurological Scissors, curved, semi-sharped points, Length: 7"(178mm) QTY:2	
	MAUIS Type Neurological Scissors, curved, semi-sharped points, Length: 7"(178mm) Tungsten carbide jaws gold plated bows QTY:2	
	Schmieden (or Taylor) dural scissors, angular with probe-pointed under blade, screw-joint, 146mm (5 3/4"). QTY:2	
	Metzenbaum dural scissors, straight, 178mm (7") Tungsten carbide jaws gold plated bows QTY:2	
	Julian Taylor Quiver or Scabbard for holding diathermy instruments. QTY:4	
	Yasargil Galea Fish Hooks with spring, 16" (410mm), 9mm QTY:10	
	MICRO SCISSORS (SPRING TYPE) BAYONET-SHAPED YASARGIL MODIFIED MEHTA Micro-scissors St 250mm, 10" QTY:1	

MICRO SCISSORS (SPRING TYPE) BAYONET-SHAPED, YASARGIL, Micro scissors upwards curved 225 mm, 9" QTY:1
MICRO SCISSORS (SPRING TYPE) BAYONET-SHAPED, YASARGIL, Micro scissors straight, 225 mm, 9" QTY:1
MICRO SCISSORS (SPRING TYPE) BAYONET-SHAPED, YASARGIL, Micro scissors upwards curved, 225 mm, 9" QTY:1
MICRO FORCEPS, BAYONET-SHAPED, YASARGIL, Micro Forceps, Tips 0.6 mm, 220mm, 8 3/4" QTY:2
MICRO FORCEPS, BAYONET-SHAPED, YASARGIL, Micro Forceps, Tips 0.9 mm, 220 mm, 8 3/4" QTY:2
FORCEPS FOR GRASPING TISSUE, TUMORS ETC. YASARGIL, Tumor Grasping Forceps Jaw flat, serrated, 220 mm, 8 3/4", 3mm, 5mm, 7mm QTY:2
Brisham Brain Tumor Forceps, Diameter of ring Jaw 3/8" (10mm), Length: 7 3/8" (187mm) QTY:2
Landolt Tumor forceps 160 mm, Ø 9 mm QTY:1
<b>Standards &amp; Safety Requirements</b>
Must submit ISO13485:2003/AC:2007 for Medical Devices AND
CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.
<b>Warranty</b>
Comprehensive warranty for 2 years.

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**High Speed Drill Craniotomy Surgical Set**

No.	Item Specifications	Fill your Specification
<b>Manufacturer Name:</b>		
<b>Model No.:</b>		
<b>Country of Origin:</b>		
<b>Technical Specifications</b>		
1. High Speed Electrical Drill system with Variable speed setting from 10,000 to ≥ 80,000 rpm.		
2. Should have touch screen display panel.		
3. Should automatically display various information like motor type, maximum rpm and current rpm level.		
4. Console to allow visible display and setting of maximum speed limit.		
5. Should have provision to attach two motor at the same time.		
6. Should have customizable settings like Acceleration and stopping characteristics for individual motors, oscillation angle.		
7. Should have single pedal foot control for varying the speed and forward & reverse rotation.		
1. System should give audible beeps / alerts while in reverse action.		
2. No inline Lubrication should be required to run the motor.		
3. Should have integrated irrigation pump to allow precise adjustments of the pump flow.		
4. Irrigation spray nozzle should be supplied with all hand-piece attachments.		
5. Should have provision to use various saw system.		
6. Should have quick release and lock system for tools.		
7. A perforated sterilization basket of SS should be supplied. The sterilization basket should have racks to hold the cables, motor and various hand-pieces.		
8. Attachments should have tapered design for better visibility under microscope.		
9. The design should be ergonomic with ease of use in confined spaces like trans-sphenoidal pituitary and minimally invasive spine surgery.		
10. There should be easily visible markings to identify matching attachments and tools.		
11. System should have quick connect and lockable attachment system.		
12. System should have common burrs/bits for different hand pieces (straight/Bayoneted) with adjustable lengths of the burrs.		
<b>II. Accessories</b>		
<b>A. Perforator set</b>		
a. Should have a perforator driver with Hudson Chuck system		
b. Reusable cranial perforators for adult and pediatric sizes (10 each) to be supplied.		
<b>B. Craniotomy set</b>		
a. Should have non-fixed footed attachments (dural guard) for craniotomy in pediatric and adult sizes (one each)		
b. One non-footed large attachment for midline spinal laminotomy.		
c. Corresponding cutter tools should be supplied in the following manner:		
i. Adult: 30 (for a)		
ii. Pediatric: 10 (for a)		
iii. Large: 05 (for c)		
<b>C. Osteotomy saw set</b>		
a. Should be supplied saw system with all attachments necessary to perform cranial osteotomies for skull base, orbital and neurospinal surgeries.		
b. It should also have tools to harvest bone grafts from ribs or iliac crest.		
c. Two set of necessary blades to be supplied.		
<b>D. Suture hole</b>		
a. Should be supplied with necessary attachments and tools to make small suture holes in craniotomy flaps and spinal laminae.		
b. The corresponding tool to be supplied in 10 nos.		
<b>E. Burr system</b>		
a. Should have short (approx. 8 to 10 cm) and long (approx. 13 to 15 cm) straight and bayonet attachments – one each.		
i. with corresponding cutting burrs of 2mm, 4mm and 6mm heads – 10 each		
ii. With corresponding diamond burrs of 2mm, 3mm and 5mm – 5 each		
b. Should have angled long (approx. 14 to 16 cm +/-1) and short (approx. 10 to 12 cm +/-1) attachments of less than 5mm outer thickness for use in trans-sphenoidal, trans-oral, micro-spinal and endoscopic surgeries (preferably of variable length) – one each.		
i. with corresponding cutting burrs of 1mm, 2mm and 4mm heads – 5 each		
ii. With corresponding diamond burrs of 1mm, 2mm and 4mm – 5 each		
<b>Operating Environment</b>		
The unit shall be capable of operating in ambient temperature of 15°C-35°C and relative humidity of 10-95%		
The unit shall be capable of being stored continuously in ambient temperature of -5°C -40°C and relative humidity of 10-95%		
<b>Power supply:</b>		
Input power supply: 220/240 V AC, 50Hz single phase schuko plug		
Power supply: 220 – 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metres in length.		
<b>Standards &amp; Safety Requirements</b>		
Must submit ISO13485:2003/AC:2007 for Medical Devices AND		
CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.		
<b>Training</b>		
Must provide user & service training.		
<b>Warranty</b>		
Comprehensive warranty for 2 years.		
<b>Maintenance Service During Warranty Period</b>		
Supplier must ensure planned preventive maintenance (PPM) along with corrective/breakdown maintenance whenever required.		
<b>Documentation</b>		
User (Operating) manual in English Should provide 2 sets(hardcopy and soft-copy)		
Service (Technical / Maintenance) manual in English Should provide 2 sets(hardcopy and soft-copy)		
List of important spare parts, accessories and consumables with their part numbers and costing.		

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**Neurosurgical Microscope**

No.	Item Specifications	Fill your Specification
<b>Manufacturer Name:</b>		
<b>Model No.:</b>		
<b>Country of Origin:</b>		
<b>Technical Specifications</b>		
<b>Working distance:</b> 200-620 mm or better, continuously variable through motorized multifocal lens, activated through Handgrips and through control panel. Manually adjustable override.		
<b>Magnification range:</b> Minimum range upto 20x or better		
<b>Focusing:</b> Motorized via multifocal lens activated through Hand or foot switch & Touch screen control panel. Manually adjustable automatic focusing.		
<b>Eyepiece:</b> 12.5x widefield with dioptic setting +5D to – 5D.		
<b>Light Source:</b> 300W Xenon illumination with integrated 300W Xenon back-up with fast action lamp change over. The Microscopes illumination system must provide an additional light beam path to brighten up shadowed areas in the field of view.		
<b>Illumination Field Diameter:</b> Should have built in automatic zoom- synchronized illumination field diameter, with manual override and reset feature.		
<b>Automated Illumination control:</b> Should have automatic illumination. Brightness control should be linked to working distance. Illumination also can be controlled by hand switch or foot switch.		
<b>Binocular Tube:</b> Binocular tube for main surgeon which can be pushed and pulled offering flexible positioning, added magnification and integrated rotate functionality. Easily compensate for eye level differences between the surgeon and the assistant when operating in a face to face configuration by simply rotating the tube.		
<b>Balancing:</b> The system must provide a one touch automatic balancing of all system axes without any manual interaction or axis adjustments.		
<b>Beam Splitter:</b> Integrated Beam Splitter ( Not Visible from outside/ separate attachment).		
<b>Camera:</b> Fully integrated 3 CMOS HD Video Camera so that maximum resolution will display & record.		
<b>Display:</b> Full HD Medical grade touchscreen display system attached with the microscope system(No External monitor/ detachable monitor will be acceptable).		
<b>Recording:</b> Full HD Inbuilt video recording system with integrated HDD of at least 10 TB.		
<b>Stereo Co- observer:</b> Should have stereo co observation attachment for side assistant and the attachment should not move in case the head is tilted in forward or backward direction by the main surgeon.		
The microscope must offer integrated 360° rotatable tube for better ergonomic observation.		
Binocular should have PD adjustment knob with range of 35 mm to 75 mm.		
Binocular should have movement lock in any angle.		
<b>XY Movement:</b> For precise positioning of the microscope, the system must offer a motorized XY movement, providing in any(even horizontal) position of the optical axis a correct XY movement.		
<b>Remote Access:</b> The system must provide an interface and a function for fast internet remote diagnosis to be operated via the central touchscreen user interface.		
<b>Auto Draping:</b> Draping of the system must be facilitated by an automatic air vacuum/Auto Drape.		
<b>Damping Correction:</b> System should have robotic control		

active vibration damping mechanism to avoid disturbing vibrations.
<b>Surgical Fluorescence:</b> The Tumor Sodium fluorescence mode, where fluorescence objects are emphasized in a greenish- yellow colour and the fluorescence can be observed looking through the eyepiece while simultaneously object that are not fluorescence almost completely keep their natural color. The system must give the excitation in the wavelength range from 460 to 500nm and observation in the wavelength range from 540 to 690 nm as it is comfortable to the observer along with distinguish the tumor cell.
System should have verification possibilities of vascular anastomosis & vascular clipping verification.
Detachable mouth switch accessory for controlling the movement of microscope.
<b>Operating Environment</b>
The unit shall be capable of operating in ambient temperature of 15°C-35°C and relative humidity of 10-95%
The unit shall be capable of being stored continuously in ambient temperature of -5°C -40°C and relative humidity of 10-95%
<b>Power supply:</b>
Input power supply: 220/240 V AC, 50Hz single phase schuko plug
Power supply: 220 – 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metres in length.
<b>Standards &amp; Safety Requirements</b>
Must submit ISO13485:2003/AC:2007 for Medical Devices AND
CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.
<b>Training</b>
Must provide user & service training.
<b>Warranty</b>
Comprehensive warranty for 2 years.
<b>Maintenance Service During Warranty Period</b>
Supplier must assure planned preventive maintenance (PPM) along with corrective/breakdown maintenance whenever required.
<b>Documentation</b>
User (Operating) manual in English Should provide 2 sets(hardcopy and soft-copy)
Service (Technical / Maintenance) manual in English Should provide 2 sets(hardcopy and soft-copy)
List of important spare parts, accessories and consumables with their part numbers and costing.

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## Basic Vascular Surgery Set

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Technical Specifications</b>	
	B.P. Handle 7L QTY:2	
	Dissecting Forceps Russian 8" QTY:2	
	Dissecting Forceps Angled Atr. 8" QTY:1	
	Cardipetia Gamula Lt. & Rt. QTY:1	
	Needle Holder Vascular 10" TC QTY:2	
	Heavy Duty Castroviejo Needle Holder For 2-0 Needle, 19 CM Idpc QTY:1	
	Heavy Duty Castroviejo Needle Holder For 2-0 Needle, 23 CM Idpc QTY:1	
	Valsellum QTY:2	
	Blunt Hook 10" QTY:2	
	Valve Ronguers Assorted Upward QTY:1	
	Valve Ronguers Down Ward QTY:1	
	Valve Ronguers Straight QTY:1	
	Ross Aortic Valve Retractors Assorted QTY:2	
	V.S.D. Retractor Set of 5 QTY:5	
	Coolley Retractor, Sizes, Small, Medium, Large, One Each QTY:3	
	Scissors Calcified Tissue CD, 9" QTY:1	
	Chest Tube Holding Forceps QTY:2	
	Four Prong (Rake) Retractors Volkman QTY:2	
	Langenback Retractor Small QTY:2	
	Langenback Retractor Medium QTY:2	
	Cerme's Retractor QTY:2	
	Allis Forceps 8" QTY:6	
	Scissors Calcified Tissue CD, 9" QTY:1	
	Self Retaining Retracto 4 Pronged, Small QTY:2	
	Self Retaining Retracto 4 Pronged, Medium QTY:2	
	Self Retaining Retracto 4 Pronged, Large QTY:2	
	Four Bladed Chest Spreader, Morse, Large QTY:1	
	Four Bladed Chest Spreader, Morse, Medium QTY:1	
	Needle Holders, Ryder, TC, 7" QTY:1	
	Needle Holders, Ryder, TC, 8" QTY:1	
	Needle Holders, Mayo Hegar, TC, 8" QTY:1	
	Needle Holders, Mayo Hegar, TC, 9" QTY:1	
	Debaquey Forceps, 1 mm Tip, 8" QTY:2	
	Debaquey Forceps, 2 mm Tip, 8" QTY:4	
	Wire Holder Twister 8" TC QTY:2	
	Wire Cutter 7" SS QTY:1	
	Scissor, Curved, TC Mayo, 7" QTY:1	
	Scissor, Curved, TC Metzgenbaum, 7" QTY:1	
	Scissor, Curved, TC Metzgenbaum, 8" QTY:1	
	Scissor, Straight, TC, Mayo 7" QTY:1	
	Scissor, Straight, TC, Mayo 8" QTY:1	
	Kidney Tray 12" QTY:2	
	Forward Scissor 45 Degree, Spring Action, Round Handle, TC 7" QTY:2	
	Backward Scissor 125 Degree, Spring Action, Round Handle, TC 7" QTY:2	
	<b>Standards &amp; Safety Requirements</b>	
	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
	<b>Warranty</b>	
	Comprehensive warranty for 2 years.	

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## Cardiopulmonary Bypass Machine

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Technical Specifications</b>	
	Should have 4 pump console: 3 single roller pumps and 1 twin roller pump module	
	.Twin roller pump should have selectable ratio of blood and cardioplegia from 1:1 to 1:20	
	Should have direct drive pumps and touch screen technology on pump heads.	
	. Console should be compatible to integrate an additional centrifugal pump module	
	Air-oxygen blender with hoses and flow meter should be provided.	
	. Each pump should have programmable modes of operation as: Arterial, Arterial pulsatile, cardioplegia, slave 1, slave 2,pump sucker, auxiliary and free	
	Pumps should be operable in clockwise and counter clockwise direction.	
	It should have a precise and lockable central occlusion knob	
	Should have a separate cardioplegia monitor unit below the system control panel.	
	Cardioplegia monitoring unit should display cardioplegia data including volumes, ratio, time, pressure and temperature	
	Each roller pump should be capable of running on 24 V supply with a transformer in the console.	
	Roller pumps should be easy to remove and re assemble.	
	Should have an emergency battery back up for atleast 90min for all the pumps with all necessary safety systems and accessories	
	Transitioning from mains to back up power should not require any action from the user	
	Level and bubble detector should be provided with the unit	
	Bubble detector should detect bubbles of minimum 5mm diameter	
	Unit should have the following parameters monitoring facility:pressure(for 4 pressure display), Time(3 re settable timers with 1 real time display), Temperature monitor(temperature display), cardioplegia delivery(Total volume, actual volume, time, pressure of delivery), Temperature control of heater cooler unit.	
	Should be compact & transportable	
	Should have a flexible LED lamp, which is water resistant and provide natural white light	
	Should have a multi-positional system control panel	
	All alarms and errors should be acoustically represented	
	A single button to silence and alarm should be incorporated	
	Remote control for the heater cooler unit to allow control the patient temperature.	
	All pumps must be rotatable by 15 degree increments upto 180 degree or 240 degrees	
	Continuous online blood parameter monitoring	
	System must have provision to add Mast Pumps	
	<b>Heater Cooling Unit:</b>	
	Unit should have 3 tanks. Machine must be capable of independently controlling 3 separate temperatures cooling and warming patient cardioplegia blanket	
	Water temperature should be regulated independently	
	Main and cardioplegia should be separated in two tanks to ensure fast temperature adjustments of the two circuits and allow the availability of cold cardioplegia	
	<b>2 Operating Environment</b>	
	2.1 The unit shall be capable of operating in ambient temperature of 10°C-45°C and relative humidity of 10-95%	
	2.2 The unit shall be capable of being stored continuously in ambient temperature of -20°C -60°C and relative humidity of 10-95%	
	<b>3 Power supply:</b>	
	3.1 Input power supply: 220/240 V AC, 50Hz single phase schuko plug	
	<b>4 Standards and Safety Requirements</b>	

4.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
4.2	CE (93/42 EEC Directives) or USFDA approved product certificate.	
4.3	Electrical safety conforms to standards for electrical safety IEC-60601-1 General Requirements and IEC-60601-2-25	
5	<b>Training</b>	
5.1	Must provide user & service training.	
6	<b>Warranty</b>	
6.1	Comprehensive warranty for 2 years after acceptance.	
7	<b>Maintenance Service During Warranty Period</b>	
7.1	Supplier must ensure planned preventive maintenance (PPM) along with corrective/breakdown maintenance whenever required.	
8	<b>Documentation</b>	
8.1	User (Operating) manual in English Should provide 2 sets(hardcopy and soft-copy)	
8.2	Service (Technical / Maintenance) manual in English Should provide 2 sets(hardcopy and soft-copy)	
8.3	List of important spare parts, accessories and consumables with their part numbers and costing.	

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Laser Lithotripsy System		
No.	Item Specifications	Fill your Specification
	<b>Manufacturer Name:</b>	
	<b>Model No.:</b>	
	<b>Country of Origin:</b>	
	<b>Technical Specifications</b>	
	<b>1. Laser System</b>	
	1. It should be able to fragment calculi of any size in the bladder, ureter or kidney and any stone fragment.	
	2. It should have power output minimum of 30 watts.	
	3. It should have repetition rate of 5 -25 Hz.	
	4. It should have Energy per Pulse of 0.5 – 3.5 joules	
	5. It should have pulse duration of at least 500 microseconds.	
	6. It should have Green – aiming beam of 1.0 mw at 532 nm, variable intensity settings.	
	7. It should have closed loop self-contained water to air exchanger cooling system.	
	8. It should be useable with single phase 230 V AC 50/ 60 HZ.	
	9. It should have a shield or self safety mechanism to protect the Laser machine from fiber misalignment or misfire.	
	10. List of accessories are given below. The rate for the same shall be offered separately in the BOQ and will be taken for evaluation:	
	a. 365 Micron Reusable, Flexible Fiber	
	b. 200/230 micron reusable, flexible fiber	
	c. 365 Micron Stripping and cleaving (set)	
	d. 200/230 micron stripping and cleaving (set)	
	e. Fibre Inspection Scope (If required for the offered model of equipment, it shall be provided)	
	f. Ceramic Scissors/ diamond cutter	
	11. Should supply suitable UPS along with machine and should have minimum back up of 30 minutes	
	<b>Operating Environment</b>	
	The unit shall be capable of operating in ambient temperature of 15°C-35°C and relative humidity of 10-95%	
	The unit shall be capable of being stored continuously in ambient temperature of -5°C -40°C and relative humidity of 10-95%	
	<b>Power supply:</b>	
	Input power supply: 220/240 V AC, 50Hz single phase schuko plug	
	Power supply: 220 – 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metres in length.	
	<b>Standards &amp; Safety Requirements</b>	
	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
	<b>Training</b>	
	Must provide user & service training.	
	<b>Warranty</b>	
	Comprehensive warranty for 2 years.	
	<b>Maintenance Service During Warranty Period</b>	
	Supplier must ensure planned preventive maintenance (PPM) along with corrective/breakdown maintenance whenever required.	
	<b>Documentation</b>	
	User (Operating) manual in English Should provide 2 sets(hardcopy and soft-copy)	
	Service (Technical / Maintenance) manual in English Should provide 2 sets(hardcopy and soft-copy)	
	List of important spare parts, accessories and consumables with their part numbers and costing.	

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ICU Bed Five Movements		
No.	Item Specifications	Fill your Specification
	<b>Manufacturer Name:</b>	
	<b>Model No.:</b>	
	<b>Country of Origin:</b>	
	<b>Technical Specifications</b>	
	1. Bed should have Dual Pedestal Design.	
	2. Should have built in Bed extender of 200mm for long patients.	
	3. Tuck away side rails with embedded controls.	
	4. Electrically operated controls should have lock out facility for electric controls at foot end	
	5. Backrest & leg section emergency release (CPR)	
	6. Should have Trendelenburg & covered with bed cover made of AB for the frequent disinfections and washing	
	7. Synchronized command for bed spring bars with inclination - backrest – 75 degree and above & Femur rest 25-30 degree	
	8. Should have electric backrest and pelvic sections with simultaneous movement	
	9. Should have complying to international standards with accumulated power 1.5 degree 70 VA, electrical current protection class 1, shock protection level type B.	
	10. Release lever for the side rails with four sectors	
	11. Protection against water invasion	
	12. Should have following parameters:	
	a. Length > 210 cm	
	b. Width > 85 cm	
	c. Height adjustment: 40-85 cm	
	d. Back section 0-90	
	e. Leg Section: 0-25	
	f. Trendlenberg: 10-20	
	g. Reverse Trendlenberg: 5-10	
	13. Should have collapsible /tuck – away side rails	
	14. Should have double X-ray back rest with Cassette tray	
	15. Should have facility to fix IV rod at all the four corners and place for fixing accessories	
	16. Should have castors with central braking system and steering facility	
	17. Should be radiolucent from Neck through Pelvic region	
	18. Should have bumpers at all 4 corners	
	19. Should be provided with:	
	a. Bed ends fixed to the frame	
	b. Side rails	
	c. IV rods	
	d. Mattress	
	e. X-ray cassette tray, urine bottle holder, drainage bottle holder	
	20. Load bearing capacity for the bed should be at least 220kg or more, should have 90 degree upright backrest for chest Imaging.	
	21. Electrical safety conforms to standards for electrical safety IEC-60601/IS-13450	
	22. Should have Dual Castors of 18-20 cm	
	23. Electric shock protection facility	
	24. Zone controls in Bed to track movement of patient on Bed (Optional)	
	<b>Operating Environment</b>	
	The unit shall be capable of operating in ambient temperature of 15°C-35°C and relative humidity of 10-95%	
	The unit shall be capable of being stored continuously in ambient temperature of -5°C -40°C and relative humidity of 10-95%	
	<b>Power supply:</b>	
	Input power supply: 220/240 V AC, 50Hz single phase schuko plug	
	Power supply: 220 – 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metres in length.	
	<b>Standards &amp; Safety Requirements</b>	
	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
	<b>Training</b>	
	Must provide user & service training.	
	<b>Warranty</b>	
	Comprehensive warranty for 2 years.	
	<b>Maintenance Service During Warranty Period</b>	
	Supplier must ensure planned preventive maintenance (PPM) along with corrective/breakdown maintenance whenever required.	
	<b>Documentation</b>	
	User (Operating) manual in English Should provide 2 sets(hardcopy and soft-copy)	
	Service (Technical / Maintenance) manual in English Should provide 2 sets(hardcopy and soft-copy)	
	List of important spare parts, accessories and consumables with their part numbers and costing.	

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Bed Mattress		
No.	Specifications	Fill your Specification
	<b>Manufacturer Name:</b>	
	<b>Model No.:</b>	
	<b>Country of Origin:</b>	
	<b>1 Description of Function</b>	

1.1	Mattress is to provide a comfortable platform to rest or sleep upon the bed.	
<b>2</b>	<b>Operational Requirements</b>	
2.1	A mattress for hospital bed.	
<b>3</b>	<b>System Configuration</b>	
3.1	Hospital Mattress, two sections.	
<b>4</b>	<b>Technical Specifications</b>	
4.1	The mattress negotiable with hospital beds having an overall approximate dimension of not less than 1980mm length, 910mm width.	
4.2	It shall be fire retardant antibacterial treated high density approx. 40kg/m3 PU foam mattress.	
4.3	The mattress shall have thickness of at least 100mm.	
4.4	Mattress with two sections shall be designed to bend with the positioning of the bed when the backrest and foot section of the bed are adjusted.	
4.5	The weight capacity of the mattress shall be more than 100kg.	
<b>4.6</b>	<b>Mattress Cover:</b>	
	The mattress shall come with a zipped fire retardant antibacterial, antistatic, acid resistance, waterproof and washable vinyl or vinylized nylon cover. It shall be designed to provide ventilating airflow over the patient's skin. The zip shall be a heavy-duty/large toothed synthetic zipper to enable inspection of the inner foam and totally covered by a flap extending over the zip to prevent ingress of fluids into the actual mattress and allow for replacement.	
<b>5</b>	<b>Operating Environment</b>	
5.1	The product offered shall be designed to be stored and to operate normally under Climate, Temperature, Humidity, etc. for Sudan.	
<b>6</b>	<b>Warranty</b>	
6.1	Comprehensive warranty for 2 years after acceptance.	

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## Emergency Trolley

No.	Item Specifications	Fill your Specification
	<b>Manufacturer Name:</b>	
	<b>Model No.:</b>	
	<b>Country of Origin:</b>	
	<b>Technical Specifications</b>	
1.	Overall approximate dimension: 1905 mm L x 710 mm W.	
2.	Stretcher dimension approximately: 1830 mm L x 555 mm W.	
3.	Two section top.	
4.	Height adjusted by crank mechanism from 625 mm to 850 mm.	
5.	X-ray permeable removable stretcher top in two sections made of pre-treated laminated board supported on tubular frame.	
6.	Backrest raised on ratchet.	
7.	Trendelenburg & reverse trendelenburg positions on crank mechanism.	
8.	Four 125 mm diameter, castor wheels with high grade synthetic body, two with brake and two without brake.	
9.	Complete with corner buffers.	
10.	Synthetic rubber covered handles.	
11.	Storage tray.	
12.	Oxygen cylinder holder.	
<b>5</b>	<b>Operating Environment</b>	
5.1	The product offered shall be designed to be stored and to operate normally under Climate, Temperature, Humidity, etc. for Sudan.	
<b>6</b>	<b>Warranty</b>	
6.1	Comprehensive warranty for 2 years after acceptance.	
<b>7</b>	<b>Maintenance Service During Warranty Period</b>	
7.1	During the warranty period supplier must ensure corrective/breakdown maintenance whenever required.	

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## Infusion Pump

No.	Item Specifications	Fill your Specification
	<b>Manufacturer Name:</b>	
	<b>Model No.:</b>	
	<b>Country of Origin:</b>	
	<b>Description of Function</b>	
1.1	A microprocessor controlled infusion pump unit is needed to include but not limited to the following features:	
1.2	Flat hygienic touch screen.	
1.3	Syringe loading sensor – with KVO (keep vein open)	
1.4	Self calibrated, self diagnosis capability.	
1.5	Volume range from 1 –999 ml/hr or better in 1 ml increment	
1.6	High accuracy rate< +/- 2%	
1.7	Audio visual indicators	
1.8	Multi types A/V alarms to include occlusion, door open, low battery, empty, etc...	
1.9	Open system using standard IV lines	
1.10	Air in line/ fluid detector	
1.11	Built in rechargeable battery, at least two hours operation	
1.12	Clamp pins.	
<b>2</b>	<b>Operating Environment</b>	
2.1	The product offered shall be designed to be stored and to operate normally under Power Supply, Climate, Temperature, Humidity, etc. for Sudan.	
2.2	Power supply: 220 – 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metre in length.	
<b>7</b>	<b>Standards and Safety Requirements</b>	
7.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
7.2	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
<b>8</b>	<b>User Training</b>	
8.1	Must provide user training (including how to use and maintain the equipment).	
<b>9</b>	<b>Warranty</b>	
9.1	Comprehensive warranty for 2 years after acceptance.	
<b>10</b>	<b>Maintenance Service During Warranty Period</b>	
10.1	During the warranty period supplier must ensure preventive maintenance and corrective/breakdown maintenance whenever required.	
<b>11</b>	<b>Documentation</b>	
11.1	User (Operating) manual in English.	
11.2	Service (Technical / Maintenance) manual in English.	
11.3	List of important spare parts and accessories with their part numbers and costing.	

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## Portable Patient Monitor

No.	Item Specifications	Fill your Specification
	<b>Manufacturer Name:</b>	
	<b>Model No.:</b>	
	<b>Country of Origin:</b>	
	<b>Description of Function</b>	
1.1	NIBP/Vital Sign Monitor is used to continuously monitor the vital parameters including NIBP of critically ill patients.	
<b>2</b>	<b>Operational Requirements</b>	
2.1	Capability of storage of patient data and printing of patient reports.	
2.2	Capability to integrate with the HIS and transfer the data through LAN / Wireless LAN to any other monitoring room / doctor's desk. Must be HL-7 compatible for transmitting and receiving data to/from LAN/HIS	
<b>3</b>	<b>System Configuration</b>	
3.1	NIBP/Vital Signs Monitor with complete accessories.	
<b>4</b>	<b>Technical Specifications</b>	
4.1	Monitoring parameters:- ECG, respiration, NIBP, SPO2 and temperature	
4.2	Digital and 6 waves / traces display on minimum 9 inches TFT/LCD Display Screen.	
4.3	Monitor must have audible and visual alarms capability. Alarms must have three distinct audible alarm tones to distinguish alarm levels as under. Also monitor must permit automatic viewing of alarming parameter waveform and numeric from any bedside in alarm as and when connected in a network.	
4.4	Must include hemodynamic calculations and vital sign and graphic trends. Trends must be automatically stored for at least 24 hours in at least one minute intervals.	
4.5	Numeric monitored data shall be viewable and recordable in a patient chart type format in at least 1, 5, 15, 60 minutes intervals.	
4.6	Convenient handle for carrying the same	
4.7	Able to fix with bed/trolley.	
4.8	Rebuilt rechargeable battery for minimum 3 hours of operation.	
<b>5</b>	<b>Accessories, spares and consumables</b>	
<b>5.1</b>	<b>Accessories:</b>	
	B Patient cable -01 no.	
	B Adult Cuff – 01 no.	
	B Paediatric Cuff -01 no.	
	B Adult Probe SPO2 -02 nos.	
	B Paediatric Probe SPO2 -02 nos.	
	B Skin Temp Probe -02 nos.	
5.2	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer.	
<b>6</b>	<b>Operating Environment</b>	
6.1	The product offered shall be designed to be stored and to operate normally under Power Supply, Climate, Temperature, Humidity, etc. for Sudan.	
6.2	Power supply: 220 – 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metre in length.	
<b>7</b>	<b>Standards and Safety Requirements</b>	
7.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
7.2	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
<b>8</b>	<b>User Training</b>	
8.1	Must provide user training (including how to use and maintain the equipment).	
<b>9</b>	<b>Warranty</b>	
9.1	Comprehensive warranty for 2 years from acceptance.	
<b>10</b>	<b>Maintenance Service During Warranty Period</b>	
10.1	During the warranty period supplier must ensure planned preventive maintenance (PPM) and corrective/breakdown maintenance whenever required.	
<b>11</b>	<b>Documentation</b>	
11.1	User (Operating) manual in English	
11.2	Service (Technical / Maintenance) manual in English	

11.3 List of important spare parts and accessories with their part number and costing.

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ECG Machine

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Description of Function</b>	
1.1	Used to detect the electrical signals associated with cardiac activity and produce an ECG, a graphic record of the voltage versus time.	
2	<b>Operational Requirements</b>	
2.1	Microprocessor controlled digital 3 channel ECG machine suitable for adult, paediatric and neonate applications.	
3	<b>System Configuration</b>	
3.1	Three channel ECG machine with complete accessories.	
4	<b>Technical Specifications</b>	
4.1	Simultaneous 12 lead acquisition: aVR, aVL, aVF, I, II, III and V1-V6 derived from 10 electrodes (RA, LA, RL, LL, V1 - V6).	
4.2	Arrhythmia and ST elevation detection.	
4.3	Minimum gain/sensitivity settings include 2.5, 5, 10 and 20 mm/mV.	
4.4	Adjustable trace speeds include 5, 10 (and/or 12.5), 25 and 50mm/sec.	
4.5	Minimum HR range 30 – 300 bpm with rhythm analysis.	
4.6	Minimum guaranteed diagnostic frequency response of 0.05 – 150 Hz.	
4.7	Common Mode Rejection Ratio (CMRR) at 60 Hz > 105 dB or better.	
4.8	Calibration signal of 1 mV, manual and/or automatic.	
4.9	Selectable/adjustable filters for baseline drift, muscle artefacts, mains power.	
4.1	Pacemaker detection.	
4.11	Accuracy of input signal reproduction $\pm 5\%$ or $\pm 40 \mu\text{V}$ , whichever is greater.	
4.12	Input impedance > 50 M $\Omega$ .	
4.13	Internal noise level < 12.5 $\mu\text{V}$ peak-to-peak.	
4.14	Automatic baseline centring.	
4.15	Defibrillation fluctuation/overload protection.	
4.16	Baseline recovery < 5 s after defibrillation.	
4.17	AC fluctuation protection.	
4.18	<b>RECORDER AND PRINTER</b>	
	Minimum of 3 recording channels.	
	Recorder display includes date/time, patient data and heart rate and basic settings.	
	Capable of displaying one group of at least three channels simultaneously.	
	Recorder waveform display includes lead marker and timing marker.	
	Integrated/built-in printer.	
	Capable of printing user selected number of channels.	
	Capable of printing one group of at least three channels simultaneously.	
	Paper speeds include 5, 10 (or 12.5), 25 and 50 mm/s.	
	Compatible with Z-fold paper and optionally with roll paper also (indicate compatibility).	
4.19	<b>DATA INPUT/OUTPUT, STORAGE AND ALARMS</b>	
	Integrated alpha-numeric keyboard.	
	Patient data input fields include name, age, height and weight, gender.	
	Backlit Liquid Crystal Display (LCD) display screen, minimum of 6 inch diagonally.	
	Capable of internally storing a minimum of 10 waveforms for later retrieval, printing and/or transmission.	
	Expandable storage for additional waveforms if required, via USB.	
	Capable of exporting waveform data and reports, via USB or LAN.	
	Visual alarms for patient connection (lead faults), heart rate, printer and paper errors, and system errors.	
	Automatic self-test at start up.	
4.2	Built-in rechargeable lithium-ion battery.	
4.21	Minimum battery operating time is 100 ECG exams or 4 hours of continuous recording.	
4.22	Automatic switch to battery in case of power failure, automatic recharge on connection to mains.	
4.23	Maximum battery charging time to full charge is 8 hours.	
5	<b>Accessories, spares and consumables</b>	
5.1	All standard accessories, consumables and parts required to operate the equipment, including all standard tools.	
5.2	<b>Accessories:</b>	
	B Reusable Patient cable with reusable electrodes for adult: 1 set.	
	B Reusable Patient cable with reusable electrodes for paediatric: 1 set.	
	B Reusable patient cable with reusable electrodes for neonate & infant: 1 set.	
	B Extremity clamp electrodes, reusable: 4 nos.	
	B Recording paper 2 Z-folded or rolls: 5 rolls	
	B Bottles of electrode gel, approximately 350ml: 1 nos.	
	B Spare rechargeable battery pack: 1 no.	
	B Set of spare fuses: 1 set	
	B Plastic protective dustcover: 1 no.	
6	<b>Operating Environment</b>	
6.1	The unit shall be capable of operating in ambient temperature of 10°C-45°C and relative humidity of 10-95%	
6.2	The unit shall be capable of being stored continuously in ambient temperature of -20°C -60°C and relative humidity of 10-95%	
7	<b>Power supply:</b>	
7.1	Must power supply: 220/240 V AC, 50Hz single phase schuko plug	
8	<b>Standards and Safety Requirements</b>	
8.1	Must submit ISO13485:2003(AC:2007 for Medical Devices AND	
8.2	CE (93/42 EEC Directives) or USFDA approved product certificate.	
8.3	Electrical safety conforms to standards for electrical safety IEC-60601-1 General Requirements and IEC-60601-2-25 Safety of Electrocardiograms.	
9	<b>Training</b>	
9.1	Must provide user & service training.	
10	<b>Warranty</b>	
10.1	Comprehensive warranty for 2 years after acceptance.	
11	<b>Maintenance Service During Warranty Period</b>	
11.1	Supplier must ensure planned preventive maintenance (PPM) along with corrective/breakdown maintenance whenever required.	
12	<b>Documentation</b>	
12.1	User (Operating) manual in English Should provide 2 sets(hardcopy and soft-copy)	
12.2	Service (Technical / Maintenance) manual in English Should provide 2 sets(hardcopy and soft-copy)	
12.3	List of important spare parts, accessories and consumables with their part numbers and costing.	

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Patient Monitor with IBP

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Description of Functions</b>	
1.1	A bedside patient monitor to monitor physiological parameters of patients in the critical care units or operating theatres.	
2	<b>Operational Requirements</b>	
2.1	It shall operate on AC power supply as well as built-in battery.	
3	<b>System Configuration</b>	
3.1	Monitor Patient Bedside 4 chl. colour with ECG/Resp., SpO2, NIBP, Temp, 2IBP, ETCO2, CO	
3.2	All accessories, consumables and etc. required for monitoring of physiological parameters specified herein.	
4	<b>Technical Specifications</b>	
4.1	High resolution colour flat panel non-reflective screen: > 10" display size for at least 4 channel waveforms display	
4.2	Display of up to 4 physiological parameter modules without the need for external devices	
4.3	Display waveform: ECG, IBP, SpO2, CO, pulse wave and respiration	
4.4	Numeric data display: heart rate / pulse rate, respiration rate, NIBP (Systolic, Diastolic, Mean), SpO2 and current time of NIBP measurement.	
4.5	Use interaction via integrated touch screen, press pad/button or rotary knob.	
4.6	With storage of at least 24 hours of trend data in 30-second sampling resolution for all monitored parameters to be displayed graphically and in tabular form.	
4.7	Data resolution shall be minimum of 30 second sampling.	
4.8	Display of trend:	
4.9 a)	Trend tables in at least with 1, 5, 15, 30 or 60 -minute display formats; and	
4.10 b)	Trend graphs in at least 1, 2, 4, 8, 12 or 24 -hour display formats	
4.11	With storage of events for event recalling, review and documentation. It shall be able to store and record at least 10 events.	
4.12	The monitor shall be protected against the interference from the electric cautions and other electrical equipment.	
4.13	Despite the technical requirements of the networking capability, the networking works shall not be included in this offer.	
4.14	All parameter modules shall work in all monitors within the network and shall be easily interchangeable by the user. There shall be no restriction on the combination of them.	
4.15	<b>Parameter required:</b>	
4.16	ECG/Respiration with 5 system with cable (1 set) and complete reusable ECG electrodes for Adult & paediatric. 1 set each.	
4.17	ECG cable and patient cable 5 leads for disposable electrodes, 1 set	
4.18	Disposable electrodes for adult, child and infant, 50 pcs each	
4.19	Shall come with at least a 2-lead (channel) ST analysis	
4.20	With lethal arrhythmia detection: at least with detection & monitoring of asystole, ventricular, fibrillation, and ventricular tachycardia and bradycardia.	
4.21	Pulse oximetry SpO2 with adult and child finger transducer, 1 each.	
4.22	SpO2 reusable sensor for infant, 1pc	
4.23	Non-invasive blood pressure, NIBP with reusable NIBP Starter Kit	
4.24	NIBP connection hose, 1 set	
4.25	NIBP cuff & tubing for both adult & child (At least 2 different sizes for adult and 4 different sizes for child/ infant/ neonate)	
4.26	Temperature: 2 type of probes required.	
4.27	Core temperature probe adult, child & infant, 1 pc each	
4.28	Skin Temperature probe, adult/child & infant, 1 pc each	

4.29	Invasive blood pressure, IBP for monitoring of 2 IBP
4.30	Shall come with one complete set of IBP reusable accessories
4.31	ETCO2, preferably microstream but at least must be able to perform mainstream and side stream ETCO2 monitoring
4.32	Come with one complete set of ETCO2 flow sensor and accessories for mainstream and side stream monitoring, 1 set each.
4.33	In the case of microstream system, it shall come with one complete set of ETCO2 flow sensor and accessories for side stream monitoring, 1 set
4.34	Come with internal rechargeable Lithium battery complete with built-in charger
4.35	Monitor shall be operated by the battery for at least 60 minutes
4.36	Come with Alarms for all monitored parameters including: exceeding user-selectable upper and lower limits, life threatening alarms, lead/ probe/ sensor disconnection, system failure or error.
4.37	Alarm shall have at least 3 levels: Crisis, Warning, and Advisory
4.38	Alarm notification shall be given by Audible and Visual
4.39	With networking capability to interface with the central monitor
4.40	RS232 port with interface with computer
4.41	System architecture shall be designed such that deactivation or failure of any bedside or central station device on the network shall not disable, inhibit or degrade communication functions among any other devices in the system.
5	<b>Accessories, Spare Parts and Consumables</b>
5.1	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer.
6	<b>Operating Environment</b>
6.1	The product offered shall be designed to be stored and to operate normally under Power Supply, Climate, Temperature, Humidity, etc. for Sudan.
6.2	Power supply: 220 – 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metres in length.
7	<b>Standards &amp; Safety Requirements</b>
7.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND
7.2	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.
7.3	Shall meet IEC 60601-1-2:2000 General Requirements of Safety for Electromagnetic Compatibility.
7.4	Shall meet the safety requirements as per IEC 60601-2-27:1994—Medical electrical equipment—Part 2: Particular requirements for the safety of electrocardiographic monitoring equipment.
8	<b>User Training</b>
8.1	The Supplier shall conduct user training for this equipment to enable operators to use the equipment properly. The training shall include the use of all operational functions of the equipment, as well as routine checks and maintenance expected by users.
9	<b>Warranty</b>
9.1	Comprehensive warranty for 2 years.
10	<b>Maintenance Service During Warranty Period</b>
10.1	During the warranty period supplier must ensure planned preventive maintenance (PPM) along with corrective/breakdown maintenance whenever required.
11	<b>Documentation</b>
11.1	User (Operating) manual in English
11.2	Service (Technical / Maintenance) manual in English
11.3	List of important spare parts and accessories with their part numbers and costing.

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## Vital Sign Monitor

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Description of Function</b>	
1.1	NIBP Monitor measures and displays Blood Pressure values with inflation of the cuffs and is non-invasive in operation.	
2	<b>Operational Requirements</b>	
2.1	Compatible for use in new-borns to adults.	
3	<b>System Configuration</b>	
3.1	NIBP Monitor light weight, portable and with all standard accessories.	
4	<b>Technical Specifications</b>	
4.1	The monitor must be compact in size, light weight and portable.	
4.2	Measurement method: Oscillometric using linear deflation.	
4.3	Pressure detection: Conductor pressure sensor	
4.4	Continuously display of BP (systolic, diastolic, mean and pulse rate at intervals of 2, 3, 5, 10, 15, 20, 30 up to 180 minutes).	
4.5	Shall have facility of self-check system/self-test.	
4.6	Pressure: 00 to 300 mm of Hg, Accuracy: + - 5 mm with standard deviation not greater than 8 mm of Hg.	
4.7	Pulse range: 40 -240 /minute, accuracy: +/- 2%.	
4.8	Patient alarms:	
	B Systolic upper limit:60 -240 and lower limit 20-160 mm of Hg.	
	B MAP (Mean Arterial Blood Pressure) upper limit: 60 -200 mmHg and lower limit 20 -120 mmHg.	
	B DIA upper limit:50 -180 and lower limit 15-120 mm of Hg.	
	B P R upper limit:80 -220 and lower limit 40 -140/minute.	
4.9	Memory: 400 measurement capacity.	
4.10	Printer facility with oscillometric graph of BP and pulse level.	
4.11	Supplied with various sizes of cuffs from neonate to paediatric ranges e.g. 2.5cm, 3.0 cm, 4.0 cm, 5.0 cm, 9 cm, 12 cm and 14 cm.	
4.12	Auto cuff deflation in case of over pressure (140 mm of Hg in case of neonatal mode).	
4.13	Auto zero facility.	
4.14	Stat mode for critical situation for rapid reading for 5 minutes with a 10 second pause.	
4.15	Self-diagnostic facility for air leak, application error, dead battery, motion, over pressure, patient alarm, time out and weak signal.	
4.16	Display: Colour LCD display.	
5	<b>Accessories, spares and consumables</b>	
5.1	Shall supply adult, paediatric and infant sizes of BP cuffs two of each size.	
5.2	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer.	
6	<b>Operating Environment</b>	
6.1	The product offered shall be designed to be stored and to operate normally under Power Supply, Climate, Temperature, Humidity, etc. for Sudan.	
6.2	Power supply: 220 – 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metres in length.	
7	<b>Standards and Safety Requirements</b>	
7.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
7.2	CE (93/42 EEC Directives) or USFDA Or TUV approved product certificate.	
7.3	Electrical safety conforms to standards for electrical safety IEC 60601-1 General requirement for Electrical safety of Medical Equipment.	
8	<b>User Training</b>	
8.1	Must provide user training (including how to use and maintain the equipment).	
9	<b>Warranty</b>	
9.1	Comprehensive warranty for 2 years after acceptance.	
10	<b>Maintenance Service during Warranty Period</b>	
10.1	During warranty period supplier must ensure corrective/breakdown maintenance whenever required.	
11	<b>Documentation</b>	
11.1	User (Operating) manual in English.	
11.2	Service (Technical / Maintenance) manual in English.	
11.3	List of important spare parts and accessories with their part number and costing.	

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## Intracranial Pressure Monitoring Device And Electrodes

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Technical Specifications</b>	
	It should be able to monitor ICP and should have following components.	
	Basic Unit should display mean systolic and diastolic intracranial pressure as digital display.	
	Micro sensor transducer having gauge pressure sensor mounted in a titanium case.	
	ICP should be displayed at digital data rather than hydrostatic column.	
	One touch zero function.	
	Battery backup for 2-3 hours.	
	Facility for adult and children both.	
	Cable to connect ICP monitor with available bed side multipara monitor should be supplied for wave form analysis.	
	Subdural/Intracranial monitoring Kit - 12.	
	Intra Ventricular Catheter Kit - 5.	
	Skull Bolt Kit (Micro sensor) - 3.	
	All its accessories like cable etc to make unit completely functional.	
2	<b>Operating Environment</b>	
2.1	The unit shall be capable of operating in ambient temperature of 10°C-45°C and relative humidity of 10-95%	
2.2	The unit shall be capable of being stored continuously in ambient temperature of -20°C -60°C and relative humidity of 10-95%	
3	<b>Power supply:</b>	
3.1	Input power supply: 220/240 V AC, 50Hz single phase schuko plug	
4	<b>Standards and Safety Requirements</b>	
4.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
4.2	CE (93/42 EEC Directives) or USFDA approved product certificate.	
4.3	Electrical safety conforms to standards for electrical safety IEC-60601-1 General Requirements and IEC-60601-2-25 Safety	
5	<b>Training</b>	
5.1	Must provide user & service training.	
6	<b>Warranty</b>	
6.1	Comprehensive warranty for 2 years after acceptance.	
7	<b>Maintenance Service During Warranty Period</b>	
7.1	Supplier must ensure planned preventive maintenance (PPM) along with corrective/breakdown maintenance whenever required.	
8	<b>Documentation</b>	
8.1	User (Operating) manual in English Should provide 2 sets(hardcopy and soft-copy)	
8.2	Service (Technical / Maintenance) manual in English Should provide 2 sets(hardcopy and soft-copy)	
8.3	List of important spare parts, accessories and consumables with their part numbers and costing.	

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## Mobile Operating Lamp

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
	<b>Technical Specifications</b>	
1.	Description of Function	
1.1	Mobile operating light is required for carrying out operations in an emergency environment and the system can be moved from place to place in hospitals.	
2.	<b>Operational Requirements</b>	
2.1	Shall operate on mains electric supply as well as on battery.	
3.	<b>System Configuration</b>	
3.1	Operating Light Mobile with single light head, moveable on casters and with all standard accessories.	
4.	<b>Technical Specifications</b>	
4.1	The light shall be designed with good counterbalance mechanism in order to ensure stability of light head in all positions	
4.2	Shall have single light head	
4.3	Light head shall not be greater than 400mm diameter	
4.4	Number of bulb: 1 main bulb halogen 24V 150W with 1 backup bulb with auto-switching or multi-bulbs light head not more than 3 bulbs of halogen 12V 50W.	
4.5	Light intensity range, shall not be less than 80,000 lux at 1 meter distance from light source. Bidder shall attached certified test certificate showing the compliance of this requirement with TSE.	
4.6	Light temperature, between 4000 - 4500 K.	
4.7	Shall have colour rendering index in between 92 - 94.	
4.8	Shall have 99% heat filtering.	
4.9	Temperature increase at head shall not be more than 2 °C.	
4.10	Temperature increase on operating field shall not be more than 15 °C.	
4.11	Radiant heat energy (beam temperature) shall not exceed 25,000 microwatts per square centimetre measured 1m from the light source.	
4.12	The light offered shall have safety designed to prevent patient from burns, especially during the ophthalmic procedures. The light offered shall be certified safe to be used under ophthalmic procedures.	
4.13	Working distance range (focal length): 70 - 130cm.	
4.14	Depth of field with focused light: > 60cm.	
4.15	Luminance field size: 15 ~ 25cm diameter, adjustable.	
4.16	Shall have a control to regulate light intensity and to switch on the unit.	
4.17	Shall have an On/Off switch at lamp head.	
4.18	Shall come with continuous dimmer, continuous focus adjustment, continuous field adjustment.	
4.19	Sterilizable handle to regulate light field size, 2 pcs.	
4.20	Vertical adjustment shall not be less than 115cm.	
4.21	Rotation 360 degree.	
4.22	Come with Ophthalmic procedures safe light bulbs with a minimum of 1000 hours lifespan.	
4.23	Interference suppressed complies with VDE 0875 or equivalent.	
4.24	Transformer and operating elements shall be integrated in light head housing.	
4.25	<b>Mobile Stand:</b>	
	Shall be based on light weight easily moveable stable support with at least 4 casters with locking counter balance mechanism in order to ensure stability of light head in all positions and with swivel arm. Caster must be medical chemical resistant.	
4.26	<b>Battery:</b>	
	B Lithium Ion built in rechargeable batteries with capacity sufficient for operating in battery mode (fully charged) for minimum of 3 hours.	
	B Shall include a built-in automatic battery charger with proper protection against battery damage.	
	B Shall include battery power (charge) indicator.	
5.	<b>Accessories, spares and consumables</b>	
5.1	<b>Accessories:</b>	
	B 1 spare halogen bulb.	
	B 1 spare set of fuses.	
5.2	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer.	
6.	<b>Operating Environment</b>	
6.1	The product offered shall be designed to be stored and to operate normally under Power Supply, Climate, Temperature Humidity, etc. for Sudan.	
6.2	Power supply: 220 - 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metre in length.	
7.	<b>Standards and Safety Requirements</b>	
7.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
7.2	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
7.3	Electrical safety conforms to standards for electrical safety IEC 60601-1 General requirement for Electrical safety of Medical Equipment.	
8.	<b>User Training:</b>	
8.1	Must provide user training (including how to use and maintain the equipment).	
9.	<b>Warranty</b>	
9.1	Comprehensive warranty for 1 year after acceptance.	
10.	<b>Maintenance Service During Warranty Period</b>	
10.1	During warranty period supplier must ensure corrective/breakdown maintenance whenever required.	
11.	<b>Documentation</b>	
11.1	User (Operating) manual in English.	
11.2	Service (Technical / Maintenance) manual in English.	
11.3	List of important spare parts and accessories with their part numbers and costing.	

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## Operating Table for Neurosurgical

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
	<b>Technical Specifications</b>	
1.	The quoted system should be based on fully electro mechanical technology.	
2.	The table should be sturdy, easily mobile with padded divided (split leg) foot section.	
3.	The table should have flat base with exchangeable table top. The table top and the base can be moved to wherever in the Operating Room area with the help of Shuttle facility. Shuttle has to be provided along with unit.	
4.	All tables sections except the section attached to the pillar should be quickly detachable using easy latch mechanism to suit all surgical needs.	
5.	Head plates and leg plates should be interchangeable.	
6.	Built in kidney bridge	
7.	Table should have minimum footprint to give surgeon and image intensifiers maximum liberty of movements.	
8.	Should be suitable for patient positioning in supine, lateral, sitting, concord, park bench prone and minimally invasive surgeries of spine.	
9.	It should provide for attachments of skull traction, limb traction, 3 pin or 4 Pin head frames, horseshoe attachments in supine, lateral, prone positions as well as of connection brackets for beach chair /sitting positions.	
10.	Tabletop should be <b>completely without x ray interfering cross bars</b> and should be <b>radiolucent</b> and scratch proof. The Supplier shall provide <b>full carbon components for 360 degree radiolucency</b> for the above mentioned surgeries.	
11.	It should be compatible with C arm, O arm and mobile CT.	
12.	The side rails should be metal free to be compatible with 3D C arm capturing.	
13.	Mattress should be moulded, seamless, anti-static, anti-decubitus, latex free & durable. It should be attached to top with pins and not Velcro and should be easy to clean.	
14.	<b>Weight capacity</b> - at least 225kg in all positions, static capacity 350 kg or more	
15.	<b>Length</b> - 1890 mm or more	
16.	<b>Width</b> - 500 mm or more	
17.	<b>Minimum height</b> - 620 mm or lower (with table top)	
18.	<b>Maximum height</b> - 1000 mm or higher (without table top)	
19.	<b>Lateral tilt</b> 18 degrees or higher	
20.	<b>Trendelenburg /reverse Trendelenburg</b> 25 degrees or better	
21.	<b>Back up +80°</b> or higher, <b>back down -60°</b> or lower	
22.	<b>Leg section up /down +90°/-90°</b>	
23.	The table should be equipped with a completely independent electronic back up drive unit operated through the override panel.	
	Fully charged battery/ies should be sufficient for weekly operative schedule i.e approximately for 50- 80 operations. The central column /base and handheld controller should indicate the charging status and table battery status.	
1.	Latest type of LCD/LED backlit/FTT screen on hand held controlled displaying each selected position of the table, memory features and similar features should be available on override control panel.	
2.	All table positions like height, lateral tilt, kidney position, Trendelenburg and reverse Trendelenburg and flex/reflex and zero levelling should be obtainable using remote hand held controller without moving the patient.	
3.	Should have <b>automatic 0 / table level</b> position switch on handheld controller.	
5.	RS-232 port for device control & computer assisted error diagnosis for easy service is preferable.	
	<b>Neurosurgical attachments to be provided- one set</b>	
1.	Light weight Radiolucent/Carbon fibre spinal attachment for use with OT table having adjustable wing sets to fit wide varieties of patients (weighing capacity 180 kg or higher) and to obtain decompressed abdomen and postural control for various kinds of surgical intervention in prone and lateral positions. Standard wing sets as well as those contoured for breasts should be supplied in addition.	
	Attachment should not have any member near the floor between the table and head end to provide unlimited and free access to C arm.	
	Height of attachment must be adjustable to achieve multiple positions such as flexion, extension, spondylolisthesis surgery etc.	
	Patient positioning should be possible in prone (face down) & in radiolucent 3 Pin frame (DORO/Mayfield) attachment & prone head positioner, in versatile and easy manner.	
	Removable and radiolucent table top(s) with mattress/foam pad when wing sets are not in use and patient in supine position.	
	Disposable covers for wing sets for patient comfort and safety - qty 100	
	Attachment should be easily portable from one OR to other, and storage should be possible in small space.	
2.	Radiolucent Mayfield/DORO skull clamp with modular fixation system- swivel adapter and long transitional member- one complete set including table attachment with storage container/s.	
	Skull pins (reusable, autoclavable) adult 6, Pediatric 6	
	Radiolucent disposable pins adults-12, pediatric- 12	
	Accessories for park bench position- one set	
	Accessories for sitting position- one set	
3.	Radiolucent head rest (horseshoe) with traction device- one adult, one paediatric	
4.	Accessories for knee chest position- one complete set.	
5.	Lightweight, radiolucent, flat bottom chest rolls- large - one pair, medium size- one pair.	
6.	Arm positioning support with radiolucent pad and clamps- one pair	
7.	Lateral side support with clamps- two pairs	
8.	Body restraint strap- 2 (one large, one extra large)	
9.	Raised lateral arm support with calmp-1	
10.	Light weight Head ring (gel pad type): adult one- pediatric one	
11.	Gel pads- arm protectors 1 pair, sacral pad - 1, heel pad- two pairs, knee pads- two pairs, universal positioner- two.	
	<b>Operating Environment</b>	
	The product offered shall be designed to be stored and to operate normally under Climate, Temperature Humidity, etc. for Sudan.	

<b>Standards and Safety Requirements</b>	
Must submit ISO13485-2003/AC:2007 for Medical Devices AND	
CE (93/42 EEC Directives) or USFDA approved product certificate.	
<b>User Training</b>	
Must provide user training (including how to use and maintain the equipment).	
<b>Warranty</b>	
Comprehensive warranty for 2 years after acceptance.	
<b>Maintenance Service During Warranty Period</b>	
During the warranty period supplier must ensure corrective/breakdown maintenance whenever required.	
<b>Documentation</b>	
User (Operating) manual in English.	
Service (Technical / Maintenance) manual in English.	
List of important spare parts and accessories with their part numbers and costing.	

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## Diathermy Machine

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Description of Function</b>	
1.1	Diathermy Machines are used for surgical cutting and for controlling bleeding by causing coagulation (haemostasis) at the surgical site	
2	<b>Operational Requirements</b>	
2.1	It shall operate on AC power supply in the operating theatre.	
3	<b>System Configurations</b>	
3.1	Diathermy Machine (Electrosurgical unit) 300W with complete accessories.	
4	<b>Technical Specifications</b>	
4.1	Solid-state/microprocessor-controlled frequency generator.	
4.2	Monopolar and bipolar outputs, electrically isolated from ground.	
4.3	Minimum output frequency is higher than 320KHz.	
4.4	Monopolar modes include pure cut, blend, and coagulate (soft, contact and spray).	
4.5	Bipolar mode includes coagulate and cut mode.	
4.6	Maximum monopolar cut power output maximum 300 W.	
4.7	Maximum monopolar coagulation power output maximum 100 W.	
4.8	Maximum bipolar power output maximum 100 W.	
4.9	Hand switch mode when button-activated probes are connected.	
4.1	Foot switch that can operate in monopolar and bipolar modes.	
4.11	Yellow buttons/pedals for cut and blue buttons/pedals for coagulate.	
4.12	Grounding pad/return electrode monitored for patient connection.	
4.13	Front panel allows mode selection, power settings and on/off.	
4.14	Display shows output power, system errors and electrode failure.	
4.15	Automatic shut off/generator deactivation on grounding pad/return electrode connection failure.	
4.16	Audible and visual indicators of activation and alarms.	
4.17	Self-test mode.	
4.18	Protection against defibrillator discharges.	
4.19	The unit shall come with trolley well designed to fit the generator with drawers for keeping the accessories	
5	<b>Accessories, Spare Parts and Consumables</b>	
5.1	All standard accessories/consumables/parts required for the proper operation of the above item shall be included in the offer	
5.2	1 x Foot switch, two pedals, yellow and blue, with connecting cable.	
5.3	2 x Grounding pad/return electrodes, reusable, with 3m connecting cable (adult & child).	
5.4	2 x Monopolar electrode handle, reusable, foot switch controlled, with connecting cable.	
5.5	2 x Monopolar electrode handle, reusable, finger switch controlled, with connecting cable.	
5.6	1 x Set different monopolar reusable electrodes (needle, Knife, ball, and Wire loop).	
5.7	2 x Bipolar forceps, reusable, foot switch controlled, with connecting cable (short, straight, tip-angled).	
5.8	2 x Bipolar forceps, reusable, foot switch controlled, with connecting cable (long, straight, tip-angled).	
5.9	1 x Trolley on 4 anti-static swivel castors, 2 with brakes, fit with a drawer and storage for foot pedal/switch	
6	<b>Operating Environment</b>	
6.1	The unit shall be capable of being stored continuously in ambient temperature of 10°C -60°C and relative humidity of 30-90%	
6.2	The unit shall be capable of operating in ambient temperature of 10°C-40°C and relative humidity of 30-75%	
7	<b>Power supply</b>	
7.1	Input power supply: 220/240 V AC , 50Hz single phase schuko plug	
8	<b>Standards &amp; Safety Requirements</b>	
8.1	Must submit ISO13485-2003/AC:2007 for Medical Devices AND	
8.2	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
8.3	IEC 60601-2-2 Medical Electrical Equipment – Part 2-2: Particular requirements for the safety of high frequency surgical equipment	
9	<b>User Training:</b>	
9.1	The Supplier shall conduct user training for this equipment to enable operators to use the equipment properly. The training shall include the use of all operational functions of the equipment, as well as routine checks and maintenance expected by users.	
10	<b>Warranty</b>	
10.1	Comprehensive warranty for 2 years.	
11	<b>Maintenance Service During Warranty Period</b>	
11.1	Supplier must ensure planned preventive maintenance (PPM) along with corrective/breakdown maintenance whenever required.	
12	<b>Documentation</b>	
12.1	User (Operating) manual in English Should provide 2 sets(hardcopy and soft-copy)	
12.2	Service (Technical / Maintenance) manual in English Should provide 2 sets(hardcopy and soft-copy)	
12.3	List of important spare parts, accessories and consumables with their part numbers and costing.	

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## Operating Table

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Description of Functions</b>	
1.1	Hydraulic operating tables are simple tables for performing surgical procedures and it works without electrical power.	
2	<b>Operational Requirements</b>	
2.1	OT Table is required for general surgery and shall have X-Ray translucent tops.	
3	<b>System Configuration</b>	
3.1	Operating Table Hydraulic with complete accessories.	
4	<b>Technical Specifications</b>	
4.1	Four section table top with divided foot section.	
4.2	The table shall be mobile on castors with efficient braking system for stability during surgery.	
4.3	Table top must be constructed from a high-pressure laminate to permit x-ray penetration and fluoroscopy.	
4.4	All table positioning, i.e., height, back section, lateral tilt, trendelenburg, and anti-trendelenburg, except foot and head section must be operated hydraulically.	
4.5	Shall have a manual position selector, whose location must be interchangeable between foot and head end.	
4.6	The casings on the frame and centre supporting column must be made of hygienic stainless steel.	
4.7	Mattress must be radio lucent and suitable for fluoroscopy.	
4.8	<b>Dimensions (approx. +/- 10 % variations):</b>	
	□ Height: 730-1040 mm.	
	□ Side tilt: + 15 degrees	
	□ Back section adjustment: - 15 degrees to 70 degrees	
	□ Foot section adjustment: -90 to 0 degree, detachable.	
	□ Trendelenburg: 25 degree.	
	□ Anti trendelenburg: 25 degree.	
	□ Head section adjustment: -40 to -30 degrees, detachable.	
	□ Maximum width: 553 mm.	
	□ Length: 1850 mm.	
5	<b>Accessories, spares and consumables</b>	
5.1	<b>Accessories:</b>	
	□ Padded arm rest with straps pair with damp.	
	□ Anesthesia screen with clamps.	
	□ Side supports pair with clamps.	
	□ Knee crutches pair with damp.	
	□ X-ray cassette tray.	
	□ Kidney bridge.	
	□ SS bowl with clamps.	
	□ Infusion rod with clamp.	
	□ Legs Support.	
5.2	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer.	
6	<b>Operating Environment</b>	
6.1	The product offered shall be designed to be stored and to operate normally under Climate, Temperature Humidity, etc. for Sudan.	
7	<b>Standards and Safety Requirements</b>	
7.1	Must submit ISO13485-2003/AC:2007 for Medical Devices AND	
7.2	CE (93/42 EEC Directives) or USFDA approved product certificate.	
8	<b>User Training</b>	
8.1	Must provide user training (including how to use and maintain the equipment).	
9	<b>Warranty</b>	
9.1	Comprehensive warranty for 2 years after acceptance.	
10	<b>Maintenance Service During Warranty Period</b>	

10.1	During the warranty period supplier must ensure corrective/breakdown maintenance whenever required.	
<b>11</b>	<b>Documentation</b>	
11.1	User (Operating) manual in English.	
11.2	Service (Technical / Maintenance) manual in English.	
11.3	List of important spare parts and accessories with their part numbers and costing.	

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Delivery Table		
No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Description of Function</b>	
1.1	Delivery bed is used for Baby Delivery and must incorporate ideal blend of the patient's individual requirements on comfort and the professional needs of the delivery team, focusing on the aesthetic and functional design of the entire product.	
2	<b>Operational Requirements</b>	
2.1	Manually operated delivery bed.	
3	<b>System Configuration</b>	
3.1	Delivery Bed with complete attachments and accessories.	
4	<b>Technical Specifications</b>	
4.1	It must have manual adjustments for height and back positions.	
4.2	It must have collapsible side rails.	
4.3	It must have three sectional mattresses and seat section must have large perennial cut.	
4.4	It must have head board which can be detached.	
4.5	Must have wheels provided with locking system.	
4.6	Must have retractable foot section so as to convert bed into table.	
4.7	Must have infusion rods which have adjustable heights, quick release and attaches to all corners of bed.	
4.8	Must have adjustable leg rests.	
4.9	Must have push grip handles.	
4.10	Must have sliding stainless steel bowl at perennial part of table.	
4.11	It must have gather bag holder which can be attached on either side of bed.	
4.12	It must be able to give Trendelenburg, reverse Trendelenburg and 70 degree sitting position.	
4.13	It must have adjustable foot supports.	
4.14	It must be easy to maintain clean and sterilize (especially blood stains).	
4.15	Frame must be (washable) stainless steel.	
4.16	<b>Dimensions (approx.):</b>	
	B Length: 7 Feet	
	B Width: 3 Feet	
4.18	Capacity load of 180 kg or more	
5	<b>Accessories, spares and consumables</b>	
5.1	All standard attachments and accessories: 01 set	
5.2	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer.	
6	<b>Operating Environment</b>	
6.1	The product offered shall be designed to be stored and to operate normally under Climate, Temperature, Humidity, etc. for Sudan.	
7	<b>Warranty</b>	
7.1	Comprehensive warranty for 2 years after acceptance.	
8	<b>Maintenance Service During Warranty Period</b>	
8.1	During the warranty period supplier must ensure corrective/breakdown maintenance whenever required.	

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Electric Operating Table		
No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
	<b>Technical Specifications</b>	
	<b>General features</b>	
	The quoted system should be based on electro hydraulic technology.	
	The table should either be eccentric or with central column. The tables with central column should allow sufficient motorized slide of at least 310 mm to permit full upper body imaging including the pelvis without having to move the patient (transitional facility controlled by remote)	
	The table should be sturdy, mobile with padded divided (split leg) foot section.	
	All tables sections except the section attached to the pillar should be quickly detachable using easy latch mechanism to suit all surgical needs.	
	Head plates and leg plates should be interchangeable.	
	The table should be made of high quality stainless steel with space to provide comfortable leg space to the surgeon while operating.	
	The base column should have telescopic cover of stainless steel and should prevent the ingress of fluid in the system.	
	All metal components of the table should be made up of corrosion resistant aluminum or stainless steel alloys.	
	The table should have heavy duty antistatic swivel castors with central electric/ hydraulic locking through hand held controller for easy maneuverability. It should have self-leveling floor locks.	
	Brakes, wheels for 360 degree rotation or rotation for cleaning and avoiding equipments with motorized auto drive for efficient patient transport.	
	All table top section should be quickly detachable and inter chargeable as per need of surgery.	
	Should have facility to invest corder tray through tunnel under table.	
	Moulded seamless mattress attached to top with pins (not Velcro) preferably.	
	Should have facility to change orientation of table (Normal and Reverse mode).	
	Should have single switch operated flex, reflex and 'O' position.	
	<b>Weight load capacity</b>	
	Should have safe patient weight load capacity of at least 225 kg in all table positions. The STATIC patient weight capacity should be 400 Kg or more.	
	<b>Table top and mattress</b>	
	o The table top should be made up of scratch-less X-Ray/C-arm translucent material.	
	o Mattress should be double layered, more than 70 cm, ultrasonically sealed and anti-decubitus/antistatic, with easy Velcro free fixation/Velcro and should be easy to detach from the top.	
	o The mattress should be easy to clean	
	o The mattress should be latex and CFC free and 100% hygienic	
	<b>Power and Controls</b>	
	o The table should be equipped with a completely independent electronic back up drive unit operated through the override panel in case of failure of Main drive.	
	o Fully charged battery should be sufficient for weekly operative schedule i.e approximately for 80 operations.	
	o The central column /base and handheld controller should indicate the charging status and table battery status.	
	o All table positions like height, lateral tilt, kidney position, Trendelenburg and reverse Trendelenburg and flex/reflex and zero leveling should be obtainable using remote hand held controller without moving the patient.	
	o Should have automatic 0 position switch on handheld controller.	
	o Latest type of LCD Backlit screen on hand held controlled displaying each selected position of the table and similar features should be available on override control panel.	
	o Fast "Memory" options for moving to previously stored position on Remote control.	
	o 10 free programmable memory positions for patient positioning	
	<b>Technical Specification: All Parameters should be within allowed ± 5% variation limits:</b>	
	o Overall length: 200-210 cm.	
	o Max. Width : Min. 550- 600mm (With side rails)	
	o Minimum height: 600mm -760 mm	
	o Maximum height: 1000mm -1010 mm	
	o Side Tilt: 18 degree or more.	
	o Trendelenburg: 25 degree or more.	
	o Anti-Trendelenburg : 35 degree or more.	
	o Power input to be 220-240Vac, 50HZ fitted	
	o The quoted equipment should be having ISO, CE and FDA certification.	
	o All technical specification accepted in compliance statement must be supported by the printed literature from the manufacturer.	
	<b>Accessories</b>	
	o In case the table is imported the accessories must also be imported with the table and must not be locally sourced.	
	o It should have on-table GI endoscopy (upper and lower) attachment.	
	o It should have all attachments for mounting Thompson retractor.	
	o Allen stirrups (preferably hydraulic).	
	o Lloyd-davis stirrups (preferably hydraulic).	
	o Brake pedal – should be single lever foot operated.	
	<b>Should be supplied with following standard Accessories:</b>	
	o Anesthesia screen and pair of padded Armrest with clamps.	
	o Pair of leg plates with padding	
	o Pair of Body strap for kidney position.	
	o Backlighted Hand control	
	Tabletop should be completely without x ray interfering cross bars and should be radiolucent and scratch proof. The supplier shall provide full carbon components for 360 degree radiolucency for the above mentioned surgeries.	
	It should be compatible with C-arm.	
	The side rails should be metal free to be compatible with 3D C-arm capturing.	
	Mattress should be moulded, seamless, anti-static, anti-decubitus, latex free & durable; It should preferably be attached to top with pins and not Velcro and should be easy to clean.	
	<b>Warranty</b>	
	Comprehensive warranty for 2 years from acceptance.	
	<b>Maintenance Service During Warranty Period</b>	
	During the warranty period supplier must ensure planned preventive maintenance (PPM) and corrective/breakdown maintenance whenever required.	
	<b>Installation and Commissioning</b>	
	The bidder must arrange for the equipment to be installed and commissioned by certified or qualified personnel; any prerequisites for installation to be communicated to the purchaser in advance, in detail.	
	<b>Documentation</b>	
	User (Operating) manual in English	
	Service (Technical / Maintenance) manual in English	
	List of important spare parts and accessories with their part number and costing.	

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## Patient Monitor Full Parameters

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
<b>Technical Specifications</b>		
1	<b>Description of Function</b>	
1.1	Modular Multi parameter Monitor is used to monitor vital parameter of critical patients.	
2	<b>Operational Requirements</b>	
2.1	Capability of storage of patient data and printing of patient reports.	
3	<b>System Configuration</b>	
3.1	Vital multi-parameter monitor to monitor and display - ECG, Respiration, NIBP, SPO2, CO2 with capnography, Temp, Cardiac output, NMT, BIS/Entropy, EEG, Gastrictonometry & IBP and with complete accessories.	
<b>Technical Specifications</b>		
4.1	Minimum 15 inches multi colored TFT display screen.	
4.2	Separate CPU/Module rack.	
4.3	Eight digital and waveforms/traces display	
4.4	Combination of single, dual and multi parameter modules.	
4.5	Parameter modules freely exchangeable between all the monitors.	
4.6	Multi channel (up to 12 leads) ST segment analysis.	
4.7	Facility to monitor and display - ECG, Respiration, NIBP, SPO2, CO2 with capnography, Temp, Cardiac output, NMT, BIS/Entropy, EEG, Gastrictonometry & IBP – 2 nos.	
4.8	Automatic arrhythmia detection & alarm for standard and lethal arrhythmia.	
4.9	EtCO2 Main stream/ side stream. Display both inspired and expired values, showing capnography.	
4.10	NMT Module/monitor: For measurement and display of TOF count, TOF %, ST, DBS, Tetanic and Trend for continuous usage.	
4.11	Automatic measurement facility in selected time interval.	
4.12	Automatic selection of supramaximal current. Include standard accessories.	
4.13	EEG Module with all accessories.	
4.14	Must provide hemodynamic, oxygenation, Ventilation calculation package	
4.15	Trend of at least 48 hours.	
4.16	200 nos. event recall/snapshot facility both manually and automatically triggered by alarm.	
4.17	Automatic Zoom in Facility in the monitor display.	
4.18	The monitors must have monitor-to-monitor overview facility and data transfer over the network.	
4.19	Must have drug calculation package.	
4.20	Web browsing facility to review each networked monitors data through hospital LAN via office PC in Hospital LAN Network and/or through dial up facility from remote location.	
4.21	Communications with Information Management Systems:	
A.	To provide HL-7 compatible server for sending and receiving information to and from the monitoring network to and from Hospital Information System, Laboratory information etc for integration of various information	
B.	To provide suitable facility for sending and receiving DICOM compatible Radiological Images like Ultrasound, X-Ray etc. to and from the monitoring network to and from Hospital Information System, Radiology Information System etc. for integration of various information	
4.22	Integrated or external printer for report output.	
5	<b>Accessories, spares and consumables</b>	
5.1	<b>Accessories:</b>	
B	ECG/Resp: 5 Lead ECG Cable with clip- 2 sets per monitor and 10 Lead ECG Cable with clip- 1 set per monitor.	
B	Temperature: Rectal temperature probe- two per monitor and skin temperature probe- one per monitor.	
B	NIBP: Adult cuff- 2nos. per monitor and two sizes of paediatric cuffs- one per monitor (complete sets)	
B	EtCO2 module with all accessories. In case of side stream EtCO2- 10 sets of sampling tubes for each module to be included.	
B	SPO2: Adult SPO2 sensor with cable- two nos. per monitor and Paediatric SPO2 sensors one no. per monitor.	
B	Cardiac Output: Must be by therm dilution method with all accessories	
B	IBP: Include four nos. per monitor of reusable pressure transducer with bracket, holder and 100 nos. disposable domes per monitor.	
B	EEG Modules- with all accessories. Must display at least two channels.	
B	BIS/Entropy Module: Adult Sensors-200 numbers. Spectral analysis modules by compressed spectral array.	
B	Necessary cabling for networking the monitors on turnkey basis.	
B	Necessary mounting solution/ mounting on any pendant for monitors	
5.2	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer. Bidders must specify the quantity of every item included in their offer (including items not specified above).	
6	<b>Operating Environment</b>	
6.1	The system offered shall be designed to operate normally under the conditions of the purchaser's country. The conditions include Power Supply, Climate, Temperature, Humidity, etc. 6.2 Power supply: 220 – 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metre in length.	
7	<b>Standards and Safety Requirements</b>	
7.1	Must be USFDA, CE (93/42 EEC Directives), UL or TUV approved product	
7.2	This unit shall be certified to meet ISO9001 and/or ISO14971 and/or ISO 13485:2003/AC: 2007.	
7.3	Shall meet IEC-60601-1-2:2001 General Requirements of Safety for Electromagnetic Compatibility or must comply with 89/366/EEC, EMC directive	
7.4	Shall meet the safety requirements as per IEC 60601-2-27:1994—Medical electrical equipment—Part 2: Particular requirements for the safety of electrocardiographic monitoring equipment.	
8	<b>User Training</b>	
8.1	Must provide user training (including how to use and maintain the equipment).	
9	<b>Warranty</b>	
9.1	Comprehensive warranty for 2 years from acceptance.	
10	<b>Maintenance Service During Warranty Period</b>	
10.1	During the warranty period supplier must ensure planned preventive maintenance (PPM) and corrective/breakdown maintenance whenever required.	
11	<b>Installation and Commissioning</b>	
11.1	The bidder must arrange for the equipment to be installed and commissioned by certified or qualified personnel; any prerequisites for installation to be communicated to the purchaser in advance, in detail.	
12	<b>Documentation</b>	
12.1	User (Operative) manual in English	
12.2	Service (Technical / Maintenance) manual in English	
12.3	List of important spare parts and accessories with their part number and costing.	

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## Cesarean Set

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
<b>Technical Specifications</b>		
	BP Handle standard No.4 QTY:2	
	Debaquey Forceps plain 8" traumatic tissue QTY:4	
	Forceps 2.0 mm straight. QTY:4	
	Debaquey Forceps nontoothed 6'A "(2mm) QTY:2	
	atraumatic tissue forceps QTY:4	
	Adson Forceps plain 5"/12 cm QTY:2	
	Adson Forceps toothed 5"/12 cm QTY:2	
	Metzenbaum Scissors Strt 8" (TC TIP) QTY:2	
	Metzenbaum Scissor Curved 20 cm 8inch (TC TIP) QTY:2	
	Kocher Artery Forceps Straight 18" QTY:1	
	Babcock Tissue Forceps 6" QTY:	
	Babcock Tissue Forceps 8" QTY:	
	Allis Tissue Forceps 6" QTY:2	
	Allis Tissue Forceps 8" QTY:2	
	Artery Forceps Cur 8" Ione /20cm QTY:4	
	Artery Forceps Cur 6" Medium 15 cm QTY:2	
	Mosquito Artery Forceps Cur 12.5" QTY:4	
	Doyen's Retractor 80 x 53mm, 8 1/2"/22.2 cm QTY:2	
	Langenback Retractor 11x35mm 8 1/2"/22.2 cm QTY:1	
	Heavy Straight Scissor S.S./Sharp8"/20cm QTY:2	
	Needle Holder 8" & 6"/70 cm & 16 cm (TC TIP) QTY:1	
	Kidney Tray 8" S.S. QTY:2	
	Bowl S.S. 6" (medium) QTY:3	
	Green Arm/force 8 3/4" QTY:2	
	Artery Forceps str 6" /15 cm QTY:2	
	Right Angle Artery Forceps MIXTER 8"/20 cm QTY:1	
	Sponge Holding Forceps 10" & 6" /18cm QTY:4	
	Suction Tip Pool Straight 10mm S.S. QTY:1	
	Cross Action Towel Clips Backhaus 3" QTY:4	
	Wrigley Outlet Forceps QTY: 1pair	
	Silicone vacuum cup (medium/large) QTY: 1pair	
	Baby tray 20 x 16 x 3 inches, thickness 0.5 mm with rounded edges & without sharp. QTY:1	
<b>Standards &amp; Safety Requirements</b>		
	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
	<b>Warranty</b>	
	Comprehensive warranty for 2 years.	

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## Vessel Sealing Machine

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
<b>Technical Specifications</b>		
	System should be a single generator that provides Ultrasonic energy and Advanced RF energy technology for soft tissue dissection and vessel sealing	
	System should have a universal connector to connect Ultrasonic energy and Advanced RF energy instruments.	

	System should have automatic instrument recognition.	
	System should have a touch screen display for fast and setup, operation and on-screen diagnostics.	
	System should have the ability for software updates via USB memory stick.	
	System should conform to the following international standards EN (IEC) 60601-1, EN (IEC) 60601-1-2, EN (IEC) 60601-2-2, EN (IEC) 60601-1-8	
	System should provide Class 1 protection against electric shock	
	System should have a single footswitch for operating ultrasonic energy or advanced RF energy instruments.	
	System should have the ability to select handswitch or footswitch activation or both for Ultrasonic and advanced RF energy instruments and the ability to change selection during use	
	System should not have minimal lateral thermal spread more than 1 mm.	
	System should have standby mode to ensure safety.	
	System should come equipped with system diagnostics and troubleshooting guide to pin point any problems in the systems & onscreen warning display system for generator overheating, handpiece errors and instrument errors	
	System should be able to power ultrasonic energy instruments with 55.5 KHz frequency and have the ability to power ultrasonic energy instruments in the frequency range of 30-80 KHz in future	
	The hand piece for the system should come with an inbuilt transducer.	
	System should be compatible for open surgery and for laparoscopic surgery.	
	System should be compatible with both 5mm and 10mm instruments.	
	System should have at least 5 power settings levels with power level display for ultrasonic energy instruments.	
	System should be able to power energy instruments with microprocessor controlled bipolar electrocautery radiofrequency technology with a quasi-sinusoidal forced impedance output.	
	System should be equipped with smart advanced RF energy technology to measure the tissue impedance and control the power delivery.	
	System should be equipped with advanced RF energy technology that can simultaneously seal and transect vessels up to and including 7mm, large tissue pedicles and vascular bundles.	
	System should be equipped with advanced RF energy technology that provides temperature controlled energy delivery which should maintain tissue temperature approximately at 100 degree Celsius.	
	System should have Advanced RF Energy hand instruments with a unique electrode configuration to minimize the lateral thermal spread.	
	System should have Advanced RF Energy hand instruments with technology to deliver high compression uniformly across seal area.	
	System should have Advanced RF Energy hand instruments that provide tissue / vessel seal strength to withstand bursting pressure of 7 times the systolic pressure.	
	All hand probes for open and lap procedures should be able to simultaneously cut and coagulate tissues.	
	System should be able to seal & cut up to 7 mm vessels with ultrasonic energy technology.	
	System should comprise of the following Hardware:	
1	Generator	
2	Footswitch & Cable Accessories:	
1	Handpiece (Transducer)	
2	Generator Cart	
3	Adaptors for ultrasonic and advanced RF energy instruments	
	<b>RF Energy Instruments:</b>	
1.	Hand probes of 5mm shaft diameter for laparoscopic procedures with round tip (5mm tip width) with shaft length 35cm with 55 degree articulation each side and should be both hand & foot activated, device should be able to simultaneously cut and coagulate tissues- 6 piece	
	<b>Ultrasonic Energy Instruments:</b>	
1.	9cm shaft & 17 cm shaft, curved, tapered tip for precise dissection, seals 5 mm vessels, as well as lymphatic with 16 mm active blade & 240-degree activation, triggers support multiple hand positions – 6 Pc Each	
2.	5mm Hand Activated Curved Coagulating Shears capable of sealing blood vessels upto 5mm in diameter with 23 cm shaft length, ergonomic handle – 6 Pc	
3.	5mm Hand Activated Curved Coagulating Shears capable of sealing blood vessels up to 7mm in diameter with 36cm shaft length with adaptive tissue technology, ergonomic handle- 3 Pc consumables to ensure the same.	
	<b>Operating Environment</b>	
	The system offered shall be designed to operate normally under the conditions of Sudan. The conditions include Power Supply, Climate, Temperature, Humidity, etc.	
	Power supply: 220 – 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metre in length.	
	<b>Standards and Safety Requirements</b>	
	Must be USFDA, CE (93/42 EEC Directives), UL or TUV approved product.	
	This unit shall be certified to meet ISO9001 and/or ISO14971 and/or ISO 13485:2003/AC: 2007	
	Shall meet IEC-60601-1-2:2001 General Requirements of Safety for Electromagnetic Compatibility or must comply with 89/366/EEC, EMC directive	
	Electrical safety conforms to standards for electrical safety IEC 60601-1 (General requirement for Electrical safety of Medical Equipment).	
	<b>User Training</b>	
	Must provide user training (including how to use and maintain the equipment).	
	<b>Warranty</b>	
	Comprehensive warranty for 2 years from acceptance.	
	<b>Maintenance Service During Warranty Period</b>	
	During the warranty period supplier must ensure corrective/breakdown maintenance whenever required.	
	<b>Installation and Commissioning</b>	
	The bidder must arrange for the equipment to be installed and commissioned by certified or qualified personnel; any prerequisites for installation to be communicated to the purchaser in advance, in detail.	
	<b>Documentation</b>	
	User (Operating) manual in English	
	Service (Technical / Maintenance) manual in English	
	List of important spare parts and accessories with their part number and costing.	

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## Complete Mortuary Unit

No.	Item Specifications	Fill your Specification
I	Manufacturer Name:	
II	Model No.:	
III	Country of Origin:	
	<b>Technical Specifications</b>	
	<b>1. General</b>	
a.	Designed for long storage of cadavers.	
b.	Proper design ensuring best hygiene.	
c.	Energy Efficient.	
d.	Sturdy Construction	
e.	Light Weight.	
f.	Low Maintenance.	
	<b>2. Body of the Mortuary Chamber</b>	
a.	Mobile with brakes for castor wheels.	
b.	Corrosion free exterior and interior.	
c.	Double walled cooling units.	
d.	Outer shell constructed of thick steel sheets of type 304- SS grade	
e.	The inner chamber to be of heavy gauge stainless steel sheet of SS-304 grade.	
f.	The 100 mm gap between the walls to be filled with high grade polyurethane insulation, ensuring maximum thermal efficiency. Puff density should be 40kg/cu m.	
g.	The doors to be made of stainless steel for extra protection and long life.	
h.	The doors should be connected by sturdy heavy duty chrome plate hinges and fitted with hard chrome plated lubricated latches for opening the door. Individual standard key lock for each chamber.	
i.	All the doors to be fitted with high quality triple point neoprene rubber gaskets for air tight fittings and magnetic closure fittings and lock.	
j.	Washable interiors with channel for water outlet that can be plugged with rodent resistant material.	
k.	Vapour proof lamp inside	
	<b>3. Body Trays</b>	
	Sturdy, proper loading body trays, with telescopic sturdy castors and castor locks to prevent rolling out of the tray.	
	<b>a. Dimensions</b>	
	Width -1194 mm + 10 mm. Depth - 2362 mm + 10 mm. Height – 1745 mm + 10 mm.	
	Height with cooling unit – 2215 mm + 20 mm.	
	<b>b. Temperature &amp; Controls:</b>	
a.	Microprocessor based temperature control.	
b.	Temp range +2 to +8°C	
c.	Digital LED display, Touchpad data entry for adjustable temperature and alarm settings.	
d.	Audio visual alarm for high and low temperature	
e.	PUF insulation	
f.	Efficient condenser with automatic evaporating system (condensate).	
g.	Forced air circulation system	
h.	Automatic defrosting system.	
	<b>Operating Environment</b>	
	The system offered shall be designed to operate normally under the conditions of Sudan. The conditions include Power Supply, Climate, Temperature, Humidity, etc.	
	Power supply: 220 – 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metre in length.	
	<b>Standards and Safety Requirements</b>	
	Must be USFDA, CE (93/42 EEC, EMC Directive), UL or TUV approved product.	
	This unit shall be certified to meet ISO9001 and/or ISO14971 and/or ISO 13485:2003/AC: 2007	
	Shall meet IEC-60601-1-2:2001 General Requirements of Safety for Electromagnetic Compatibility or must comply with 89/366/EEC, EMC directive	
	Electrical safety conforms to standards for electrical safety IEC 60601-1 (General requirement for Electrical safety of Medical Equipment).	
	<b>User Training</b>	
	Must provide user training (including how to use and maintain the equipment).	
	<b>Warranty</b>	
	Comprehensive warranty for 2 years from acceptance.	
	<b>Maintenance Service During Warranty Period</b>	
	During the warranty period supplier must ensure corrective/breakdown maintenance whenever required.	
	<b>Installation and Commissioning</b>	
	The bidder must arrange for the equipment to be installed and commissioned by certified or qualified personnel; any prerequisites for installation to be communicated to the purchaser in advance, in detail.	
	<b>Documentation</b>	
	User (Operating) manual in English	
	Service (Technical / Maintenance) manual in English	
	List of important spare parts and accessories with their part number and costing.	

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## K Wire System

No.	Item Specifications	Fill your Specification
I	Manufacturer Name:	
II	Model No.:	
III	Country of Origin:	
	<b>Technical Specifications</b>	

Aluminium Case, perforated
Drill Bit, 2.0mm dia., for quick coupling
Triple Drill Guide 2.0 with 3 holes, opposite side 1 hole
Wire Passer, bending diameter
Wire Passer, bending diameter
Wire Tiltmeter with handle and two pegs
Holding Forceps for Cerclage Wires
Wire Bending Pliers
Parallel Pliers, flat nosed
Wire Cutter, large for 3.0 to 4.0 mm wire
Wire Cutter, short
Bending Iron, for Kirschner Wires 1.25 to 2.5mm dia.
Bending Iron, for Kirschner Wires 0.8 to 1.25mm dia.
Cerclage Wire, 1.0mm dia., with approx. eye
Cerclage Wire, 1.25mm dia., with eye
<b>Standards &amp; Safety Requirements</b>
Must submit ISO13485:2003/AC:2007 for Medical Devices AND
CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.
<b>Warranty</b>
Comprehensive warranty for 2 years.

**144 Floating Water Bath**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Technical Specifications</b>	
1.1	Water Bath Dimensions, inner (mm) 235 x 175mm Approx	
1.2	Temperature range of 30°C and 99°C.	
1.3	Selectable blue and white LED backlighting with dimmer control.	
1.4	Easily removable / replaceable LED light array.	
1.5	Convenient slide drying area at rear of the bath.	
1.6	Minimal workbench space.	
1.7	Ultra-fast heating system.	
1.8	Anti-bacterial powder coating finish.	
1.9	Digital temperature control accurate to ±0.1°C and 45°C.	
1.10	Miniature circuit breakers.	
2	<b>Accessories, spares and consumables</b>	
2.1	All standard accessories/consumables/parts required for the proper operation of the above item shall be included in the offer.	
3	<b>Operating Environment</b>	
3.1	The unit shall be capable of operating in ambient temperature of 10°C-45°C and relative humidity of 10-95%	
3.2	The unit shall be capable of being stored continuously in ambient temperature of -20°C -60°C and relative humidity of 10-95%	
4	<b>Power supply:</b>	
4.1	Input power supply: 220/240 V AC , 50Hz single phase schuko plug	
5	<b>Standards and Safety Requirements</b>	
5.1	Must submit ISO 9001 or ISO 13485:2003/AC: 2007 AND	
5.2	CE or USFDA or TUV approved product certificate.	
6	<b>Training</b>	
6.1	Must provide user & service training.	
7	<b>Warranty</b>	
10.1	Comprehensive warranty for 2 years after acceptance.	
11	<b>Maintenance Service During Warranty Period</b>	
11.1	Supplier must ensure planned preventive maintenance (PPM) along with corrective/breakdown maintenance whenever required.	
12	<b>Documentation</b>	
7.1	User (Operational) manual in English Should provide 2 sets(hardcopy and soft copy)	
7.2	Service (Technical / Maintenance) manual in English Should provide 2 sets (hardcopy and soft copy)	
7.3	List of important spare parts, accessories and consumables with their part numbers and costing.	

**145 Plasma Extractor**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Description of Function</b>	
1.1	Suitable for separating plasma from all types of blood collection bags.	
2	<b>Operational Requirements</b>	
2.1	Plasma Extractor (Plasma Separation Stand) complete system.	
3	<b>Technical Specifications</b>	
3.1	Automatic control system	
3.2	automatic separation of blood components from the blood bag.	
3.3	Acrylic Pressure Plate	
3.4	Audiovisual alarm	
3.5	Compression plate designed to exert uniform pressure on the blood bag.	
3.6	Power supply: 220-240V/ 50 Hz AC Single phase with appropriate plug. The power cable must be minimum 3 Meter	
4	<b>Accessories, spares and consumables</b>	
4.1	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer. Bidders must specify the quantity of every item included in their offer (including items not specified above).	
5	<b>Operating Environment</b>	
5.1	The product offered shall be designed to be stored and to operate normally under Power Supply, Climate, Temperature, Humidity, etc. for Sudan.	
6	<b>Standards, Safety and Training</b>	
6.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
6.2	CE (93/42 EEC Directives) or USFDA approved product certificate.	
7	<b>User Training</b>	
7.1	Must provide user training (including how to use and maintain the equipment).	
8	<b>Warranty</b>	
8.1	Comprehensive warranty for 2 years after acceptance.	
9	<b>Maintenance Service During Warranty Period</b>	
9.1	Supplier must ensure corrective/breakdown maintenance whenever required.	
10	<b>Installation and Commissioning</b>	
10.1	Supplier must accomplish proper installation & commissioning of the equipment on site.	
11	<b>Documentation</b>	
11.1	User (Operating) manual in English	
11.2	Service (Technical / Maintenance) manual in English	
11.3	List of important spare parts and accessories with their part numbers and costing.	

**146 Donor Chair**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Description of Function</b>	
1.1	Blood Donor Couch is a completely automatic enveloping, variable tilt chair and specially designed to make blood withdrawals easier, safe and functional, and also for other diagnostic and therapeutic areas	
2	<b>Operational Requirements</b>	
2.1	Provides a comfortable position for the donor.	
2.2	Variable positioning for either arm with comfortably wide armrests.	
2.3	Armrests have swinging out as well as up and down moving facility.	
2.4	Reclining and upright body positions with a smooth shifting to any position.	
2.5	Both sides have supporting brackets.	
2.6	Drawers provided for the upkeep of equipment & consumables.	
2.7	If a vasovagal attack occurs the Donor's head needs to be lowered immediately and his legs lifted above his heart level so that blood can flow back to the brain and other vital organs. This facility should be available	
3	<b>Technical Specifications</b>	
3.1	Comfortable chair type with soft padding for cushioning and rexin cover.	
3.2	Seat, back rest and leg rest size designed for donor comfort. It should have step less electric remote controlled height adjustment.	
3.3	Adjustable arm rest for donor's comfort and phlebotomist friendly	
3.4	Easily tilted to head low position, electrically operated	
3.5	Comfortable working level for the operator. Lifting capacity - Approx 200 kg.	
3.6	Lockable castors for easy mobility	
3.7	Storage Drawers for storing consumables & Blood Collection Monitors	
3.8	UP/DOWN control	
4	<b>System Configuration Accessories, spares and consumables</b>	
4.1	Donor Couch -01	
4.2	Dust Cover -01	
4.3	Power cable -01	
4.4	Arm Rests (pair) -01 pair	

4.5	Remote control -01	
5	<b>Operating Environment</b> The product offered shall be designed to be stored and to operate normally under Power Supply, Climate, Temperature, Humidity, etc. for Sudan.	
6	<b>Standards, Safety and Training</b> Must submit ISO13485:2003/AC:2007 for Medical Devices AND CE (03/42 EEC Directives) or USFDA approved product certificate.	
7	<b>User Training</b> Must provide user training (including how to use and maintain the equipment).	
8	<b>Warranty</b> Comprehensive warranty for 2 years after acceptance. Maintenance Service During Warranty Period During warranty period supplier must ensure corrective/breakdown maintenance whenever required.	
9	<b>Installation and Commissioning</b> Supplier must accomplish proper installation & commissioning of the equipment on site.	
10	<b>Documentation</b> User (Operating) manual in English Service (Technical / Maintenance) manual in English List of important spare parts and accessories with their part numbers and costing.	

**147 Fully Automated Elisa**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
	<b>Technical Specifications</b>	
	- Should be fully automatic, able to support all plate formats U bottom, V bottom and flat bottom 96-well micro plates.	
	- PC based system.	
	- Optical systems: LED lamp/ UV Xenon flash lamp.	
	- Detection: Absorbance based.	
	- Reading Time: <15 Seconds for 96-wells.	
	- Wavelength range: 340nm to 750nm or more	
	- Wave length selection should be double monochromatic with 1nm increment	
	- System should have capability to do qualitative, quantitative, kinetics with any formulae including validation, transformation, and factors and floating cut off.	
	- Absorbance Range: 0- 4 OD	
	- Resolution: 0.001 Abs.	
	- Accuracy: 1% +/- 0.010 OD	
	- Repeatability: 0.5% + -0.005 OD	
	- System should perform self-check before every measurement	
	- Power requirements: 220V-50/60Hz	
	- PC Requirements (All in one PC) : Intel core i7 processor, 4 GB RAM, 2 GB graphic, 1 TB hard disc, Full HD LED monitor 17", DVD writer, Wi-Fi, Wireless key board and mouse, 64 bit and latest version of Microsoft Window, with MS office licensed, Laser Printer (>20pages/min) >5000pages/refilling of cartridge	
	- Inbuilt shaking mode.	
	- PC Software packages (windows ® compatible) for on board data analysis.	
	- ELISA WASHER	
	- Fully automatic plate washer.	
	- Programmable.	
	- Alarm for monitoring the overflow and wash solution.	
	- Dispensing and aspirating needles should be separate	
	- Washer should have 8 or 12 channel wash head	
	- Should have 2-4 independent liquid channels	
	- Wash volume Should have residual volume of <2ml	
	- Calibration according to NIST/ DKD/PTB/ UKAS/NPL/UL/CUL listed.	
	<b>Operating Environment</b> The product offered shall be designed to be stored and to operate normally under Power Supply, Climate, Temperature, Humidity, etc. for Sudan.	
	<b>Standards, Safety and Training</b> Must submit ISO13485:2003/AC:2007 for Medical Devices AND CE (03/42 EEC Directives) or USFDA approved product certificate.	
	<b>User Training</b> Must provide user training (including how to use and maintain the equipment).	
	<b>Warranty</b> Comprehensive warranty for 2 years after acceptance. Maintenance Service During Warranty Period During warranty period supplier must ensure corrective/breakdown maintenance whenever required.	
	<b>Installation and Commissioning</b> Supplier must accomplish proper installation & commissioning of the equipment on site.	
	<b>Documentation</b> User (Operating) manual in English Service (Technical / Maintenance) manual in English List of important spare parts and accessories with their part numbers and costing.	

**148 Hot Air Oven 36L**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Description of Function</b>	
1.1	Hot Air Oven is required for heating a sample under controlled conditions.	
2	<b>Operational Requirements</b>	
2.1	Microprocessor based system with PID-temperature controller with integrated auto diagnostic system with fault indicator.	
3	<b>System Configuration</b>	
3.1	Microprocessor based Hot Air Oven.	
4	<b>Technical Specifications</b>	
4.1	Digital display mode	
4.2	Digital temperature control	
4.3	Capacity :36 litres	
4.4	Forced air circulation by quiet air turbine/Fan to ensure uniform temperature.	
4.5	Fitted with load indicator and safety thermostat take over indicator lamp. LCD/LED indicator.	
4.6	Temperature Variation +/- 1.	
4.7	Temperature Range: ambient to 250 oC	
4.8	Output available for data acquisition.	
5	<b>Accessories, spares and consumables</b>	
5.1	All standard accessories/consumables/parts required for the proper operation of the above item shall be included in the offer.	
6	<b>Operating Environment</b>	
6.1	The unit shall be capable of operating in ambient temperature of 10°C-45°C and relative humidity of 10-95%	
6.2	The unit shall be capable of being stored continuously in ambient temperature of -20°C -60°C and relative humidity of 10-95%	
7	<b>Power supply:</b>	
7.1	Must power supply: 220/240 V AC, 50Hz single phase schuko plug	
8	<b>Standards and Safety Requirements</b>	
8.1	Must submit ISO 9001 or ISO 13485:2003/AC: 2007 AND	
8.2	CE or USFDA or TUV approved product certificate.	
9	<b>Training</b>	
9.1	Must provide user & service training.	
10	<b>Warranty</b>	
10.1	Comprehensive warranty for 2 years after acceptance.	
11	<b>Maintenance Service During Warranty Period</b>	
11.1	Supplier must ensure planned preventive maintenance (PPM) along with corrective/breakdown maintenance whenever required.	
12	<b>Documentation</b>	
12.1	User (Operating) manual in English Should provide 2 sets(hardcopy and soft-copy)	
12.2	Service (Technical / Maintenance) manual in English Should provide 2 sets (hardcopy and soft-copy)	
12.3	List of important spare parts, accessories and consumables with their part numbers and costing.	

**149 ACT Machine**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
	<b>Technical Specifications</b>	
	- Equipment for assessment of Activated clotting time (ACT).	
	- It should be compact & portable for bed-side testing.	
	- It should have inbuilt mechanism to heat the cartridge.	
	- Range 37.0-42 Degree C	
	- It should require less than 2ml of blood for each test.	
	- It should be capable of displaying two reports at one time.	
	- Hundred cartridges for each test to be supplied with machine.	
	- There should be five year warranty of the machine.	
	- Measurement range 0-1500 sec.	
	- LED/LCD based screen for displaying results (fully digital display screen )	
	- Environment -15degree-30degree C.	

-	Data transfer capability: Printer option available facility to store view multiple patient data.
-	One Button Operation- Easy to Use.
-	Should be US FDA/EUROPEAN CE approved.
-	System should be microprocessor controlled designed to determine coagulation end points in whole blood, Citrated blood and plasma samples.
-	Dual well testing method.
-	Accents activate ACT tubes with celite glass bead activator, MAX ACT tubes with blended activator, all international technidine Hemochrom tubes.
-	List of consumables with price frozen for 5 years should be quoted separately.
-	List of users must be enclosed.
-	In case of malfunction/breakdown, the company should provide temporary back-up support within 24 hrs of registering the complaint till the time machine is repaired and returned.
-	It should have a battery backup of 2 hrs.
-	Desirable: Rate of Actual Clot Formation (CR, Clot Rate: Thrombin Activity, Low Molecular Weight Heparin Management).
-	Machine demonstration has to be done in the AIIMS, Jodhpur. Time and date of demonstration will be as per department decision.
<b>Accessories, Spare Parts and Consumables</b>	
All standard accessories/consumables/parts required for the proper operation of the above item shall be included in the offer.	
<b>Operating Environment</b>	
The unit shall be capable of operating in ambient temperature of 15°C-35°C and relative humidity of 10-95%	
The unit shall be capable of being stored continuously in ambient temperature of -5°C -40°C and relative humidity of 10-95%	
<b>Power supply:</b>	
Input power supply: 220/240 V AC , 50Hz single phase schuko plug	
Power supply: 220 – 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metres in length.	
<b>Standards &amp; Safety Requirements</b>	
Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
<b>Training</b>	
Must provide user & service training.	
<b>Warranty</b>	
Comprehensive warranty for 2 years.	
<b>Maintenance Service During Warranty Period</b>	
Supplier must ensure planned preventive maintenance (PPM) along with corrective/breakdown maintenance whenever required.	
<b>Documentation</b>	
User (Operational) manual in English Should provide 2 sets(hardcopy and soft-copy)	
Service (Technical / Maintenance) manual in English Should provide 2 sets(hardcopy and soft-copy)	
List of important spare parts, accessories and consumables with their part numbers and costing.	

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## Anesthesia Machine for Pediatric

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Description of Function</b>	
1.1	Anaesthesia Workstation is used for delivering anaesthesia agents to the patients during surgery. The complete unit also monitors the vital signs and ventilates the patients.	
2	<b>Operational Requirements</b>	
2.1	Anaesthesia machine complete and integrated with Anaesthesia gas delivery system; Circle absorber system; TEC Vaporisers for Halothane / Isoflurane / Sevoflurane ; Anaesthesia ventilator. Anaesthesia Gas monitoring with automatic Agent identification, EtCO2, Patient circuit Oxygenation status FIO2 and EtO2 (using Paramagnetic cell for no recurring cost)	
2.2	Essential accessories to make the system complete and compatible with the existing system of gas outlets.	
2.3	Demonstration of the equipment as per specifications is a must.	
3	<b>Technical Specifications</b>	
3.1	<b>Flow management</b>	
i	Should be Compact, ergonomic & easy to use	
ii	Machine should provide electronic gas mixing. User should be able to set Fresh Gas flow and FIO2 on the screen. Direct setting of FIO2 should be available to make setting of O2 plus Air flows faster across all flow ranges instantaneously.	
iii	Multi-color Touch Screen TFT display of at least 15" size, with display of flow of O2, N2O or Air. The screen should be movable and angle should be tiltable for better viewing	
iv	Dual flow sensing capability at inhalation and exhalation ports.	
v	Should have back-up O2 control which provides an independent fresh gas source and flow meter Control in case of electronic failure.	
vi	Gas regulators shall be of modular design/ graphic display.	
vii	One no. valve each for Oxygen & Nitrous Oxide. Separate Pipeline inlet for Oxygen, Nitrous Oxide and Air with electronic pressure gauges to indicate inlet pressures.	
viii	Electronic Hypoxic Guard to ensure minimum 25% O2 across all O2-N2O mixtures and Oxygen Failure Warning.	
ix	Auxiliary flowmeter for Oxygen	
x	Should have unlockable Oxygen flush to deliver oxygen flow of approximately 40 l/min.	
xi	Should have facility of delivering basal flow of oxygen on switching on the machine.	
xii	A single pneumatic/electric on/off switch should activate the gas flow and vaporization.	
xiii	Tenderer to quote individual price of TEC vaporizer for each drug (Halothane, Isoflurane, Sevoflurane, Desflurane)	
3.2	<b>Breathing system</b>	
i	All parts of the breathing system that are in contact with patient gas should be latex free and autoclavable.	
ii	Flow sensing capability at inhalation and exhalation ports, sensor connections shall be internal to help prevent disconnect.	
iii	Should not require tools when dismantled for cleaning and sterilization.	
iv	Sensor should not require daily maintenance.	
v	Should have bag / vent selecting valve integrated onto the absorber and should automatically turn on the ventilator when positioned to ventilator position.	
vi	Adjustable pressure limiting valve shall be flow and pressure compensated.	
3.3	<b>Standard Circle Absorber System</b>	
i	Should have adjustable pressure limiting valve, breathing circuit pressure measuring device.	
ii	Should have a bag/ventilator selecting valve integrated onto the absorber.	
iii	Should be suitable to use low flow techniques	
iv	Should have CO2 absorbent chamber canister	
v	Should have CO2 bypass without any air entrainment or loss of pressure / disconnect	
3.4	<b>Vaporizers</b>	
i	Vaporizer must be isolated from the gas flow in the off position and prevent the simultaneous activation of more than one vaporizer.	
ii	Vaporizer shall require no tools to mount.	
iii	Vaporizer shall mount to a Selectatec® manifold which allows easy exchange between agents.	
iv	Supplier must offer total vaporizer manufacturing capability-Desflurane, Enflurane, Sevoflurane, Halothane and Isoflurane.	
v	Back bar to accept two selectatec vaporizers	
3.5	<b>Ventilator (Integrated)</b>	
i	The workstation should have integrated Anaesthesia Ventilator system for adult and paediatric and neonates.	
ii	Ventilator should be pneumatically driven, electronically controlled and should be ascending bellows /bag in bottle type.	
iii	Ventilator should have Volume Control and Pressure Controlled, SIMV and PEEP, Dual control mode( PRVC/ PRVT/ PCV-VG etc.), Pressure Support	
iv	Ventilator should be capable of ventilating diverse range of patient groups from neonates to patients with restrictive airways with tidal volume range between 20 ml to 1500 ml with single bellows system. With option of delivering 5ml in neonatal mode.	
v	Assisted modes of breathing should be flow triggered.	
vi	Ventilator shall compensate for fresh gas flow and compliance of the entire circuit dynamically. Ventilator should have a tidal volume compensation capability to adjust for losses due to compression.	
vii	The workstation should be capable of delivery of low flow and minimal flow anaesthesia.	
viii	Ventilator should be capable of at least 120-150 l/min peak flow to facilitate rapid movement through physiologic "dead space" in the Pressure Control mode.	
ix	Ventilator should also display waveforms for flow and airway pressure.	
x	Ventilator should display spirometry loops including Flow-Volume and Pressure-Volume curves.	
3.6	<b>Display of Ventilator:</b>	
i	Display should be 15 inches with touch screen for easy access to settings.	
ii	Display pressure vs time, flow vs time , scalars	
iii	Should display flow volume, pressure volume loops	
iv	Should display respiratory gas monitoring, and anaesthetic agent monitoring . Values should display Automatic Agent identification, concentration, inspired and expired, Age corrected MAC value.	
v	Should be from the same manufacturer as of the anaesthesia system.	
a	Tidal volume (VT)	
b	Inspiratory/expiratory ratio (I:E)	
c	Inspiratory pressure	
d	Pressure limit (Plimit)	
e	Positive End Expiratory Pressure (PEEP)	
4	<b>System Configuration Accessories, spares and consumables</b>	
4.1	<b>Anaesthesia Gas Delivery system -01</b>	
4.2	Circle absorber -01	
4.3	Ventilator -01	
4.4	TEC Vaporizer Sevoflurane -01	
4.5	TEC Vaporizer Isoflurane -01	
4.6	Adult and Paediatric autoclavable silicone breathing circuit each	
4.7	Accessories Anaesthetic gases measurement-01 set	
4.8	Standard accessories to make all parameters working- 01 set	
5	<b>Environmental factors</b>	
5.1	The unit shall be capable of operating continuously in ambient temperature of 10°C - 40°C and relative humidity of 15-90%	
5.2	The unit shall be capable of being stored continuously in ambient	
5.3	Shall meet IEC-60601-1-2: 2001(Or Equivalent BIS) General Requirements of Safety for Electromagnetic Compatibility.	
5.4	Safe disposal system/port of waste anaesthetic gases (AGSS Anaesthetic Gas Scavenging System/Port) should be in place.	
5.5	Supplier will be held responsible if this is not ensured at the time of installation	
6	<b>Power Supply</b>	
6.1	Power input to be 220-240VAC, 50Hz	
6.2	Resettable over current breaker shall be fitted for protection	
6.3	Suitable Servo controlled Stabilizer/CVT	
6.4	The Anaesthesia Delivery system and Monitoring system will have a one hour battery back up.	
7	<b>Standards, Safety and Training</b>	
7.1	Monitors and Anaesthesia Workstations should be FDA /BIS/CE approved product.	
7.2	Electrical safety conforms to standards for electrical safety IEC 60601 / IS-13450	
7.3	Manufacturer should be ISO certified for quality standards.	

7.4	Certified to be compliant with IEC 60601-2-13-Medical Electrical Equipment	
7.5	Should have local service facility. The service provider should have the necessary equipments recommended by the manufacturer to carry out preventive maintenance test as per guidelines provided in the service/maintenance manual.	
7.6	All components like anaesthesia machine, vaporisers, and ventilator should be only from one manufacturer/principal.	
7.7	Warranty of 2 years.	
7.8	Supplier will assure supply of spares for a minimum period 10 years	
8	<b>Documentation</b>	
8.1	User Manual in English	
8.2	Service manual in English	
8.3	List of important spare parts and accessories with their part number and costing	
8.4	Certificate of Calibration and inspection from the factory	
8.5	Log book with instructions for daily, weekly, monthly and quarterly maintenance checklist. The job description of the hospital technician and company service engineer should be clearly spelt out.	
8.6	List of Equipment available for providing calibration and routine maintenance support as per manufacturer documentation in service / technical manual.	
8.7	Compliance Report to be submitted in a tabulated and point wise manner clearly mentioning the page/para number of original catalogue/data sheet. Any point, if not substantiated with authenticated catalogue/manual, will not be considered.	
8.8	Supplier should have past experience of at least ten years in sales and service of Anaesthesia workstations.	

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## Anterior Cervical Surgical Set

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
	<b>Technical Specifications</b>	
	S.S. Tray with lid – 9" x 6" QTY:1	
	S.S. Bowl - medium QTY:1	
	Sponge holding forceps QTY:4	
	SIMS Speculum – Double bladed - large QTY:4	
	Anterior Vaginal wall retractor QTY:1	
	Needle holder QTY:1	
	Artery Forceps – long – 8" – straight QTY:1	
	Artery Forceps – long – 8" – curved QTY:1	
	<b>Standards &amp; Safety Requirements</b>	
	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
	<b>Warranty</b>	
	Comprehensive warranty for 2 years.	

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## Anterior Spinal Surgical Set

No.	Item Specifications	Fill your Specification
	<b>Manufacturer Name:</b>	
	<b>Model No.:</b>	
	<b>Country of Origin:</b>	
	<b>Technical Specifications</b>	
	Angular template 23-26 degrees QTY:1	
	Angular template 29-32 degrees QTY:1	
	Angular template 33-36 degrees QTY:1	
	Anterior body retractor 15mm QTY:1	
	Anterior body retractor 20mm QTY:1	
	Wide Anterior body retractor 20mm QTY:1	
	Anterior body retractor 25mm QTY:1	
	Resector Anterior body 34 mm QTY:1	
	Flat nerve root retractor 12mm QTY:1	
	Angled nerve root retractor 15mm QTY:1	
	Vertebral body retractor 15mm QTY:1	
	Vertebral body retractor 20mm QTY:2	
	Vertebral body retractor 30mm QTY:1	
	L-osteotome 8mm x 6mm QTY:1	
	L-osteotome 6mm x 8mm QTY:1	
	Straight osteotome 10mm QTY:1	
	Body reamer small QTY:1	
	Body reamer large QTY:1	
	Distractor (6/8mm) QTY:1	
	Wide Nerve Root Retractor, Long QTY:1	
	Bayoneted Penfield for Long QTY:1	
	Suction tip Long QTY:1	
	Cannulated Reamer with T-Handle QTY:1	
	Straight Osteotome - 1/4" QTY:1	
	Straight Osteotome - 1/2" QTY:1	
	Angled Osteotome - 1/4" QTY:1	
	Angled Cup Curette, Straight QTY:1	
	Angled Cup Curette, Left QTY:1	
	Angled Cup Curette, Right QTY:1	
	Angled Ring Curette, Straight Hood QTY:1	
	Angled Ring Curette, Angled Hood QTY:1	
	Angled Ring Curette, Bent Hood QTY:1	
	Rasp for end plate preparation QTY:1	
	Rotating Cutter, Straight QTY:1	
	Rotating Cutter, Curved QTY:1	
	Pull Scraper QTY:1	
	Push Scraper QTY:1	
	Impacted distractor 5mm QTY:1	
	<b>Standards &amp; Safety Requirements</b>	
	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
	<b>Warranty</b>	
	Comprehensive warranty for 2 years.	

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## Arteriovenous Fistula Set

No.	Item Specifications	Fill your Specification
	<b>Manufacturer Name:</b>	
	<b>Model No.:</b>	
	<b>Country of Origin:</b>	
	<b>Technical Specifications</b>	
	MAIER FORCEPS W/RCHT CVD260MM QTY:1	
	BACHHAUS TOWEL CLAMP 110MM QTY:4	
	TOWEL CLAMP FOR PAPER CLOTHS 115MM QTY:2	
	SCALPEL HANDLE #3 125MM QTY:2	
	METZENBAUM SCISSORS CVD 145MM QTY:1	
	IRIS SCISSORS STR 5/5 110MM QTY:1	
	LA GRANGE SCISSORS SERR 115MM QTY:1	
	JAMESON-WEBBER TENOTOMY QTY:1	
	SCISCV0130MM QTY:1	
	SURGICAL SCISSORS STR 5/145MM QTY:1	
	ADSON TISSUE FCPS FINE W/LXZI 150MM QTY:2	
	DEBAKEY ATR FCPS 1.5MM STR150MM QTY:2	
	ULTRA-LIGHT FORCEPS 1.2MM150MM QTY:1	
	MICRO FORCEPS STR SMOOTH 100MM QTY:2	
	MICRO-HALSTED FORCEPS DEL CVD QTY:4	
	HALSTED-MOSQUITO FORCEPS DELSTR125MM QTY:2	
	PEAN ARTERY FORCEPS STR 125MM DEL QTY:2	
	MICRO-ADSON FORCEPS SERR 150MM QTY:2	
	BABY-MIXTER FORCEPS CVD 140MM QTY:1	
	MINI-BULLDOGCLAMP STR 14/35MM QTY:2	
	MICRO ATR BULLDOGCLAMP ANG 10/45MM QTY:2	
	MUELLER MICRO-VESSEL CLMPSTR50G-FORCE QTY:2	
	MUELLER MICRO-VESSEL CLMPSTR50G-FORCE QTY:2	
	MICRO NEEDLE HOLDER/W/0 CATCHCVD160MM QTY:1	
	TC RYDER NEEDLE HOLDER-DELSERR135MM QTY:1	
	TC RILE WOOD NDL HLDSTRSERR 145MM QTY:1	
	VOLKMANN RETRES- PRGBLUM18X13MM220MM QTY:1	
	DESMARRES RETRACTOR 12X16MM QTY:1	
	DESMARRES RETRACTOR 12X16MM 140MM QTY:1	
	WEITLANER RETRACTOR 2X3 SEMI-S110MM QTY:1	
	DEBAKEY DILATOR MALL 1.0MM 190MM QTY:1	
	DEBAKEY DILATOR MALL 1.5MM 190MM QTY:1	
	DEBAKEY DILATOR MALL 2.5MM 190MM QTY:1	

DE'BAKEY DILATOR MALL 3.0MM 190MM QTY:1	
DE'BAKEY DILATOR MALL 3.5MM 190MM QTY:1	
DE'BAKEY DILATOR MALL 4.0MM 190MM QTY:1	
DE'BAKEY DILATOR MALL 4.5MM 190MM QTY:1	
DE'BAKEY DILATOR MALL 5.0MM QTY:1	
DE'BAKEY DILATOR MALL 7.0MM 190MM QTY:1	
DE'BAKEY DILATOR MALL 9.0MM 190MM QTY:1	
LABORATORY DISH 0.16 L QTY:1	
LABORATORY DISH 0.3 L QTY:1	
KIDNEY TRAY STAINLESS STEEL 250MM QTY:1	
<b>Standards &amp; Safety Requirements</b>	
Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
<b>Warranty</b>	
Comprehensive warranty for 2 years.	

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**Auditory Brainstem Response (ABR) Machine**

No.	Item Specifications	Fill your Specification
	<b>Manufacturer Name:</b>	
	<b>Model No.:</b>	
	<b>Country of Origin:</b>	
	<b>i Technical Specifications</b>	
	Auditory Brainstem Evoked Response (ABR)/Auditory Steady State Response (ASSR)	
	Brand New and latest Model	
	Can generate good and repeatable wave forms	
	PC control:	
	USB: USB 1.1 or 2.0 for input/output for computer communication.	
	USB: USB 1.1 or 2.0 for input/output for computer communication.	
	Construction: Trolley with metal cabinet	
	<b>ii AUDITORY BRAINSTEM EVOKED RESPONSE (ABR)</b>	
	<b>Pre-amplifier:</b>	
	Two channels standard:	
	Cable Collector (4 electrodes). Standard 45-55 cm Gain: 80dB/60dB	
	Frequency response: 0.5 – 5000Hz/Noise: 4nV/VHz, 0.22 µV	
	Common Mode Rejection Ratio: Minimum > 118 dB. Typical 130 dB <100 Hz RMS (0 – 3 kHz)	
	Radio frequency immunity: Typically, 20 dB improvement	
	Max input offset voltage: as per manufacturer's specification	
	Input impedance: >10 MΩ	
	Power from main units: as per manufacturer's specification	
	Impedance measurement: Selectable for each electrode	
	Measurement frequency: 30-1000 Hz	
	Waveform: Rectangular	
	Measurement current: as per manufacturer's specification	
	Range: 0.5 kΩ – 25 kΩ	
	<b>Stimulus:</b>	
	Stimulus Types: Click, CE-Chirp, Tones, CE-Chirp Octave Bands, Speech stimuli, User File	
	Stimulus rate:	
	0.1 to 100 stimuli per second in steps of 0.1	
	Envelopes/Windows:	
	Bartlett, Blackman, Gaussian, Hamming, Hanning,	
	Rectangle, Trapezoidal, Extended Cosine and Manual (Rise/Fall and Plateau)	
	<b>Masking:</b>	
	White noise, specific level or relative to stimulus level	
	Calibrated and presented in peSPL or SPL	
	Transducer	
	Insert phone	
	Headphone with independent calibration	
	Bone conductor	
	Level: 20 – 135.5 dB peSPL or -10 to 109 SPL	
	Polarity:	
	Condensation, Rarefaction, Alternating.	
	Click: 100 µs (200Hz -11kHz)	
	Click duration: 1000µSec	
	Tone Burst Frequency: 250, 500, 750, 1000, 1500,	
	2000, 3000, 4000, 6000 and 8000 Hz.	
	Tone Burst Stimulation Time: Stimulation up to 800ms	
	NB LS Freq.: 500, 1000, 2000 and 4000 Hz	
	Broadband LS: 200Hz -11kHz	
	Relative Masking Level:	
	+30dB to -40 dB relative to stimulus level. Maximum masking levels:	
	Insert phones: 110dB SPL	
	Headphones: 110dB SPL Insert phones: 110dB SPL	
	<b>Absolute Masking Level:</b>	
	0dB to 110 dB SPL absolute level. Maximum masking levels:	
	Insert phones: 110dB SPL Headphones: 110dB SPL Insert phones: 110dB SPL	
	<b>Recording:</b>	
	Analysis Time: -150 ms prior to stimuli and up to 1050 ms	
	A/D Resolution: 16 bit	
	Sampling frequency: 200-40,000 Hz	
	Artifact Reject System: Standard voltage-based system	
	Anti-aliasing filter: Internal filter in ADC	
	Dots per Trace: 450 displayed.	
	Low Pass Filter: 20 – 12000 Hz	
	High Pass Filter: 0.1 Hz to 500 Hz	
	DSP Low Pass Filter: None, 100, 300, 750, 1k, 1.5k, 2k, 3k, 4k, 5k, 7.5k Hz	
	DSP High Pass Filter: 0.5, 1.0, 3.0, 10, 33, 100 Hz	
	<b>Display Gain:</b>	
	General Display Gain: Applicable during testing.	
	Single Curve Display Gain: Applicable during testing.	
	<b>Controlled parameters:</b>	
	Stimuli Rate, Number of stimuli, Polarity, Click, Tone Burst (Frequency, no. of sine waves, window), Stimulus intensity, Number of curves per intensity, Intensity (Ascending, Descending), Soft attenuator, Stimulus ear, Transducer, Masking level,	
	Preliminary filter setting, Recording onset, Automatic next intensity (Wave repro level on screen), General Display Gain, Single Curve	
	Display Gain, Baseline, Latency norm, Report	
	templates, Print out, Manual stimulus to familiarization, Talk Forward.	
	<b>Data Recovery:</b>	
	Lost data due to crash of operating system will in almost all cases be available upon re-establishing operating system operation.	
	<b>iii AUDITORY STEADY STATE RESPONSE (ASSR)</b>	
	<b>Pre-amplifier:</b>	
	Two channels standard:	
	Cable Collector (4 electrodes). Standard 45-55 cm.	
	Gain: 80 dB/60 dB	
	Frequency response: 0.5 – 5000 Hz	
	Common Mode Rejection Ratio: Minimum >110 dB.	
	Radio frequency immunity:	
	Typically 25 dB improvement over previous available designs	
	Max input offset voltage: as per manufacturers specifications	
	Input impedance: >10 MΩ	
	Measurement frequency: 30-35 Hz	
	Waveform: Rectangular	
	Measurement current: 19µA	
	Range: 0.5 kΩ – 25 kΩ	
	<b>Stimulus:</b>	
	Stimulus rate: 40 and 90 Hz	
	Masking: White noise 0 – 100 dB SPL	
	Analysis Time: 5-15 minutes	
	<b>Recording:</b>	
	Sampling frequency: 30 kHz	
	Artifact Reject System: Standard voltage-based system	
	Gain: 74 – 110 dB. Auto or Manual selection	
	Channels: 2, with separate detection algorithm	
	Algorithmic Sensitivity: 99% or 95%, false pass probability	
	Reject levels: Manual 5, 10, 20, 40, 80, 160, 320,	
	640 µV input	
	Anti-aliasing filter:	
	Analog 5kHz, 24 dB / octave	
	Display:	
	Independent control of up to 8 simultaneous stimuli (max 4 per ear)	
	Display Gain:	

	Independent start, stop control for each of the 8 stimuli	
	Controlled parameters:	
	Stimulus level control for each of the 8 stimuli	
	False pass probability 1 or 5%	
	Controlled parameters: Stimulus level control for each of the 8 stimuli	
	With USB cable 2m	
	With Power cable	
	With Software CD, with upgrades during warranty period	
	With database software	
	With Mouse pad	
	With Transducers:	
	Ear-Tone ABR insert phones included. Independent calibration for TDH39 Independent calibration for B71	
	With Preamplifier	
	ETB Standard electrode cable with buttons ETU Universal electrode cable	
	ETR Electrode cable with re-usable electrodes ETS Electrode cable spring	
	PEG15 Set of 25 single use pre-gelled electrodes ETT Tip trode electrode cable set (only EP25) TTE25 Tip trode gold electrodes 10 pcs. for EcochG	
	With 20 pcs. of infant eartip (2 x 10)	
	With Ear Tone ABR Insert ear phones w/foam tips	
	With SPG15 Tube of skin preparation gel	
	With Electrode gel	
	With Gauze Swabs	
	With LK15 Loop Back unit for system performance check	
	With Alcohol pads (100 pcs.)	
	Firewire: 1	
	Audio-Headphone Out (1/8" mini)	
	Audio-Microphone In (1/8" Mini)	
	FireWire Port	
	Available Interfaces: - Mini PCI Port	
	USB - Universal Serial Bus Port (x 4)	
	Ethernet Type: 10/100 Mbps	
	With Microphone input	
	With Headphone jack	
	Wireless connection: 802.11 a/b/g	
	Bluetooth	
	Slots: SD Card or equivalent	
	Memory size: 2048 OMB or higher	
	Memory type: DDR2 SDRAM or higher	
	Memory speed: 667.0 MHz or higher	
	Speakers: Stereo	
	With SD Card or equivalent.	
	Operating System: Microsoft Windows 10 or higher	
v	1-Terabyte External SSD, 2 pcs	
vi	Laptop	
	Any band with i7-1165G7	
	16GB ITB SSD 15.6" MX330 2GB win10 Pro	
	*802.11 a/b/g/n/ac/ax wireless LAN	
	*Dual Band (2.4GHz and 5GHz)	
	*x2 MU-MIMO technology	
	*Supports Bluetooth 5.1	
	*WiFi CNVI interface	
	*Audio Purified. Voice technology with two built-in microphones. Features include far-field pick-up, keystroke suppression, voice tracking adaptive beam forming, voice recognition enhancement, three pre-defined modes: voice recognition, personal call, conference call	
	*Compatible with Cortana with voice	
	*Two built-in stereo speakers card reader SD Card reader Camera videoconferencing HD webcam with:	
	-1280x720 resolution	
	-720p HD audio/video recording	
	-Super high dynamic range imaging (SHDR)	
	-Camera shutter cover USB Type-C port: USB 3.0 Gen 2 (up to 10Gbps)	
	*Display Port over USB-C	
	*Thunderbolt 4	
	*USB charging 5V: 3A	
	*DC-in port 20V: 60W	
vii	Printer	
	Multifunction: Printer, scanner and copier	
	Connectivity: USB/Wireless	
	Compatible devices: Smartphone PC, Laptop	
	Colored laser printer: Supply of toner printer during warranty period	
viii	Consumables:	
	Ear-Tone ABR insert Eartips (for neonates, infant and adult) 500 pairs per size	
	Independent calibration for TDH39, insert phone, and bone transducer	
	Standard electrode cable with buttons	
	Universal electrode cable	
	Electrode cable with re-usable electrodes, 1 pc	
	Electrode cable spring, 1 pc	
	Alcohol pads Gauze swabs, 100 pcs.	
	Tip trode electrode cable set (only EP25)	
	Tip trode gold electrodes 10 pcs. for EcochG	
	Loop Back unit for system performance check	
	Insert Pre-gelled electrodes	
	Electrode gel, 1 gallon	
ix	Spare Parts	
	Ear-Tone Foam Insert Eartips (different sizes for neonate, infant and adult).	
	500 pairs per size	
x	Supply and installation of grounding, ensuring optimal generation of waveforms.	
xi	With stretcher bed- 1 unit	
2	Operating Environment	
	The unit shall be capable of operating in ambient temperature of 15°C-35°C and relative humidity of 10-95%	
	The unit shall be capable of being stored continuously in ambient temperature of -5°C -40°C and relative humidity of 10-95%	
3	Power supply:	
	Input power supply: 220/240 V AC, 50Hz single phase schuko plug	
	Power supply: 220 - 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metres in length.	
4	Standards & Safety Requirements	
	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
5	Training	
	Must provide user & service training.	
6	Warranty	
	Comprehensive warranty for 2 years.	
7	Maintenance Service During Warranty Period	
	Supplier must ensure planned preventive maintenance (PPM) along with corrective/breakdown maintenance whenever required.	
8	Documentation	
	User (Operational) manual in English Should provide 2 sets(hardcopy and soft-copy)	
	Service (Technical / Maintenance) manual in English Should provide 2 sets(hardcopy and soft-copy)	
	List of important spare parts, accessories and consumables with their part numbers and costing.	

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## Autoclave 110L

No.	Item Specifications	Fill your Specification
	Manufacturer Name:	
	Model No.:	
	Country of Origin:	
1	Description of Function	
	Autoclaves are required to sterilize objects under high temperature and pressured steam.	
2	Operational Requirements	
2.1	Suitable for hospital dressings, linen, surgical instruments, glassware, culture media and laboratory wares etc.	
2.2	Horizontal electrically heated autoclave is required.	
3	System Configuration	
3.1	Autoclave for CSSD (Central Sterile Services Department) approx. 110 L, stand alone.	
4	Technical Specifications	
4.1	Single door high pressure steam sterilizer with double / triple walled, steam jacket and separate boiler	
4.2	Material of construction:	
	B Sterilizer chamber: SS 316	
	B Door SS 316	
	B Jacket Stainless Steel	
	B Loading carriage SS 316	
	B Door Gasket : Silicon or better	
	B Insulation: fibre glass resin bonded wool or better	
	B Insulation cover: SS sheets	

4.3	Operating temperature 121 OC – 138 OC pressure 1.1 to 2.2 kg/cm2 of steam pressure.	
4.4	Capacity- 110 litres.	
4.5	Digital microprocessor temperature controller with stored memory.	
4.6	Separate cycle timer and easy to read display pressure gauges.	
4.7	Indicating lights display all functions including heating, low water, timer operation, temperature set point and actual temperature.	
4.8	Spring loaded safety valves and automatic vacuum breaker for jacket.	
4.9	Removable plate screen for chamber drain.	
4.10	SS baffle for even steam distribution in the chamber.	
4.11	Safety lock for door: pressure lock safety device.	
4.12	Low water off.	
4.13	Earth leakage breaker (ELB).	
4.14	Must include chart recorder for temperature and pressure, increased power rating for rapid heating applications.	
4.15	Electrical heating element to have over-temperature protection/cut out.	
5	<b>Accessories, spares and consumables</b>	
5.1	<b>Accessories:</b>	
	B 3 dressing drum s--- (seamless stainless steel construction, suitable to fit into the autoclave).	
	B A minimum of two spare lid gaskets.	
5.2	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer.	
6	<b>Operating Environment</b>	
6.1	The product offered shall be designed to be stored and to operate normally under Power Supply, Climate, Temperature Humidity, etc. for Sudan.	
6.2	Power supply: 380-440 V (3 Phase), 50Hz fitted with appropriate plug.	
7	<b>Standards and Safety Requirements</b>	
7.1	Must submit ISO 9001 or ISO 13485:2003/AC:2007 AND	
7.2	CE (93/42 EEC Directives) or USFDA approved product certificate.	
7.3	Electrical safety conforms to standards for electrical safety IEC-60601.	
8	<b>User Training</b>	
8.1	Must provide user training (including how to use and maintain the equipment).	
9	<b>Warranty</b>	
9.1	Comprehensive warranty for two years.	
10	<b>Maintenance Service During Warranty Period</b>	
10.1	During the warranty period supplier must ensure corrective/breakdown maintenance whenever required.	
11	<b>Documentation</b>	
11.1	User (Operating) manual in English	
11.2	Service (Technical / Maintenance) manual in English	
11.3	List of important spare parts and accessories with their part number and costing.	

**156 Blanket Warmer for Neonate**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
IV	<b>Technical Specifications</b>	
	Compact size with low weight.	
	Advance interface with one touch temperature selection modes - Ambient, 36.0 C, 400 C, 440 C.	
	Fast warm up and high air flow for quick and efficient thermal therapy.	
	Easily available and cheap blankets in different sizes.	
	Over / under temperature and disconnect audible and visual alarms.	
	Hose and blanket connectors must fit securely without air leak.	
	Accuracy in temperature delivery within ±1° C.	
	<b>Warranty</b>	
	Comprehensive warranty for 2 years.	
	<b>Documentation</b>	
	User (Operating) manual in English Should provide 2 sets(hardcopy and soft-copy)	

**157 Bronchoscopy Machine**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
IV	<b>Technical Specifications</b>	
	1. It should have superior image quality with crisp, clear images and true-to life colour.	
	2. Should have facility for pressure regulated leakage testing through inbuilt air pump of light source.	
	3. Scope should have four user programmable remote switches to improve operability.	
	4. Outer diameter should be 6 mm or less.	
	5. Channel diameter should be 2.8 mm or more.	
	6. Insertion tube length should be 60 cm or more.	
	7. Field of view should be 120 degree or more.	
	8. Depth of Field should be 3-100mm or better.	
	9. Angulation – Up-180 degree, Down-130 degree or better.	
	10. Minimum visible distance should be 3mm or less.	
	11. Should be compatible with laser and electrocautery.	
	12. Scope should be compatible with Narrow Band Imaging/Iscan-SE/BU	
	<b>Video Processor &amp; Light source:</b>	
	1. Should be a Compact Light source/processor with LED source (inbuilt) with back up.	
	2. Should be able to provide 16:9 and 16:10 output for a HDTV monitor and should be compatible with Analog and digital (HD-SDI) and DVI output) to reproduce high definition images/video.	
	3. Should have HD/SD-SDI output, DVI, Y/C, Composite output signals	
	4. Should be equipped with optical image enhancement technology for detailed observation by enhancing visibility of blood capillaries& mucosa like Narrow Band Imaging/Iscan-SE/BU	
	5. Should contain portable memory USB slot for still images recording.	
	6. Should facilitate waterproof scope connection for minimal damage due to water.	
	7. Should have automatic white balance function and leakage testing.	
	8. Touch button control panel.	
	9. Come along with compatible video cable.	
	<b>High definition medical grade Monitor</b>	
	Full HD LCD/ LED 21 inch or more monitor with high resolution lower power consumption	
	1. Should have picture-in-picture and picture- out-picture for viewing side by side images.	
	2. Company should have good service support infrastructure and preferably	
	3. Trolley, recording system with laptop/desktop, printer must be quoted.	
	<b>Essential Accessories</b>	
	1. One reusable cups with needle type biopsy forceps compatible with the scope channel diameter.	
	2. Two reusable cup biopsy forceps compatible with the scope channel diameter.	
	3. Ten suction valves (autoclavable).	
	<b>Operating Environment</b>	
	The unit shall be capable of operating in ambient temperature of 15°C-35°C and relative humidity of 10-95%	
	The unit shall be capable of being stored continuously in ambient temperature of -5°C -40°C and relative humidity of 10-95%	
	<b>Power supply:</b>	
	Input power supply: 220/240 V AC, 50Hz single phase schuko plug	
	Power supply: 220 – 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metres in length.	
	<b>Standards &amp; Safety Requirements</b>	
	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
	<b>Training</b>	
	Must provide user & service training.	
	<b>Warranty</b>	
	Comprehensive warranty for 2 years.	
	<b>Maintenance Service During Warranty Period</b>	
	Supplier must ensure planned preventive maintenance (PPM) along with corrective/breakdown maintenance whenever required.	
	<b>Documentation</b>	
	User (Operating) manual in English Should provide 2 sets(hardcopy and soft-copy)	
	Service (Technical / Maintenance) manual in English Should provide 2 sets(hardcopy and soft-copy)	
	List of important spare parts, accessories and consumables with their part numbers and costing.	

**158 Capsulotomy Lens**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
IV	<b>Technical Specifications</b>	
	Stabilizes the patient's eye and minimizes the possibility of pitting the IOL during Nd: YAG laser capsulotomy. A 10mm diameter, 66D magnifying button in the centre of the lens enhances visualization and allows precise laser focus on the posterior capsule.	
	<b>Operating Environment</b>	
	The unit shall be capable of operating in ambient temperature of 15°C-35°C and relative humidity of 10-95%	
	The unit shall be capable of being stored continuously in ambient temperature of -5°C -40°C and relative humidity of 10-95%	
	<b>Standards &amp; Safety Requirements</b>	
	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
	<b>Warranty</b>	

	Comprehensive warranty for 2 years.	
159	Cranial Surgical Set	
No.	Item Specifications	Fill your Specification
I	Manufacturer Name:	
II	Model No.:	
III	Country of Origin:	
	<b>Technical Specifications</b>	
	SCALPEL HANDLE NUMBER 7-160-170 MM QTY:2	
	DISSECTING SCISSOR DE'BEKEY-170-180 MM CURVED QTY:2	
	SCHMIEDEN-TAYLOR DURA SCISSORS, 150-160 MM QTY:2	
	DANDY ARTERY FORCEPS CURVED ,SIDEWAYS, 140-150MM QTY:20	
	TOWEL CLIPS 140-150MM QTY:20	
	GIGLI HANDLE FOR WIRE SAWS QTY:4	
	DE MARTEL GUIDE, FLEXIBLE, 350MM QTY:4	
	COATED BRAIN SPATULA,MALLEABLE, CONICALLY TAPERED ,SMOOTH SURFACE 200 MM 8X4MM 13X6MM QTY:4	
	PENFIELD DURA CURRETE AND DISSECTOR (17-18 MM) PENFIELD DURA DISSECTORS 190-200 MM, QTY:1	
	PENFIELD DURA DISSECTORS 200-210 MM, QTY:1	
	CASPER MICRODISSECTOR 200-210MM, 1MM TIP QTY:2	
	MICRO-HOOK BLUNT 200-210 MM QTY:1	
	VASARAIL SPRING-HOOK FOR GALEA FIXATION WITH BULL DOG CLAMP QTY:10	
	WATSON-CHEYNE PERIOSTEAL ELEVATOR 180-190 MM QTY:1	
	FLAT HANDLE PERIOSTEAL ELEVATOR, KRAMER, 180-190MM, 10MM WIDTH QTY:1	
	WILLIGER BONE FLAP ELEVATOR 160-170 MM, 6MM QTY:1	
	VENTRIC PUNCTURE CANNULA 100 MM, JEFFERSON'S (COPPER)QTY:2	
	HEGAR MAYO NEEDLE HOLDER 180-190MM ,0.5MM TIP QTY:1	
	DELICATE NEEDLE HOLDER, DESAKEY 160-170 MM 0.2 MM TIP 0.4MM TIP QTY:1	
	DURA HOOK-130 -140MM (CAIRNS) QTY:2	
	BONE RONGEURS LEUR 170 - 180 MM STRAIGHT AND CURVED QTY:each	
	BONE RONGEURS CURVEOROMA 200 - 210 MM QTY:2	
	BONE RONGEURS LEMPERT 150 - 160 MM STRAIGHT QTY:2	
	WEITLANER SELF RETAINING RETRACTOR 190-200 MM,BLUNT QTY:2	
	MICRO BAYONET FORCEPS FINE TIP180-190 MM QTY:2	
	MICRO BAYONET FORCEPS FINE TIP200- 210 MM QTY:2	
	MICRO BAYONET FORCEPS BLUNT TIP180-190 MM QTY:2	
	MICRO BAYONET FORCEPS BLUNT TIP200- 210 MM QTY:2	
	BAYONET FORCEPS DEBAKEY TIP 200- 210 MM QTY:2	
	PLAIN STRAIGHT FORCEPS DISSECTING 140 - 150 MM QTY:2	
	MICRO DISSECTING FORCEPS150-160 MM QTY:2	
	TOOTH TISSUE FORCEP 140 - 150 MM QTY:2	
	DURAL TOOTH FORCEPS, DELICATE, MICRO ADSON, 140 - 150MM QTY:4	
	FERGUSSON SUCTION CANULAE WITH STYLET ,WITH THUMB REST 180 - 190 MM 1.5MM, 2MM, 2.5MM,3MM, 4MM QTY:2each	
	TUMOUR FORCEPS, BAYONET SHAPED 3MM RING, 200-210MM SERRATED SPOON SHAPED QTY:2	
	TUMOUR FORCEPS, BAYONET SHAPED 5MM RING, 200 - 210MM SERRATED SPOON SHAPED QTY:2	
	MICRO SCISSORS, BAYONET SHAPED, STRAIGHT 180 - 190MM QTY:2	
	MICRO SCISSORS, BAYONET SHAPED, STRAIGHT 200 - 210MM QTY:2	
	MICRO SCISSORS, BAYONET SHAPED, STRAIGHT 220 - 230MM QTY:2	
	STORAGE RACK WITH LID WITH PERFORATED BASKET INSIDE ,FOR STORAGE OF BAYONET SHAPED INSTRUMENTS, AT LEAST ,10INSTRUMENTS QTY:2	
	CONTAINER WITH LID FOR STORAGE OF GENERAL INSTRUMENTS 300- 350 MM * 250 -300 MM * 450 * 500 MM QTY:1	
	Arachnid KNIFE (VESSEL KNIFE) JACOBSON 185-190mm QTY:2	
	BAYONET MICRO FORCEPS 220-225,0.6 mm TIP QTY:1	
	BAYONET MICRO FORCEPS 220-225,0.9 mm TIP QTY:1	
	MICRO SCISSOR ANGLED 120-125 mm QTY:1	
	MICRO SCISSOR STRAIGHT 120-125 mm QTY:1	
	MICRO SCISSOR CURVED 120-125 mm QTY:1	
	MICRO SCISSOR 160- 165 mm STRAIGHT QTY:1	
	MICRO SCISSOR 160 - 165 mm CURVED QTY:1	
	BONE-CURRETTE DANBENSPECK 200 -210 mm,2.8 mm QTY:1	
	BONE CURRETTE DANBENSPECK 200-210 mm, 3.6 mm QTY:1	
	BONE CURRETTE VOLKMANN 170 - 180 mm, 3.6 mm QTY:1	
	BONE CURRETTE VOLKMANN 170 -180mm, 4.2 mm QTY:1	
	MICRO INSTRUMENT BOX (275-300 mm X 275 - 300mm X 80-100mm) QTY:2	
	MICRO DISSECTOR, BALL 0.5 mm AND SILVER DISSECTOR QTY:1each	
	<b>Operating Environment</b>	
	The unit shall be capable of operating in ambient temperature of 15°C-35°C and relative humidity of 10-95%	
	The unit shall be capable of being stored continuously in ambient temperature of -5°C -40°C and relative humidity of 10-95%	
	<b>Standards &amp; Safety Requirements</b>	
	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
	<b>Warranty</b>	
	Comprehensive warranty for 2 years.	

160	Diagnostic Cystoscopy Set	
No.	Item Specifications	Fill your Specification
I	Manufacturer Name:	
II	Model No.:	
III	Country of Origin:	
	<b>Technical Specifications</b>	
	Forward oblique 30-degree telescope, 4 mm diameter, autoclavable, length 30 cm, fiber optic light transmission incorporated- 1 pc	
	Telescope bridge with single lockable working channel- 1 pc	
	Cystoscope-Urethroscope sheath, 19-20 Fr, with 2 Luer- lock connectors- 1 pc	
	Sheath should have matte finish for staying of lubrication gel to reduce friction trauma to the patient.	
	<b>Operating Environment</b>	
	The unit shall be capable of operating in ambient temperature of 15°C-35°C and relative humidity of 10-95%	
	The unit shall be capable of being stored continuously in ambient temperature of -5°C -40°C and relative humidity of 10-95%	
	<b>Standards &amp; Safety Requirements</b>	
	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
	<b>Warranty</b>	
	Comprehensive warranty for 2 years.	

161	Echo Ultrasound Machine + TOE Probe	
No.	Item Specifications	Fill your Specification
I	Manufacturer Name:	
II	Model No.:	
III	Country of Origin:	
	<b>Description of Function</b>	
1.1	Colour Doppler Echocardiography System is required to study the anatomical abnormalities and blood flow in the heart and associated vessels.	
	<b>Operational Requirements</b>	
2.1	Latest generation Electronic Phased array Colour Doppler system with minimum 512 electronic independent channels.	
	System must be DICOM ready and capable of being interfaced with HIS/RIS/PACS.	
	Must be upgradable to next generation system on site.	
	Frequency compounding or better technology for better resolution and penetration.	
	<b>System Configuration</b>	
3.1	Colour Doppler System with all application packages, quad loop for serial studies with high frame rate review. Harmonic imaging capability in all modes. (Tissue, Contrast, Anglo) Integrated Stress Echo Package, Digital Storage and Retrieval - 01no.	
	B 1-3 MHz Adult Cardiac probe Electronics Phased Array probe- 01 ea.	
	B 3-11 MHz Electronics Phased Array Probe for Vascular applications- 01 ea.	
	B Multi-plane TEE Probe- 4-8 MHz for Adult as well as Paediatric echocardiography.	
	B 5-10 MHz Electronic phased array probe for Paediatric cardiology.	
	B Colour Printer -01no.	
	B B/W Video Thermal Printer -01no.	
	<b>Technical Specifications</b>	
4.1	Latest generation Electronic Phased array colour Doppler system with Minimum 512 Electronic independent channels.	
4.2	256 gray shades for sharp contrast resolutions	
4.3	Multi-dimensional Beam former for generating two images simultaneously-one at low end of bandwidth and one at high end-then selectively retrieves and mixes the components together for finely textured 2-D or B mode image with superior contrast resolution	
4.4	Adult Cardiac and Vascular Probes to be supplied which must be latest generation wide band transducers without frequency selection for higher sensitivity of response over a broader frequency range of operation. All probes to be phased array. Probes for paediatric application and Trans oesophageal Echo for future requirement.	
4.5	Harmonic Imaging System must have following modes in harmonic with separate setting for:	
	B Tissue Harmonic.	
	B Contrast Harmonic - both triggered and real time	
	B Harmonic Anglo.	
	B Quantification of harmonics imaging	
4.6	Harmonic imaging capability in Adult Cardiac, Paediatric Cardiac and linear Probe.	

4.7	Gain control in two dimensions for additional level of flexibility to image quality control.	
4.8	Real time high frequency 2D for higher resolution and low frequency Doppler for higher sensitivity in all probes	
4.9	Frame rate must be 300 FPS or more.	
4.10	Steerable PW/CW in all Phased Array probes.	
4.11	High definition acoustic zoom for enlarging sections of 2D and colour flow images with more acoustic information for greater clarity and detail while maintaining an optimal frame rate.	
4.12	Modes - 4D, M-Mode, Steerable PW/CW Doppler, Colour Doppler, and High Definition colour flow with capability of automatically picking up colour flow as a function of focal depth	
4.13	Monitor must be 15" or more, high resolution colour monitor. Tilt and Swivel monitor must be able to view in all angles and all light conditions.	
4.14	Colour Flow Imaging for: B Increased lateral & spatial resolution. B Detection of even subtle areas of turbulence, displaying a more physiological blood flow appearance without loss of frame rate. B Colour flow with capability of automatically picking up colour flow as a function of focal depth	
4.15	Tissue Colorization (B-colour) for improved contrast resolution	
4.16	Application software for Adult, Paediatric, Fetal and Peripheral Vascular and Trans oesophageal applications. (All application packages must be built into the system).	
4.17	Line loop memory more than 120MB of memory. B High Frame rate review for better clarity of playback images study in slow motion. B Quad loop with memory for pre and post image comparison of any procedure. B Memory: 256 frames or more in quad loop, M Mode & Doppler Scroll Memory-40 seconds or more. B Frame grabber facility for post analysis.	
4.18	Various maps for pre and post processing.	
4.19	ECG triggers facility.	
4.20	User defined system and application pre-sets for multi-user department.	
4.21	Minimum 4.8 GB optical disc drive for image storage and retrieval. (standard with system)	
4.22	Dedicated integrated dynamic stress echo package for flexible user defined protocols with stacked sub loops facility and contrast stress protocol.	
4.23	Tissue movement colorization with quantification possibility for IHD/CAD patients.	
4.24	Three transducer ports will be preferred.	
4.25	Colour Map resolution up to 128 levels.	
4.26	Study Manager (> 1.5 GB) for on-cart digital acquisition, review and editing of complete patient studies.	
4.27	Facility of Real time perfusion studies	
4.28	System Peripherals shall include: B CD Writer with calculation facility on playback. B Colour Video Printer. B B/W Thermal Printer.	
5	<b>Accessories, spares and consumables</b>	
5.1	<b>Accessories:</b> B DVD/CD Recorder with 100 CDs and 100 DVDs B Colour Print Paper- 500 sheets B B/W Thermal Paper - 10 rolls B ECG Cable - 02nos. B MCD Disc - 10nos.	
5.2	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer.	
6	<b>Operating Environment</b>	
6.1	The product offered shall be designed to be stored and to operate normally under Power Supply, Climate, Temperature, Humidity, etc. for Sudan.	
6.2	Power supply: 220 – 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metre in length.	
6.3	UPS of suitable rating conforming to international standards shall be supplied for minimum 30 min. backup for the entire system.	
7	<b>Standards and Safety Requirements</b>	
7.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
7.2	CE (B3/42 EEC Directives) or USFDA approved product certificate.	
7.3	The product shall comply to IEC 60601-2-37 ed1: Medical Electrical Equipment - Part 2-37: Particular Requirements for the Safety of Ultrasonic Medical Diagnostic and Monitoring Equipment.	
7.4	Type of protection against electric shocks - Class I Degree of protection against electric shocks for ultrasound probes Type "BF" For ECG electrodes Type "CF"	
8	<b>User Training</b>	
8.1	Must provide user training (including how to use and maintain the equipment).	
9	<b>Warranty</b>	
9.1	Comprehensive warranty for 2 years.	
10	<b>Maintenance Service during Warranty Period</b>	
10.1	During the warranty period supplier must ensure planned preventive maintenance (PPM) along with corrective/breakdown maintenance whenever required.	
11	<b>Documentation</b>	
11.1	User (Operating) manual in English	
11.2	Service (Technical / Maintenance) manual in English	
11.3	List of important spare parts and accessories with their part numbers and costing.	

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## Electro Cautery Machine

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
<b>Technical Specification</b>		
Microcontroller based isolated Electrosurgical Generator having both Monopolar and Bipolar outputs designed for all surgical procedures.		
Smart generator should be able to monitor changes in tissue impedance continuously and adjust power.		
Monopolar outputs should have three cutting modes:		
a. Low cut for delicate tissue or laproscopic cases having maximum power of 300w.		
b. Pure cut for clean, precise cut in general surgery having maximum power of 300w.		
c. Blend mode for cutting with homeostasis having maximum power of 200W.		
All cut modes should be able to adjust output power depending on tissue density by less than 15% or SW, whichever is greater.		
It should have three Coag Modes with maximum power of 120W		
a. Desiccate mode for low voltage contact coagulation suitable for Laproscopic and delicate tissue work.		
b. Fulgurate mode for efficient non-contact coagulation in most applications.		
c. Spray mode should have randomized spray effect of varying amplitude and frequency for coagulating large tissue areas with minimum depth of necrosis.		
It should have three bipolar modes with maximum power of 70W		
a. Precise mode have fine control of desiccation in delicate tissue.		
b. Standard mode for applications at low voltage to prevent sparking.		
c. Macro mode for applications on tissue with high resistance.		
It should have patient plate monitoring facility and should give audiovisual alarm and deactivate output if contact between patient and patient plate is not proper to eliminate the risk of patient burns.		
The unit should have two hand switching and two Footswitch Monopolar outputs and one hand switching and footswitching bipolar output.		
It should have membrane keyboard for power settings:		
The unit should have individual digital display of power for Bipolar, Monopolar cut and Monopolar Coag.		
The unit should not have RF Leakage current more than 150mA.		
<b>Accessories:-</b>		
a. Monopolar Footswitch:- 02 No.		
b. Bipolar Footswitch:- 01 No.		
c. Reusable hand switching Pencl:- 02 Nos.		
d. Reusable Patient Plate :- 02nos.		
e. Bipolar Forceps:- 01No.		
f. Forceps Cord:- 02Nos.		
g. Universal Adaptor :- 01No.		
<b>Operating Environment</b>		
The unit shall be capable of operating in ambient temperature of 15°C-35°C and relative humidity of 10-95%		
The unit shall be capable of being stored continuously in ambient temperature of -5°C -40°C and relative humidity of 10-95%		
<b>Power supply:</b>		
Input power supply: 220/240 V AC , 50Hz single phase schuko plug		
Power supply: 220 – 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metres in length.		
<b>Standards &amp; Safety Requirements</b>		
Must submit ISO13485:2003/AC:2007 for Medical Devices AND		
CE (B3/42 EEC Directives) or USFDA or TUV approved product certificate.		
<b>Training</b>		
Must provide user & service training.		
<b>Warranty</b>		
Comprehensive warranty for 2 years.		
<b>Maintenance Service During Warranty Period</b>		
Supplier must ensure planned preventive maintenance (PPM) along with corrective/breakdown maintenance whenever required.		
<b>Documentation</b>		
User (Operating) manual in English Should provide 2 sets(hardcopy and soft-copy)		
Service (Technical / Maintenance) manual in English Should provide 2 sets(hardcopy and soft-copy)		
List of important spare parts, accessories and consumables with their part numbers and costing.		

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## Endourology Laparoscopy Complete Tower

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Description of Function</b>	
1.1	For complete urology system and surgery procedure	
2	<b>Operational Requirements</b>	
2.2	System complete with thin flexible camera (endoscope) and surgical instruments.	
3	<b>System Configuration</b>	

3.1	As specified	
4	<b>Technical Specification</b>	
4.1	<b>Trolley:</b>	
	Customized, imported, epoxy powder coated/ stainless steel tower	
	Portable on 4 anti-static, anti-rust, 360o swivel dual castors, 2 with brakes.	
	Shall have at least four shelves	
	Adjustable arm for fixing a flat monitor.	
	One drawer unit with lock and key.	
	Camera holder	
	Shall have excellent cable management system.	
	Power box with concealed wiring for providing electrical connections of proper rating to all the units.	
4.2	<b>Features of 4K HD Endoscopic Camera and Camera Control Unit</b>	
	3 chip 4K High Definition Camera Head	
	It must give 4K UHD resolution of 3840 x 2160 pixels for live display.	
	Button controls on camera head to control the camera functions	
	The Camera Head should have a focusing coupler for even focus control.	
4.3	<b>The system shall have following features:</b>	
	The processor should be able to process 4K – UHD signals having resolution of at least 3840 x 2160 pixels or more.	
	Should have various input and output terminals including HDMI, 3G SDI, DVI-D, HD/SD-SDI.	
	i. Should incorporate high sensitivity CMOS/CCD image sensor	
	ii. Optimizes to Any Size: The system should have Optical Zoom with 2x parfocal zoom (in 6 steps (x1.0, x1.2, x1.4, x1.6, x1.8, x2.0) lens to enhance the quality of image size & cross specialty standardization of the camera system, regardless of the telescope used.	
	iii. Plug and Go: The system should automatically optimize all settings.	
	The system should be ready-to-use as soon as it is connected to the camera control unit.	
	iv. USB Port for Capturing UHD Videos/ UHD Still Pictures: Captured digital images in format 16:9 can be displayed on WideView monitors in the same UHD format without being converted in order to prevent a loss if image quality caused by image stretching.	
	v. Integrated digital imaging processing module for a 5 level brightness regulation and 2 electronic anti-moirée filter for fiberoscopes.	
	vi. Parallel live display of visualization modes besides white light mode (picture-in-picture).	
	vii. Up to three different camera modules can be connected to the UHD video processor module	
	viii. Side-by-side live display of visualization mode next to white light image (picture-in-picture).	
	ix. Integrated picture-in-picture mode of two different camera modules in five different display sizes available	
	x. Primary and secondary signal source change in picture-in-picture mode can be performed easily via camera head button.	
	xi. Changes in visualization modes, device control, digital zoom, brightness, video capture, still image capture and direct print orders, picture-in-picture mode, image direction, white balance and setup settings can be performed in sterile area via camera head buttons.	
	xii. Short starting time and customizable parameter adjustment.	
	xiii. Grid and pointer can be displayed for improved orientation and communication during surgery.	
	xiv. Grid and pointer can be displayed individually and together.	
	xv. 2 x digital zoom, adjustable in 6 levels.	
	xvi. Possibility of 180° image rotation	
	xvii. Possibility of vertical and horizontal image mirroring. Storage of up to 20 individual presets.	
	xviii. System overview is individually configurable and setup status can be directly displayed with intelligent icons.	
	ix. Parameter setup can be adjusted during surgery.	
	xv. In combination with a compatible three-chip UHD camera head the following modes can be activated without special light sources or filters:	
	a. Brightening of dark areas in the endoscopic image.	
	b. Dynamic contrast enhancement	
4.4	<b>Modular design:</b> 4KHD camera module that should be compatible for use with video flexible endoscopes.	
4.5	<b>Camera control unit with camera head:</b>	
	i. Image Sensor: 3K1/2" CMOS/CCD-Chip.	
	ii. Pixels: 3840 x 2160	
	iii. AGC :Microprocessor Controlled	
	iv. Lens : Integrated Zoom Lens f = 15-31 mm (2x optical zoom)	
	v. Minimum light sensitivity : 17 Lux (f = 1.4 mm).	
	vi. Control buttons: 3 (2 of them freely programmable).	
	vii. Up to three different camera modules can be connected to the UHD video processor module input for communication with compatible camera modules, LAN connection, 4 x USB connection (2 x front, 2 x back).	
	viii input: Keyboard input for character generator. 5- pole DIN socket	
4.6	<b>4K Medical Grade Monitor LED</b>	
	i. Compatible with endoscopy camera of any make.	
	ii. Monitor must have 4K monitor, Ability to display High Definition Resolution of 3840 x 2160 pixels, flat screen, LED	
	iii. Compatible with all processor of displaying 4K and ICG application	
	iv. UHD TFT Flat Screen 3D Monitor with stand size 32".	
	v. Aspect Ratio: 16:9 UHD format	
	vi. Brightness : 650 cd/m2 or better	
	vii. Contrast ratio: 1400 : 1	
	xiv. Should have various input/output terminals, including 3G/HD/SD SDI, DVI-D, BNC (x5) and HDMI, RGBS, composite, S-video etc.	
	xv. Viewing Angle: 175 degree or better.	
	xvi. Monitor menu displays all controls, capabilities and operations via cursor keys, user defined captions, easy to use and highly dependable	
	xvii. Drip water protected, dustproof housing.	
4.7	<b>Light source:</b>	
	Should be compatible with 4K system	
	Shall have long-life LED light source.	
	a. Lamp: 300 Watt	
	b. Shall have lamp with minimum: 30,000 hours or more	
	c. Must have color Temperatures 6000K or more	
	d. Facility of standby mode.	
	e. Light intensity adjustment continuously adjustable from 0 to 100% manually as well as fully automatically by the cameras video output signal.	
	f. Universal jaw assembly to adapt cable of any make of fibre optic cable without adapter.	
	g. Fibre optic light cable of size 4.8mm or as appropriate with the system in diameter and length 250-300 cm, the same must also be heat-resistant , with safety locking device	
4.8	<b>Suction/Irrigation Unit:</b>	
	The suction and irrigation unit shall be a combined unit for performing Laproscopy, resectomy or TUR surgeries.	
	Irrigation pressure control between 0-400 mm Hg.	
	Suction pressure control between 0-75 bar.	
	Main unit with digital display.	
	Overflow protection on suction bottles.	
	Control from control panel and/or foot pedal.	
	Shall come with: Silicone suction tubings set, reusable pressure domes, bacterial filter and sterilizable, polycarbonate unbreakable suction and irrigation bottles of capacity minimum 1.5 litres with cap.	
4.9	<b>High flow CO2 insufflator</b>	
	High flow of 30 liters or more with LCD display	
	Microprocessor controlled & Software driven	
	Soft approach pressure control for safe recovery of abdominal pressure	
	Should have visual and audible alarms with min 0.1 L flow rate	
	Internal leakage detection capability.	
	Integrated gas heating	
	Having internal venting system for safety	
	Should have trolley	
	Should have sterilizable gas filters	
	Should have sterilizable insufflation tubes	
	Unit should include heated tubing, hose & yoke	
	Trocar, size 11 mm	
5	<b>Accessories, spares and consumables</b>	
5.1	All standard accessories/consumables/parts required for the proper operation of the above item shall be included in the offer.	
6	<b>Operating Environment</b>	
6.1	The unit shall be capable of operating in ambient temperature of 10°C-45°C and relative humidity of 10-95%	
6.2	The unit shall be capable of being stored continuously in ambient temperature of -20°C -60°C and relative humidity of 10-95%	
7	<b>Power supply:</b>	
7.1	Input power supply: 220/240 V AC, 50Hz single phase schuko plug	
8	<b>Standards and Safety Requirements</b>	
8.1	Must submit ISO 9001 or ISO 13485:2003/AC: 2007	
8.2	CE or USFDA or TUV approved product certificate.	
9	<b>Training</b>	
9.1	Must provide user & service training.	
10	<b>Warranty</b>	
10.1	Comprehensive warranty for 2 years after acceptance.	
11	<b>Maintenance Service During Warranty Period</b>	
11.1	Supplier must ensure planned preventive maintenance (PPM) along with corrective/breakdown maintenance whenever required.	
12	<b>Documentation</b>	
12.1	User (Operational) manual in English Should provide 2 sets(hardcopy and soft-copy)	
12.2	Service (Technical / Maintenance) manual in English Should provide 2 sets (hardcopy and soft-copy)	
12.3	List of important spare parts, accessories and consumables with their part numbers and costing.	

No.	Item Specifications	Fill your Specification
I	Manufacturer Name:	
II	Model No.:	
III	Country of Origin:	
	<b>Technical Specifications</b>	
	<b>1. ONE (1) UNIT FULL HIGH DEFINITION LED MEDICAL GRADE MONITOR</b>	
1.	LED Panel: Screen Size at least 26 inches	
2.	Resolution: 1920 x 1080 dots per inch (Full HD)	

3.	Contrast Ratio: At least 1400:1
4.	Aspect Ratio: At least 16:9
5.	Viewing Angle: At least 178° (Horizontal & Vertical)
6.	Number of Colors: At least 1.07 billion
7.	Dimensions: At least 626.8 (W) x 395.2 (H) x 79.6 (D) mm
8.	Weight: 7.8 - 8kg
	Input:
1.	HD/SD SDI (1), SD (2): BNC Connector
2.	VIDEO: BNC Connector
3.	Y/C: 4-Pin mini-DIN
4.	HD15: D-sub 15-pin
5.	Aux in (HD/SD-SDI): BNC connector
6.	VIDEO: BNC Connector with loop-through output and auto 75 termination
	Y/C: 4-Pin mini-Din with active-through output
	<b>2. ONE (1) SET VIDEO ENDOSCOPIC SYSTEM</b>
1.	Dimensions: 370-382(W) X 85-91 (H) X 455-489 (D) mm
2.	Weight: 10-11 kg
	Classification of protection against electric shock: Class I-IEC
	<b>3. XENON LIGHT SOURCE</b>
1.	Dimensions: 370-390 (W) x 150-162 (H) x 476-551 (D) mm
2.	Weight: 19-20 kg
3.	Examination lamp: Xenon short-arc lamp (zone-free) 300 W
4.	Average lamp life: Approximately 500 hours of continuous use
	<b>4. ONE (1) SET ENDOSCOPIC ULTRASOUND SYSTEM</b>
	Classification:
1.	Type of protection against electric shock: Class I-IEC or its equivalent Degree of protection against electric shock of applied part: TYPE BF applied part
	Ultrasound Scanning:
1.	Display Mode: B-Mode
2.	Scanning: Radial Scanning
3.	Compatible equipment: Mechanical radial scanning ultrasound endoscope, Miniature probe
4.	Usable frequencies: C5, C7, 5, C13, C20, 7.5, 12, 20 MHz
5.	Display range: 2, 3, 4, 6, 9, 12 cm
	Mechanical Scanning:
1.	Image adjustment: Gain, Contrast, STC, Enhance
2.	Rotation: Rotatable
3.	Display processing/ Display area: Full circle, bottom sector, top sector, scroll
4.	Direction: Normal/Inverse
5.	Cine memory: Maximum 160 frames (frame rate per second), Cine review function
6.	3D: 3D display, MPR display
7.	Measurement: Distance, Area, Circumstance
8.	Display mode: B-mode, FLOW mode, PW mode, THE mode, CH-EUS mode, ELST mode
9.	Scanning: Radial scanning, Curved linear array scanning
10.	Compatible equipment:
a.	Electronic radial scanning ultrasound endoscope
b.	Electronic curved linear array scanning ultrasound endoscope
11.	Usable frequencies: 5, 6, 7.5, 10, 12 MHz 12. Display range: 2, 3, 4, 5, 6, 7, 8, 9, 12 cm
13.	Image adjustment: Gain, Contrast, STC, Enhance, Compound
14.	Display area: Radial: Full circle, bottom sector, top sector, scroll
15.	Display processing: Curved linear array: Convex
a.	Direction: Normal and Inverse
b.	Display pattern: Single-screen and Dual-screen
	Electronic Scanning
1.	Cine memory: Cine review function; at least 600 storable frames
2.	Focus:
a.	Auto Preset: Near and Far
b.	Focus setting: Focus location adjustable, Focus number adjustable
3.	FLOW mode: COLOR FLOW mode, POWER FLOW mode, H-FLOW mode
4.	PW mode: B+PW, COLOR+PW, POWER+PW, H-FLOW+PW
	Measurement: Distance, Area, Circumstance, PW measurement
	Recording Data:
1.	Data format:
a.	Still image: Bmp, jpeg, 3dv
b.	Movie data: *1, *2, Avi
2.	Keyboard: Keyboard with built-in trackball, LCD touch panel and LED backlight keys
	Auxiliary Equipment:
1.	Monitor display selection: Endoscopic and Ultrasound image
2.	Video system center:
a.	Picture-in-picture: Displays the endoscopic image as PinP sub- display on the ultrasound image
	Patient data: Shares patient data with the video system center
	<b>5. ONE (1) UNIT RADIAL SCANNING ULTRASOUND ENDSCOPE</b>
1.	Field of View: 100°
2.	Optical System:
a.	Direction of View: 55° Forward-Oblique
b.	Depth of Field: 3 to 100 mm
3.	Distal End: ø13.8 mm
4.	Insertion Tube
a.	Insertion Tube Outer Diameter: ø11.8 mm
b.	Working Length: At least 1250 mm
5.	Instrument Channel
a.	Channel Inner Diameter: ø2.2 mm
b.	Minimum Visible Distance: 3mm
6.	Bending Range/ Angulation Range: Up 130°, Down 90° Right 90°, Left 90°
7.	Total Length: At least 1555mm
8.	Lens Cleaning Function
9.	Display Mode: B-mode, M-mode, D-mode, Flow-mode, Power flow-mode
10.	Scanning Method: Electronic Radial Array
11.	Scanning Direction: Perpendicular to Insertion Direction
	Frequency: 5/6/7.5/10 MHz
	<b>6. ONE (1) UNIT LINEAR SCANNING ULTRASOUND ENDSCOPE</b>
	Optical System:
1.	Field of view: 100°
2.	Direction of view: oblique viewing 55°
3.	Depth of field: 3 to 100 mm
4.	Distal end outer diameter: At least 14.6 mm
5.	Insertion tube outer diameter: At least 12.6 mm
	Endoscopic Functions:
1.	Working length: At least 1250 mm
2.	Instrument Channel:
a.	Channel inner diameter: At least 3.7 mm
b.	Minimum visible distance: At least 6 mm
	Bending Section:
1.	Angulation range: Up 130°, Down 90°, Right 90°, Left 90°
	Total Length: At least 1555 mm
	Ultrasound Functions:
1.	Operation Mode: B-mode, M-mode, D-mode, Color Flow mode, Power Flow mode, Flow mode
2.	Scanning Method: Electronic curved linear array
3.	Scanning Direction: Parallel to the insertion direction 4. Frequency: 5, 6, 7.5, 10, 12 MHz
5.	Scanning Range: 180°
	Contacting Method: Balloon method, Direct Contact method
	<b>7. ONE (1) UNIT LINEAR ULTRASOUND BRONCHOSCOPE</b>
	Optical System:
1.	Field of view: 80°
2.	Direction of view: 35° forward oblique
3.	Depth of field: 2 to 50mm
	Insertion Tube
1.	Distal end outer diameter: At least 6.9 mm
2.	Insertion tube outer diameter: At least 6.3 mm
3.	Working length: At least 600 mm
	Instrumental Channel
	Bending Section
1.	Angulation range: Up 120°, Down 90°
	Total Length: At least 890 mm
	<b>8. OTHER ACCESSORIES FOR THE TOWER:</b>
1.	Twenty (20) pcs balloon EUS tip
2.	Ten (10) pcs Aspiration needle for EUS
3.	One (1) unit UPS at least 150% power capacity of the equipment
4.	One (1) unit Emergency cart:
	Made of ABS plastic, aluminum alloy and stainless steel.
	ABS material worktop board shaped by injection molding, easy to clean.

-	Four aluminum supporting columns.
-	Sliding shelf on the left side
-	One centralized lock for five drawers with noise-free slides.
-	100 mm casters with brake.
-	Dimension: 620 mm x 470 mm x 910 mm
-	Accessories:
-	Side handling box
-	Waste bin
-	Rotating tray
-	Telescopic IV pole
-	Oxygen cylinder holder
-	Cardiac board
-	Power outlet
5.	Computer Video and Image Recorder/External Recording Device with Software Dedicated for Endoscopic Ultrasound
-	Monitor:
-	Device Type: LED-backlit LCD monitor, at least 23"
-	Panel Type: IPS
-	Aspect Ratio: 16:9
-	Resolution: Full HD (1080p), 1920 x 1080 at 60 Hz
-	Pixel Pitch: 0.265 mm
-	Brightness: 250 cd/m <sup>2</sup>
-	Contrast Ratio: 1000:1 / 8000000:1 (dynamic)
-	Response Time: 8 ms (normal); 5 ms (grey-to-grey)
-	Color Support: 16.8 million colors
-	Input Connectors: HDMI, VGA
-	Display Position Adjustment: Tilt
-	Screen Coating: Low Haze, 3H hardness
-	Dimension (WxDxH) w/ Stand: 52.55 cm x 15.18 cm x 40.43cm
-	Weight: 3.8 – 4.0 kg
-	Compliant Standards: Plug and Play, TCO Displays
-	Processor – 4.0 GHz
-	Windows 10 Home 64-bit
-	Memory 8GB, (8Gx1) DDR4, 2666MHz
-	Hard Drive – 3.5" Hard Drive 1TB 7200 rpm
-	Port & Slots
-	Power Button
-	5-in-1 Multi-card reader
-	Audio combo jack
-	(2) USB 3.1 Gen 1 Type – A
-	Optical Drive
-	Air Vent
-	Line in/out & Microphone Port
-	HDMI out
-	VGA
-	At least 4 USB 2.0 ports
-	Ethernet port
-	Expansion card slots
-	Power supply unit
-	Security-cable slots
-	Padlock
6.	One (1) unit Equipment Cart/ Workstation for Endoscopic Ultrasound System:
-	Dimensions:
-	Height (endoscope in highest position): 2135-2140 mm
-	Height (to top tray): 1165-1170 mm
-	Castors: at least 2, with brakes; at least 4 x 125 mm
-	Separation transformer:
-	Input voltage: 220 – 240 V
-	Frequency: 60 Hz
-	Power input (max.): 1900 W
-	Circuit breakers: 2x 9 A
-	Potential equalization terminal: 1
-	<b>Operating Environment</b>
-	The unit shall be capable of operating in ambient temperature of 15°C-35°C and relative humidity of 10-95%
-	The unit shall be capable of being stored continuously in ambient temperature of -5°C -40°C and relative humidity of 10-95%
-	<b>Power supply:</b>
-	Input power supply: 220/240 V AC, 50Hz single phase schuko plug
-	Power supply: 220 – 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metres in length.
-	<b>Standards &amp; Safety Requirements</b>
-	Must submit ISO13485:2003/AC:2007 for Medical Devices AND
-	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.
-	<b>Training</b>
-	Must provide user & service training.
-	<b>Warranty</b>
-	Comprehensive warranty for 2 years.
-	<b>Maintenance Service During Warranty Period</b>
-	Supplier must ensure planned preventive maintenance (PPM) along with corrective/breakdown maintenance whenever required.
-	<b>Documentation</b>
-	User (Operating) manual in English Should provide 2 sets(hardcopy and soft-copy)
-	Service (Technical / Maintenance) manual in English Should provide 2 sets(hardcopy and soft-copy)
-	List of important spare parts, accessories and consumables with their part numbers and costing.

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## Hemoglobin A1C Machine

No.	Item Specifications	Fill your Specification
I	Manufacturer Name:	
II	Model No.:	
III	Country of Origin:	
1	<b>Technical Specifications</b>	
1.1	A new fully automated High Performance Liquid Chromatography (HPLC) analyser for HbA1c estimation.	
1.2	The system should be equipped with an automated barcode reader/reader facility.	
1.3	The system should have automated cap-piercing of primary tubes and direct dilution of samples without manual intervention.	
1.4	No sample pre-treatment should be required. Diluted and Undiluted sample run mode should be available.	
1.5	True physical separation with separate peaks (resolution) of labile and stable fraction of HbA1c for the direct estimation of stable fraction.	
1.6	Vendor should provide bi-directional LIS/HIMS interfacing and sample bar code reader or the machine should be compatible with local LIS/HIMS.	
1.7	The system should have a printer for reports.	
1.8	The system should have dedicated reporting software for data processing, QC and Chromatogram storage with easy review.	
1.9	The system should not take more than 5 minutes for the first sample and less than 2 minutes for subsequent samples.	
1.10	Machine should perform 2-30 tests per hour.	
1.11	System should detect Hb variants that affect A1c interpretation.	
1.12	System should have STAT sample capability.	
1.13	The system should have feature to load samples using racks with a minimum sample loading capacity of at least 80 samples with continuous loading facility.	
1.14	HPLC system shall be supplied with complete ready to use kit with Buffers in transparent plastic tanks with inventory management system to view the level of buffers, columns, primers, calibrators & sample vials etc.	
1.15	Machine should be a compact bench top model.	
1.16	The HPLC system should have better precision, CV less than 2.5%.	
1.17	The system should have in-kit external standards for instrument calibration ensuring accurate quantitation of results.	
1.18	The calibration should be based on 2-point calibration for higher accuracy.	
1.19	System should not have any interference from HbF up to 20% and any other hemoglobin derivatives, and minimal reagent consumption during automated maintenance schedule.	
1.20	It should have a sufficient data hard disk approx. 1TB hard drive and a remote data access feature when connected to LAN or Intranet. The system must have a software for real time viewing of the analysis of the sample.	
6	<b>Operating Environment</b>	
6.1	The unit shall be capable of operating in ambient temperature of 15°C-35°C and relative humidity of 10-95%	
6.2	The unit shall be capable of being stored continuously in ambient temperature of -5°C -40°C and relative humidity of 10-95%	
7	<b>Power supply:</b>	
7.1	Input power supply: 220/240 V AC, 50Hz single phase schuko plug	
7.2	Power supply: 220 – 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metres in length.	
8	<b>Standards &amp; Safety Requirements</b>	
8.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
8.2	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
9	<b>Training</b>	
9.1	Must provide user & service training.	
10	<b>Warranty</b>	
10.1	Comprehensive warranty for 2 years.	
11	<b>Maintenance Service During Warranty Period</b>	
11.1	Supplier must ensure planned preventive maintenance (PPM) along with corrective/breakdown maintenance whenever required.	
12	<b>Documentation</b>	
12.1	User (Operating) manual in English Should provide 2 sets(hardcopy and soft-copy)	
12.2	Service (Technical / Maintenance) manual in English Should provide 2 sets(hardcopy and soft-copy)	
12.3	List of important spare parts, accessories and consumables with their part numbers and costing.	

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## Hysterectomy Set

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
	<b>Technical Specifications</b>	
	BP Handle No.04. QTY:2	
	Dissecting Forceps plain 8"QTY:1	
	Dissecting Forceps toothed 8"QTY:1	
	Dissecting Forceps plain 6"QTY:1	
	Dissecting Forceps toothed 6"QTY:1	
	Kocher Artery Forceps Straight 8"QTY:4	
	Kocher Artery Forceps Cur 8"QTY:4	
	Artery Forceps Cur 8" long 04 QTY:4	
	Artery Forceps Cur 6" Medium (FINE) QTY:4	
	Mosquito Artery Forceps Cur 5" QTY:4	
	Artery Forceps straight 6" QTY:1	
	Doyen's Retractor 3"QTY:3	
	Deaver's Retractor 1" & 3" QTY:3	
	Langenback Retractor 8x35mm QTY:1	
	Morris Retractor with ring handle 2.5" QTY:2	
	Babcock Tissue Forceps 6" QTY:2	
	Babcock Tissue Forceps 8" QTY:6	
	Allis Tissue Forceps 6" QTY:4	
	Allis Tissue Forceps 8" QTY:2	
	Kidney Tray 8" S.S.QTY:2	
	Bowl S.S. 6"QTY:2	
	Metzenbaum Scissor Straight 8" (TC TIP) QTY:2	
	Metzenbaum Scissor Cur 6" (TC TIP) QTY:2	
	Metzenbaum Scissor Cur 8" (TC TIP) QTY:2	
	Needle Holder 6" (TC TIP) straight/curved QTY:2	
	Needle Holder 8" (TC TIP) QTY:2	
	Mvometomy Screw (small, medium & large) QTY:1each	
	Right Angle Artery Forceps MIXER 6" QTY:2	
	Right Angle Artery Forceps MIXER 8" QTY:2	
	Sponge Holding Forceps 10" QTY:2	
	Balfour Retractor 10" shaft for abdominal hysterectomy QTY:1	
	Suction Tip Yankee All 5.5 QTY:2	
	Suction Tip Pool Straight 8mm All 5.5. QTY:1	
	Cross Action Towel Clips Backhaus 3" QTY:4	
	Heaney Atraumatic Straight Hysterectomy Clamps 23cm/9" QTY:4	
	Heaney Atraumatic Curved Hysterectomy Clamps 23cm/9 inches QTY:4	
	Uterine manipulator, double action 11" QTY:2	
	Maves Scissors (TC TIP) straight 13cm/5 QTY:5	
	Kelly Hemostatic forceps straight 14cm/5 1/2 inches QTY:2	
	Right Angle Artery Forceps MIXER 8720 cm QTY:1	
	Landons bladder retractor QTY:4	
	Suction tips 19 cm/7 1/2 inches SS QTY:1	
	Micro needle holder straight round QTY:2	
	handle with ratchet serrated T02 (TC TIP) 18cm/5 inches QTY:2	
	Micro scissors round handle blade 14mm straight (TC TIP) 7.5" QTY:2	
	wertheim's Vaginal clamp 8.5" QTY:1	
	TC parametrium scissors Gold cult curved 23cm QTY:1	
	Shirodka's uterine holding forceps & rubber pad. QTY:1	
	POZZIS self-Retaining RETRACTOR QTY:1	
	Towel Forceps curved 6" QTY:1	
	Kidney Tray 10" S.S.QTY:2	
	Bowl S.S.r (medium). QTY:3	
	Doyen's 8" shaft QTY:1	
	KIDNEY TRAY MEDIUM QTY:1	
	TOWEL CLIPS QTY:6	
	SS TRAY QTY:2	
	SS BOWL QTY:2	
	SPONGE HOLDER QTY:2	
	DISSECTING TOOTH FORCEPS 15CM QTY:2	
	DISSECTING PLAIN FORCEP 15CM.QTY:2	
	MAYO SCISSORS ST 15CM. QTY:1	
	ARTERY Curved 15CM QTY:2	
	METAL CATHETER 5MM QTY:1	
	SIMS VAGINAL SPECULUM small/medium/large QTY:1	
	OVUM FORCEPS 8MM,10MM QTY:1each	
	SIMPSON UTERINE SOUND QTY:1	
	HSG CANNULA 13MM,16MM QTY:1each	
	UTERINE CURETTE double ended QTY:1	
	HEANEY VAGINAL RETRACTOR QTY:1	
	PUNCH BIOPSY FORCEP.QTY:1	
	HEGARS DILATOR SET (13 dilator) QTY:1set	
	VULSELLUM FORCEP CURVED 20CM. QTY:1	
	UTERINE TINACULUM STRAIGHT QTY:1	
	ALLIS FORCEP 20CM QTY:2	
	TISSUE FORCEP QTY:2	
	Kelly PLACENTAL FORCEP CURVED QTY:1	
	Novaks curette 24-25 cm(3mm, 4mm) QTY:1each	
	<b>Operating Environment</b>	
	The unit shall be capable of operating in ambient temperature of 15°C-35°C and relative humidity of 10-95%	
	The unit shall be capable of being stored continuously in ambient temperature of -5°C -40°C and relative humidity of 10-95%	
	<b>Standards &amp; Safety Requirements</b>	
	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
	<b>Warranty</b>	
	Comprehensive warranty for 2 years.	

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## Immunology Analyzer

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
	<b>Technical Specifications</b>	
	1) Fully automated Random access immunoassay analyzer to perform the analysis of immuno assays from serum, plasma, hemolysate and body fluids.	
	2) Systems having maximum throughput preferred (at least >60tests/hr).	
	3) System with minimal reaction time for immuno assay tests preferred.	
	4) Systems should have the capacity to be programmed with maximum tests and could hold maximum number of reagents at a single point of time (preferably >15 different reagents). Optional - compressor based cooling unit preferred than peltier based one.	
	5) Systems utilizing minimal sample volumes preferred with mandatory sample clot detection ability	
	6) Should have onboard, user definable minimal step dilution process of samples and one offering maximum level of dilution preferred (eg: for B-HCG).	
	7) Should be having lot to lot calibration, and preferably be having fewer points of calibration with maximum linearity.	
	8) One with minimal water consumption preferred	
	9) The quoted equipment should have CE/FDA certification	
	10) All the reagents should be ready to use.	
	11) Reaction process, Sample & reagent pipetting should be in single use disposable settings.	
	12) Systems with maximum onboard data storage (QC, patient data) preferred with provision to expand memory or storage to an external device. Should be having connected online printer, preferably laser printer (provision for at least 3 RS-232 cable connections or equivalent data cable connections should be there).	
	13) System should be preferably having LCD touch screen colour monitor for programming the tests and entering the patient data with large icons. Strikingly visible alarms with operator defined audio enhancement should be there.	
	14) Reagent data entry should be through onboard barcode scanner to avoid wrong entry.	
	<b>Operating Environment</b>	
	The unit shall be capable of operating in ambient temperature of 15°C-35°C and relative humidity of 10-95%	
	The unit shall be capable of being stored continuously in ambient temperature of -5°C -40°C and relative humidity of 10-95%	
	<b>Power supply:</b>	
	Input power supply: 220/240 V AC, 50Hz single phase schuko plug	
	Power supply: 220 – 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metres in length.	
	<b>Standards &amp; Safety Requirements</b>	
	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
	<b>Training</b>	
	Must provide user & service training.	
	<b>Warranty</b>	

Comprehensive warranty for 2 years.	
<b>Maintenance Service During Warranty Period</b>	
Supplier must ensure planned preventive maintenance (PPM) along with corrective/breakdown maintenance whenever required.	
<b>Documentation</b>	
User (Operating) manual in English Should provide 2 sets(hardcopy and soft-copy)	
Service (Technical / Maintenance) manual in English Should provide 2 sets(hardcopy and soft-copy)	
List of important spare parts, accessories and consumables with their part numbers and costing.	

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**Infant Laparotomy Instrument Set**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
	<b>Technical Specifications</b>	
	Stainless steel round Bowl 2 ltrs QTY:5	
	Stainless steel round Bowl 150-250 ml QTY:5	
	Stainless steel round Bowl 25 - 50 ml QTY:5	
	Stainless steel round Bowl 500 ml QTY:5	
	SS Kidney tray 150-250 ml QTY:5	
	SS Kidney tray 500 ml QTY:5	
	BP Knife Handle - no 2 - 125mm length matte finish QTY:5	
	BP Knife Handle - no 4 - 125 mm length matte finish QTY:5	
	BP Knife Handle - no 4 - 212 mm length matte finish QTY:5	
	BP Knife Handle - no 4 - 162 mm length matte finish QTY:5	
	Cheattle forceps - 11 inch QTY:5	
	Forster's sponge holding forceps - Long 10-12 inches straight serrated QTY:10	
	Backhaus Towel clips - 3 inch length QTY:20	
	Backhaus Towel clips - 5 inch length QTY:20	
	Alley's Tissue forceps - 7 inch length - 4x5 teeth, 7mm Jaw QTY:10	
	Alley's Tissue forceps - 5 inch length - 1x2 teeth, 5mm Jaw QTY:10	
	Alley's Tissue forceps - 4 inch length - 3x4 teeth, 4mm Jaw QTY:10	
	Babcock's Tissue Forceps - 6.25 inch length - 10mm Jaw QTY:10	
	Babcock's Tissue Forceps - 9.25 inch length - 6mm Jaw QTY:10	
	Mosquito Artery Forceps - straight - 4 inch length QTY:10	
	Mosquito Artery Forceps - straight - 5 inch length QTY:10	
	Mosquito Artery Forceps - straight - 7 inch length QTY:10	
	Mosquito Artery Forceps - curved - 4 inch length QTY:10	
	Mosquito Artery Forceps - curved - 5 inch length QTY:10	
	Mosquito Artery Forceps - curved - 7 inch length QTY:10	
	Haemostatic Artery Forceps - straight - 8 inch length QTY:10	
	Haemostatic Artery Forceps - strong curve - 8 inch length QTY:10	
	Thumb dissecting forceps - 2x1 teeth/tissue - 5.5 inch length QTY:10	
	Thumb forceps - 2x1 teeth/tissue - 4 inch length (fine) QTY:10	
	Mixer vascular clamp - 7.5 inch QTY:5	
	Baby Mixer's forceps, 5.25 inch QTY:5	
	Mixer vascular clamp - 9 inch length QTY:5	
	Intestinal clamps - crushing - straight 9 inch length QTY:5	
	Intestinal clamps - crushing - curved 9 inch length QTY:5	
	Intestinal clamps - occluding - straight 9 inch length QTY:5	
	Intestinal clamps - occluding - curved 9 inch length QTY:5	
	Kocher's Artery forceps - straight - 7 inch length QTY:5	
	Kocher's Artery forceps - straight - 10 inch length QTY:5	
	Kocher's Artery forceps - curved - 7 inch length QTY:5	
	Kocher's Artery forceps - curved - 10 inch length QTY:5	
	Kelly's tissue clamps straight - 5.5 inch length QTY:5	
	Kelly's tissue clamps curved - 5.5 inch length QTY:5	
	Kelly's tissue clamps straight - 7 inch length QTY:5	
	Kelly's tissue clamps curved - 7 inch length QTY:5	
	Desjardin gallstone forceps set QTY:5	
	Mixter's ligature forceps, 230mm QTY:5	
	Yankur suction tube QTY:5	
	Baby Mixer's ligature forceps, 185mm QTY:5	
	DeBakey dissecting forceps, 150mm QTY:5	
	DeBakey dissecting forceps, 230mm QTY:10	
	Waugh toothed dissecting forceps, 200mm QTY:5	
	Adson's dissecting forceps, toothed, 4.75 inch 125mm QTY:5	
	Adson tissue forceps 4.75 inch QTY:10	
	Adson's dissecting forceps, plain tip, 125mm QTY:5	
	Mayo Hegar Needle holder with tungsten carbide solid Jaw - 6 inch length QTY:10	
	Mayo Hegar Needle holder with tungsten carbide solid Jaw - 7 inch length QTY:10	
	Mayo Hegar Needle holder with tungsten carbide solid Jaw - 8 inch length QTY:10	
	Mayo Hegar Needle holder with tungsten carbide solid Jaw - 10 inch length QTY:10	
	Crile-wood Needle Holder, TC tip, 145mm QTY:5	
	Tenotomy scissors - Tungsten Carbide Blade QTY:5	
	Mayo's straight scissors - 7 inch length - Tungsten Carbide Blade QTY:5	
	Mayo's straight scissors - 8 inch length - Tungsten Carbide Blade QTY:5	
	Mayo's curved scissors - 7 inch length - Tungsten Carbide Blade QTY:5	
	Mayo's curved scissors - 8 inch length - Tungsten Carbide Blade QTY:5	
	Metzenbaum straight scissors - 7 inch length - Tungsten Carbide Blade QTY:5	
	Metzenbaum straight scissors - 9 inch length - Tungsten Carbide Blade QTY:5	
	Metzenbaum curved scissors - 9 inch length - Tungsten Carbide Blade QTY:5	
	<b>Retractors/Hooks/Holders/spreaders</b>	
	Skin hook - single prong - fine QTY:4	
	Skin hook - single prong - standard QTY:4	
	Volkmann's cat's paw retractor - 3 prongs sharp QTY:4	
	Volkmann's cat's paw retractor - 3 prongs blunt QTY:4	
	Volkmann's cat's paw retractor - 4 prongs sharp QTY:4	
	Volkmann's cat's paw retractor - 4 prongs blunt QTY:4	
	Balfour abdominal retractors complete Set QTY:2	
	Langenback small blade retractor pair QTY:5pair	
	Langenback medium blade retractor pair QTY:5pair	
	Langenback large blade retractor pair QTY:5pair	
	Cherny's retractor broad blade QTY:5	
	Cherny's retractor narrow blade QTY:5	
	Deaver's retractor - hollow grip handle - 12 inch long - 1 inch, 2 inch, 3 inch wide (all items in One Set) QTY:2set	
	Self retaining retractor - scalp-mastoid type - 4 prongs QTY:2	
	Self retaining retractor - scalp-mastoid type - 2 prongs QTY:2	
	Jansen Self retaining retractor - screw type - 4 prongs - small QTY:3	
	Bulldog hemostatic forceps 5.5 cm straight QTY:5	
	Bulldog hemostatic forceps 3.5 cm straight QTY:5	
	Morris retractors QTY:2	
	Rib spreader QTY:1	
	Rib approximator QTY:1	
	DeBakey tissue forceps 5/7/8 inch long, tip 1/1.5/2/3 mm (all items in One Set) QTY:2set	
	BP Knife Handle - no 7 - 152mm length matte finish QTY:10	
	Corwin Knife Handle - 152mm length Matte finish QTY:10	
	Suprapubic cystosomy(SPC) set QTY:3	
	Backhaus Towel clips - 9 inch length QTY:10	
	Babcock's Tissue Forceps - 9 inch length - 12mm Jaw QTY:5	
	Haemostatic Artery Forceps - slight curved - 8 inch length QTY:5	
	Haemostatic Artery Forceps - right angled - 8 inch length QTY:5	
	Haemostatic Artery Forceps - right angled - 11 inch length QTY:5	
	Thumb forceps - atraumatic/dressine - 4 inch length QTY:10	
	Thumb forceps - atraumatic/dressine - 7 inch length QTY:10	
	Thumb forceps - atraumatic/dressine - 10 inch length QTY:10	
	Thumb forceps - 3x2 teeth/tissue - 7 inch length QTY:10	
	Gastroctomy clamps QTY:3	
	Pylorus clamp QTY:3	
	Dissectomy forceps, illiam's type 140mm, 2.3mm wide with 1.0 mm bite QTY:1	
	Metzenbaum curved scissors - 8 inch length - Tungsten Carbide Blade QTY:10	
	Pott's scissor - Tungsten Carbide Blade - 7 inch length QTY:5	
	Nerve and vessels hook, 7inch length, .3mm/6mm/8mm/10mm head QTY:1	
	Lung Retractor QTY:1	
	Mayo hegar needle holder 5-12 inch length, 0.5mm tip (all items in One Set) QTY:10	
	Cushing dressing forceps 7 inch QTY:1	
	cushing tissue forceps 7 inch 1x2 teeth QTY:1	
	Halstead mosquito forceps 5 inch straight QTY:6	
	Halstead mosquito forceps 5 inch curved QTY:6	

Rochester pean forceps 6.25 inch curved QTY:2
Rochester pean forceps 8 inch curved QTY:2
Rochester oschner forceps 6.25 inch QTY:2
Poolee suction tube straight QTY:2
Ribbon retractor 1.25 inch QTY:1
Ribbon retractor 0.75 inch QTY:1
Ribbon retractor 2 inch QTY:2
Richardson retractor small QTY:3
Richardson retractor large QTY:3
Balfour retractor QTY:2
Lahey gall duct forceps 7.5 inch QTY:1
stainless steel ruler QTY:2
Schmidt tonsil forceps 7.5 inch QTY:2
Macdonald Double Ended Dissector QTY:2
Charnley ring curette QTY:2
Charnley bone curette QTY:1
DeBakey bulldog clamp QTY:1
Tripple trochar sleeve QTY:2
<b>Operating Environment</b>
The unit shall be capable of operating in ambient temperature of 15°C-35°C and relative humidity of 10-95%
The unit shall be capable of being stored continuously in ambient temperature of -5°C -40°C and relative humidity of 10-95%
<b>Standards &amp; Safety Requirements</b>
Must submit ISO13485:2003/AC:2007 for Medical Devices AND
CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.
<b>Warranty</b>
Comprehensive warranty for 2 years.

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## Kidney Surgery Set

No.	Item Specifications	Fill your Specification
<b>I Manufacturer Name:</b>		
<b>II Model No.:</b>		
<b>III Country of Origin:</b>		
<b>Technical Specifications</b>		
FOERSTER SPONGE FCPS SERR STR 245MM QTY:4		
TC MAYO-HEGAR NDLHOLDRHVYSERR150MM QTY:2		
TC MAYO-HEGAR NDL HOLDERHVYSERR185MM QTY:2		
TC HEGAR-MAYO NDL HOLDERHVYSERR 235MM QTY:2		
TC MAYO-HEGAR NDL HOLDERHVYSERR185MM QTY:2		
TC NEEDLE HOLDER Y-DEL SERR200MM QTY:2		
GEMINI CLAMP RT-ANG200MM QTY:2		
GEMINI CLAMP RT-ANG 280MM QTY:2		
BABY-MIXTER FORCEPS CVD 140MM QTY:1		
GEMINI CLAMP RT-ANG 180MM QTY:2		
GEMINI CLAMP RT-ANG 230MM QTY:2		
HARTMANN MOSQUITO QTY:2		
FCPSDEL CVD100MM QTY:2		
MICRO-HALSTED FORCEPS DEL CVD 125MM QTY:2		
HALSTED-MOSQUITO FORCEPS DEL CVD125MM QTY:12		
RANKIN FCPS LONG KELLY DEL CVD160MM QTY:6		
ROCHESTER-PEAN FORCEPS STR 185MM QTY:2		
ROCHESTER-PEAN FORCEPS STR 225MM QTY:4		
KOCHER-OCHSNER FORCEPS CVD 1X2 185MM QTY:2		
ALLIS FORCEPS SX6 190MM QTY:2		
BABCOCK ATR FORCEPS215MM QTY:2		
GUYON ATR KIDNEY CLAMP230MM QTY:2		
DEBAKEY-SATINSKY TANGENTIAL CLMP230MM QTY:2		
GLOVER ATR.BULLDOGCAMP STR.25/68MM QTY:2		
BACKHAUS TOWEL CLAMP 135MM QTY:6		
SURGICAL SCISSORS STR S/B145MM QTY:1		
MAYO SCISSORS STR 170MM QTY:1		
MAYO SCISSORS CVD 170MM QTY:1		
MAYO-HARRINGTON SCISSORS STR 230MM QTY:1		
MAYO-HARRINGTON SCISSORS CVD 230MM QTY:1		
TC METZENBAUM SCISSORS DEL CVD 180MM QTY:1		
TC METZENBAUM SCISSORS DEL STR200MM QTY:2		
KOCHER-LANGENBECK RETR 41X11MM215MM 35X11MM215MM QTY:1		
KOCHER-LANGENBECK RETR QTY:1		
ROUX RETRACTOR3/SET 165MM		
ROUX RETRACTOR 21X22/27X28MM 145MM QTY:1		
ROUX RETRACTOR 26X26/32X36MM 155MM QTY:1		
ROUX RETRACTOR 30X30/36X44MM 165MM QTY:1		
VOLKMANN RETRA-PROSEM: 58 SX19220MM QTY:2		
CUSHING VEIN RETRACTOR 10X13MM 205MM QTY:1		
CUSHING VEIN RETRACTOR 14X18MM 205MM QTY:1		
MIKULICZ ABDOMINAL RETRACTOR 121X50MM QTY:1		
MIKULICZ ABDOMINAL RETRACTOR 86X55MM QTY:1		
MIKULICZ ABDOMINAL RETRACTOR 91X35MM QTY:1		
HABERER RIBBON RETRACTOR 50/40MM 305MM QTY:1		
DEAVER RETRACTOR FIG 1 25MM300MM QTY:1		
DEAVER RETRACTOR FIG 2 25MM 315MM QTY:1		
DEAVER RETRACTOR FIG 3 38MM300MM QTY:1		
HARNGTN LNG SPATULALFLX175X64MM295MM QTY:1		
HARNGTN LNG SPATULALFLX123X64MM295MM QTY:1		
CZERNY RETRACTOR 38X22MM 175MM QTY:2		
CASTRO MICRO SCISSORS ROUND HANDLE 4.5 IN 45 DEGREE BLADES QTY:5		
MICRO SCISSORS ROUND HANDLE 5.5 IN STRAIGHT QTY:5		
JACOBSON MICRO SCISSORS ROUND HANDLE 1.25 DEGREE ANGLE QTY:5		
JACOBSON MICRO SCISSORS 90 DEGREE ANGLE SHARP 6.25 IN QTY:5		
NERVE HOOK QTY:5		
<b>Operating Environment</b>		
The unit shall be capable of operating in ambient temperature of 15°C-35°C and relative humidity of 10-95%		
The unit shall be capable of being stored continuously in ambient temperature of -5°C -40°C and relative humidity of 10-95%		
<b>Standards &amp; Safety Requirements</b>		
Must submit ISO13485:2003/AC:2007 for Medical Devices AND		
CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.		
<b>Warranty</b>		
Comprehensive warranty for 2 years.		

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## Laparoscopy Set for Adult

No.	Item Specifications	Fill your Specification
<b>I Manufacturer Name:</b>		
<b>II Model No.:</b>		
<b>III Country of Origin:</b>		
Forward-Oblique Telescope 30°, enlarged view, diameter 10 mm, length 31 cm, autoclavable, fiber optic light transmission incorporated.		
Plastic Container for Sterilization, suitable for steam, gas, and hydrogen peroxide sterilization and storage, perforated, with lid, external dimensions approx: (w x d x h): 520 x 90 x 45 mm, for use with two rigid endoscopes with a working length of 34 cm		
Trocar, size 11 mm, consisting of: Trocar only, with pyramidal tip Cannula without valve, with insufflation stop-cock, length 10.5 cm Multifunctional Valve		
Trocar, size 6 mm, consisting of: Trocar only, with pyramidal tip Cannula without valve, with insufflation stop-cock, length 10.5 cm Multifunctional Valve length 10.5 cm Multifunctional Valve		
Reduction Sleeve, 11/5 mm		
Reducer, 11/5 mm		
Veress pneumoperitoneum Needle, with spring-loaded blunt inner cannula, LUER-Lock, autoclavable, diameter 2.1 mm, length 13 cm		
Forceps Insert, Grasping Forceps, with especially fine atraumatic, serration, fenestrated, single action jaws, size 5 mm, length 36 cm		
Forceps Insert, Grasping Forceps, atraumatic, wavy, double action jaws, size 5 mm, length 36 cm		
Forceps Insert, Grasping Forceps, double action jaws, size 5 mm, length 36 cm		
Scissors Insert, for scissors, double action jaws, curved, size 5 mm, length 36 cm, for use with trocars size 6 mm		
Scissors Insert, straight, double action jaws, size 5 mm, length 36 cm		
Forceps Insert, Dissecting and Grasping Forceps heavy, double action jaws, size 5 mm, length 36 cm		
Forceps Insert, Claw Forceps, 2 x 3 teeth, single action jaws, size 10 mm, length 36 cm		
Insulated Metal Outer Tube, with LUER-Lock connector, size 5 mm, length 36 cm		
Outer Tube, with LUER-Lock, connector, size 10 mm, length 36 cm		
Metal Handle, style ratchet		
Plastic Handle, without ratchet, with larger contact area at the finger ring, with connector pin for unipolar coagulation		
Plastic Handle, with style ratchet, with larger contact area at the finger ring, with connector pin for unipolar coagulation		
Suction and Irrigation Tube, with lateral holes, anti-reflex surface, with two-way stopcock for single-hand control, size 5 mm, length 36 cm		
Coagulating and Dissecting Electrode, with channel, L-shaped size 5 mm, length 36 cm, for use with suction and irrigation handles		
Injection Needle, LUER-lock, diameter 1.2 mm, size 5 mm, length 36 cm.		
Tier, size 5 mm, length 36 cm, for extracorporeal knotting		

Clip Applicator, for use with Titanium-Clips, dismantling, rotating, with ratchet to lock the jaw part holding the clip, size 10 mm, length 36 cm, consisting of: Metal Handle, with ratchet Metal Outer Tube Insert
Titanium-Clips, medium-large, box with sterile cartridges
Endo-Loop, with knot, for bleeding stumps, with absorbable synthetic suture, for single use, sterile, size 3 mm, length 33 cm,
Applicator, for endo of bleeding vessels
Instrument for Trocar incisions, size 2.8 mm, length 17 cm
Unipolar High Frequency Cord, with 8 mm plug, length 300 cm
Instruments for Laparoscopic Urologic:
Trocar, size 13 mm, consisting of: Trocar only, with pyramidal tip Cannula without valve, with insufflation stop- cock, length 11.5 cm Multifunctional Valve, size 13 mm
Double Reducer 13/10 mm and 13/5 mm
Grasping Forceps, rotating, with connector pin for unipolar coagulation, size 5 mm, length 36 cm, "Tiger-jaw", 2 x 4 teeth, single action jaws, consisting of: Plastic Handle, with style ratchet, with larger contact area Outer Tube, insulated Forceps Insert
Dissecting and Grasping Forceps, rotating, with connector pin for unipolar coagulation, size 5 mm, length 36 cm, double action jaws, consisting of: Plastic Handle, without ratchet, with larger contact area Outer Tube, insulated Forceps Insert
Dissecting and Grasping Forceps, rotating, with connector pin for unipolar coagulation, size 5 mm, length 36 cm, right angled, double action jaws, consisting of: Plastic Handle, without ratchet, with larger contact area Outer Tube, insulated Forceps Insert
Dissecting Forceps, rotating, right angled, size 10mm length 36 cm, double action jaws, consisting of: Metal Handle, with hemostat style ratchet Outer Tube, insert Forceps Insert
Dissecting and Grasping Forceps, rotating, long, size 10 mm, length 36 cm, double action jaws, consisting of: Metal Handle, without ratchet Outer Tube, insulated Forceps Insert
Dissecting and Grasping Forceps, rotating, size 10 mm, length 36 cm atraumatic, double action jaws, double action jaws, length of jaws 40 mm, for organs, consisting of: Metal Handle, without ratchet Outer Tube, insulated Forceps Insert
Grasping Forceps, rotating, dismantling, with connector pin for bipolar coagulation, especially suitable for dissection, double action jaws, size 5 mm, length 36 cm, consisting of: Plastic Handle, without ratchet Metal Outer Sheath Forceps Insert
Surgical Sponge Holder, for atraumatic dissection of tissue layers, size 5 mm, length 30 cm, consisting of: Handle Outer Sheath, insulated Sponge Holder Insert
Needle Holder, straight jaws, axial ring handle with ratchet, size 5 mm, length 33 cm, for use with suture material 2/0-4/0, needle size RB (Ethicon)
Needle Holder, convex/concave, slim jaws, curved left axial ring handle with ratchet, size 5 mm, length 33 cm, for use with suture material 3/0, needle size RB-1 (Ethicon)
Rassweiler Transurethral Bougie, 18 Fr., with working channel 9 Fr., for anastomosis during laparoscopic prostatectomy
Bipolar High Frequency Cord, length 300 cm
Vascular Clamp Applicator, size 10 mm, length 32 cm, consisting of: Inner Rod Outer Sheath for use with Deployable Vascular Clamps 4
Deployable Vascular Clamp, single action jaws, length of jaws 5 cm, size 10 mm, for use with Vascular Clamp Applicator
<b>Operating Environment</b>
The unit shall be capable of operating in ambient temperature of 15°C-35°C and relative humidity of 10-95%
The unit shall be capable of being stored continuously in ambient temperature of -5°C -40°C and relative humidity of 10-95%
<b>Standards &amp; Safety Requirements</b>
Must submit ISO13485:2003(AC:2007 for Medical Devices AND
CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.
<b>Warranty</b>
Comprehensive warranty for 2 years.

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## Laparoscopy Set for Pediatric

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Technical Specifications</b>	
1.1	Straight Forward Telescope 0°, enlarged view, diameter 5 mm, length 24 cm, autoclavable, fiber optic light transmission incorporated	
1.2	Veress pneumoperitoneum Needle, with spring-loaded blunt inner cannula, LUER-Lock, autoclavable, diameter 2.1 mm, length 10 cm	
1.3	Trocar, with conical tip, with LUER-Lock connector for insufflation, size 6 mm, working length 5 cm, consisting of: Cannula Trocar only Valve Seal	
1.4	Trocar, with pyramidal tip, with LUER-Lock connector for insufflation, size 3.5 mm, length 5 cm, consisting of: Cannula Trocar only Valve Seal	
1.5	Scissors, rotating, dismantling, insulated, with connector pin for unipolar coagulation, with LUER-Lock irrigation connector for cleaning, double action jaws, serrated, curved, conical, size 3.5 mm, length 20 cm consisting of: Plastic Handle, without ratchet, with larger contact area Outer Sheath Scissors Insert	
1.6	Dissecting and Grasping Forceps, rotating, dismantling, insulated, with connector pin for unipolar coagulation, with LUER-Lock irrigation connector for cleaning, double action jaws, robust, size 3.5 mm, length 20 cm, consisting of: Plastic Handle, without ratchet, with larger contact area Outer Sheath Forceps Insert	
1.7	Grasping Forceps, rotating, dismantling, insulated, with connector pin for unipolar coagulation, with LUER-Lock irrigation connector for cleaning, single action jaws, fenestrated, with especially fine atraumatic serration, size 3.5 mm, length 20 cm consisting of: Plastic Handle, with hemostat style ratchet, with larger contact area Outer Sheath Force ps Insert	
1.8	Micro Hook Scissors, rotating, dismantling, insulated, with connector pin for unipolar coagulation, with LUER-Lock irrigation connector for cleaning, single action jaws, size 3.5 mm, length 20 cm consisting of: Plastic Handle, without ratchet, with larger contact area Outer Sheath Scissors Insert	
1.9	Dissecting and Grasping Forceps, rotating, dismantling, insulated, with connector pin for unipolar coagulation, with LUER-Lock irrigation connector for cleaning, double action jaws, size 3.5 mm, length 20 cm consisting of: Plastic Handle, without ratchet, with larger contact area Outer Sheath Forceps Insert	
1.10	Coagulation and Dissecting Electrode, L-shaped, insulated, with connector pin for unipolar coagulation, size 3.5 mm, length 20 cm	
1.11	Unipolar High Frequency Cord, with 8 mm plug, length 300 cm	
1.12	Grasping Forceps, with connector pin for bipolar coagulation, especially suitable for dissection, double action jaws, size 3.5 mm, length 20 cm, Plastic Handle Forceps Insert with Outer Sheath	
1.13	Grasping Forceps, with connector pin for bipolar coagulation, with especially fine atraumatic serration, fenestrated, double action jaws, size 3.5 mm, length 20 cm, color code: light blue consisting of: Plastic Handle Forceps Insert with Outer Sheath	
1.14	Scissors, with connector pin for bipolar coagulation, curved blades, double action jaws, size 3.5 mm, length 20 cm, consisting of: Plastic Handle Scissors Insert with Outer Sheath	
1.15	Suction and Irrigation Tube, with lateral holes, size 3.5 mm, length 20 cm, for use with handles for irrigation and suction	
1.16	Handle with Two-Way Stopcock for suction and irrigation, autoclavable, for use with suction and irrigation tubes size 5 mm	
1.17	Probe, dismantling, without connector pin for unipolar coagulation, with LUER-Lock irrigation connector for cleaning, retractable, double action jaws, size 3.5 mm, length 20 cm consisting of Handle Metal Outer Sheath Forceps Insert	
1.18	Needle Holder, jaws curved to left, with tungsten carbide insert, straight handle, with disengageable ratchet, size 3.5 mm, length 20 cm	
1.19	Needle Holder, jaws curved to right, with tungsten carbide insert, straight handle, with disengageable ratchet, size 3.5 mm, length 20 cm	
1.20	Knife, size 3 mm, length 10 cm	
1.21	Percutaneous Pyloric Spreader, rotating, dismantling, without connector pin for unipolar coagulation, with LUER-Lock irrigation connector for cleaning, double action jaws, size 3.5 mm, length 20 cm consisting of: Metal Handle, without ratchet, with larger contact area Metal Outer Sheath Forceps Insert	
1.22	Grasper, for percutaneous use, size 3 mm, length 20 cm	
2	<b>Operating Environment</b>	
2.1	The unit shall be capable of operating in ambient temperature of 15°C-35°C and relative humidity of 10-95%	
2.2	The unit shall be capable of being stored continuously in ambient temperature of -5°C -40°C and relative humidity of 10-95%	
3	<b>Power supply:</b>	
3.1	Input power supply: 220/240 V AC, 50Hz single phase schuko plug	
3.2	Power supply: 220 - 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metres in length.	
4	<b>Standards &amp; Safety Requirements</b>	
4.1	Must submit ISO13485:2003(AC:2007 for Medical Devices AND	
4.2	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
5	<b>Training</b>	
5.1	Must provide user & service training.	
6	<b>Warranty</b>	
6.1	Comprehensive warranty for 2 years.	
7	<b>Maintenance Service During Warranty Period</b>	
7.1	Supplier must assure planned preventive maintenance (PPM) along with corrective/breakdown maintenance whenever required.	
8	<b>Documentation</b>	
8.1	User (Operating) manual in English Should provide 2 sets(hardcopy and soft-copy)	
8.2	Service (Technical / Maintenance) manual in English Should provide 2 sets(hardcopy and soft-copy)	
8.3	List of important spare parts, accessories and consumables with their part numbers and costing.	

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## Manometry Device

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Technical Specifications</b>	
1.1	Windows 10 OS based with Spatiotemporal Analysis software for Oesophageal & Anorectal Manometry with latest Chicago version 3 classification	
1.2	Latest Computer with LED monitor, colour laser printer, Keyboard, Mouse and UPS for computer system.	
1.3	Patient unit box for 16 channels with IEC code.	
1.4	Water Perfusion System with 16 capillary Tube and pressure transducer.	
1.5	16 channel or more high resolution Oesophageal manometer Catheter.	
1.6	16 channel or more high resolution Anorectal Catheter.	
1.7	Water Reservoir and Connection for regulator for gas with tubing for 1bar/15PSI	
1.8	The system builds in one specialised trolley.	
1.9	Water heater, Extension cord, spare box with Plastic connector parts.	
1.10	Oesophageal catheter – 2 in No.; Anorectal catheter- 1 in No.	
1.11	3 extra Pressure transducer and capillary tube	
2	<b>Operating Environment</b>	
2.1	The unit shall be capable of operating in ambient temperature of 15°C-35°C and relative humidity of 10-95%	
2.2	The unit shall be capable of being stored continuously in ambient temperature of -5°C -40°C and relative humidity of 10-95%	
3	<b>Power supply:</b>	
3.1	Input power supply: 220/240 V AC, 50Hz single phase schuko plug	
3.2	Power supply: 220 - 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metres in length.	
4	<b>Standards &amp; Safety Requirements</b>	
4.1	Must submit ISO13485:2003(AC:2007 for Medical Devices AND	
4.2	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
5	<b>Training</b>	
5.1	Must provide user & service training.	
6	<b>Warranty</b>	
6.1	Comprehensive warranty for 2 years.	
7	<b>Maintenance Service During Warranty Period</b>	
7.1	Supplier must assure planned preventive maintenance (PPM) along with corrective/breakdown maintenance whenever required.	
8	<b>Documentation</b>	
8.1	User (Operating) manual in English Should provide 2 sets(hardcopy and soft-copy)	
8.2	Service (Technical / Maintenance) manual in English Should provide 2 sets(hardcopy and soft-copy)	
8.3	List of important spare parts, accessories and consumables with their part numbers and costing.	

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## Nerve Stimulator

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Technical Specifications</b>	
1.1	The nerve stimulator should have nerve mapping facility.	
1.2	The nerve stimulator should have Remote control for sterile one handed operation.	

1.3	The stimulator should work on 9V alkaline battery.
1.4	The Power consumption should be 8mA max
1.5	Stimulation current: 5 mA max
1.6	Stimulation Voltage: 95V
1.7	Stimulation frequency: 1Hz/2Hz
1.8	Allowable load impedance: 0 kohms - 12kohms
1.9	Stimulus duration: 10ms to 0.05ms range
1.10	Current measuring accuracy: +/-0.02 mA
1.11	Impedance measuring range: 1 KOHms – 90 Kohms for target stimulation current >0.5 mA
1.12	Weight: 250 g maximum
<b>Free of Cost Accessories:</b>	
	Nerve stimulation needles 24G; 25mm
	Nerve stimulation needles 22G; 50mm
	Nerve stimulation needles: 21G; 100mm
	Nerve stimulation needles 20G; 150mm
	Nerve stimulation needles 18 G, 55mm length with 40cm length catheter set
	Nerve stimulation needles 18 G, 110mm length with 100cm length catheter set
<b>2. Operating Environment</b>	
2.1	The unit shall be capable of operating in ambient temperature of 15°C-35°C and relative humidity of 10-95%
2.2	The unit shall be capable of being stored continuously in ambient temperature of -5°C -40°C and relative humidity of 10-95%
<b>3 Power supply:</b>	
3.1	Input power supply: 220/240 V AC, 50Hz single phase schuko plug
3.1	Power supply: 220 – 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metres in length.
<b>4. Standards &amp; Safety Requirements</b>	
4.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND
4.2	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.
<b>5 Training</b>	
5.1	Must provide user & service training.
<b>6 Warranty</b>	
6.1	Comprehensive warranty for 2 years.
<b>7 Maintenance Service During Warranty Period</b>	
7.1	Supplier must ensure planned preventive maintenance (PPM) along with corrective/breakdown maintenance whenever required.
<b>8 Documentation</b>	
8.1	User (Operating) manual in English Should provide 2 sets(hardcopy and soft-copy)
8.2	Service (Technical / Maintenance) manual in English Should provide 2 sets(hardcopy and soft-copy)
8.3	List of important spare parts, accessories and consumables with their part numbers and costing.

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## Neuroendoscopy Tower

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
<b>Technical Specifications</b>		
<b>HD CAMERA SYSTEM WITH COMPLETE INSTRUMENT SET FOR INTRACRANIAL PROCEDURES, ETV, MARSUPIALISATION OF ARCHNOID CYS, COLLODAL CYST, VENTRICULAR BIPSY ETC</b>		
The system should be truly Digital HDTV endoscopic video camera. The system should have the maximum Resolution of 1920 X 1080 pixels, progressive scan and the consistent use of 16: 9 formats for Input & Output to guarantee genuine HDTV.		
- The system should have facility of Optical & Digital Zoom lens to enhance the quality of Image size & cross speciality usage of the camera system, regardless of the telescope used.		
- USB Port for Capturing FULL HD Videos/ HD Stills in External USB drive and direct interface of USB Printer to facilitate direct printouts.		
- System should have facility of controlling additional equipments like light source/ insufflators and recording device from the camera head.		
- System should have facility to offer various visualization modes for surgery and diagnosis by shifting the color spectrum like <b>BLUE &amp; GREEN</b> light for recognition of the finest tissue Structures and their differentiation.		
- Parallel live display of visualization modes besides white light mode (picture-in-picture).		
- <b>Modular design: Digital FULL HD camera module should be compatible for use with video flexible GI endoscopes.</b>		
<b>Technical Specifications:</b>		
<b>Image sensor: 3X1/3" CCD-Chip.</b>		
Pixels: 1920 x 1080		
AGC: Microprocessor controlled		
Lens: Integrated Zoom Lens f = 15-31 mm (2x optical zoom) Minimum light sensitivity: 1.17 Lux (f = 1.4 mm).		
Control buttons: 3 (2 of them freely programmable).		
Video output: 2 x DVI-D output, 1 x 3G-SDI output, 3 x camera input for communication with compatible camera modules, LAN connection, 4 x USB connection (2 x front, 2 x back).		
Input: Keyboard input for character generator. 5- pole DIN socket.		
Power Supply: 220-240 VAC 50/60 Hz		
Certified to IEC 603-1, 601-2-18, CSA 22.2 No. 601, UL 3601 and CE according to MDD, protection class I/CF		
Documentation system for digital storage of still images and video sequences, with mains cord, power supply: 100/240 VAC, 50/60 Hz		
Exoscope with Horizontal lence tp & Integrated Illuminator, working distance 25 - 75 cm, length 11 cm, autoclavable, with fiber optic light transmission incorporated and condenser lenses.		
<b>High Definition Medical Grade Monitor</b>		
The monitor should have:		
HDTV display in original 16: 9 HDTV format, 1080 p/ 50 & 1080 p/60 displays possible. LED crystal display.		
Max. Resolution of 1920X1080. Screen diaonal – 26".		
Desk top with pedestal.		
Should have the facility of PIP mode.		
<b>Specifications</b>		
HD TFT Flat Screen Monitor with stand size 26", Aspect Ratio 16:9 HD format		
Brightness - 500 cd/m2		
Maximum viewing angle : 178° vertical Contrast ratio: 1400 : 1		
Reaction Time – 8ms Rated power : 115 watts Power Supply 100-240 VAC		
Screen Dimensions : 643 x 396 x 87mm		
<b>Video Inputs :</b> 2" DVI-D, 2" 3G SDI, 1" S Video ,Composite 1" RGB/VGA, 1" RS 232 , 1" RJ 45 Interface.		
<b>Output:</b> 1" DVI, 1" 3G SDI, 1" S Video		
<b>Accessories External 24VDC Power Supply, Mains Cord, Pedestal. Certified to : EN 60601-1, protection class IPX 1</b>		
<b>Xenon Light Source with Fiber optic cable</b>		
- Lamp type: Xenon 15V, 300 Watt		
- Color Temperatures 6000K		
- Light Outlets – 1		
- Light Intensity Adjustment :- Continuously adjustable either manually or automatically by cameras video output signal.		
- Should be supplied with Diameter 4.8mm, Length 300cm.		
Certified To :- IEC 603-1 & UL 544 CE According to MDD, protection class I/CF		
Equipment Cart LC, rides on 4 anti-static dual wheels equipped with locking brakes, central beam with integrated electrical sub distributors with 6 sockets, grounding plugs, Dimensions in mm (w x h x d): Equipment cart: 830 x 1474 x 730, Shelf: 630 x 25 x 510, Caster diameter: 125 mm consisting of: Module, equipment cart.		
Ventriculoscopewith Wide Angle Straight Forward Telescope 6", angled eyepiece, outer diameter 6.1 mm, length 18 cm, working channel diameter 2.9 mm, irrigation/suction channel diameter 1.6, autoclavable, fiber optic light transmission incorporated.		
Telescope 45°, enlarged view, ø 3.3 mm, length 25 cm, autoclavable, fiber optic light transmission incorporated.		
Operating Sheath, graduated, rotating, outer diameter 6.8 mm, working length 13 cm for use with Venticuloscope Obturator for use with Operating Sheath		
<b>Hand Instruments</b>		
Scissors, pointed, rotating, dismantling, with irrigation connector for cleaning, single action jaws, diameter 2 mm, working length 30 cm consisting of: Metal Handle, without ratchet . Outer Sheath, with scissors insert		
Biopsy Forceps, rotating, dismantling, with irrigation connector for cleaning, double action jaws, diameter 2 mm, working length 30 cm consisting of: Metal Handle, without ratchet Outer Sheath, with forceps insert		
Grasping Forceps, rotating, dismantling, with irrigation connector for cleaning, single double action jaws, diameter 2 mm, working length 30 cm consisting of: Metal Handle, without ratchet . Outer Sheath, with grasping forceps insert		
Biopsy Forceps rotating, dismantling, with irrigation connector for cleaning, single action jaws, diameter 2.7 mm, working length 30 cm consisting of: Metal Handle, without ratchet, Outer Sheath, with forceps insert		
Ventriculostomy Forceps, diameter 1.7 mm, working length 30 cm		
Forceps, for ventriculostomy, flexible, double action jaws, diameter 1 mm, working length 30 cm		
Biopsy Forceps, double action jaws, flexible, diameter 1 mm, working length 30 cm		
Scissors, pointed, lightly curved jaws, double action jaws, diameter 1.7 mm, length 30 cm		
Puncture Needle		
<b>Monopolar , Bipolar &amp; cords</b>		
Spatula Electrode, unipolar, flexible, diameter 1 mm, working length 45 cm		
Bipolar Coagulation Electrode, diameter 1.7 mm, working length 30 cm		
Bipolar Forceps, long, flat jaws, outer diameter 2.4 mm, consisting of: Bipolar Ring Handle , Outer Sheath , Bipolar Insert, for single use, package of 5.		
Unipolar High Frequency Cord, with 4 mm plug, length 300 cm. For use with HF units .		
Bipolar High Frequency Cord, length 300 cm.		
<b>Accessories to perform Cranial endoscopy</b>		
Articulated Stand, reinforced version, only L-shaped, with one mechanical central clamp for all five joint functions, height 48 cm, operating range 52 cm, with fastene		
Socket to clamp on the operating table, for use with European and United States		
standard rails, also suited for rails from 25x10 up to 35x8 mm, with lateral clamping element for height adjustment of the articulated stand		
Clamping Jaw, metal, for use with instrument and telescope sheaths, clamping range 4.8 up to 12.5 mm, with fastener.		
Adaptor autoclavable, permits telescope changing under sterile conditions		
Plastic Container for Sterilizing and Storage, perforated, with transparent lid, with inserts for two angeled rigid telescopes, external dimensions (w x d x h): 515 x 240 x 84 mm		
Plastic Container for Sterilization and Storage of Variable Instrument Sets, perforated, with transparent lid, with silicone mat, two-level storage, (1 additional insert), external dimensions (w x d x h): 545 x 260 x 115 mm.		
<b>PAEDIATRIC NEURO ENDOSCOPE</b>		
<b>Telescope &amp; Sheath</b>		
Ventriculoscope, small, Wide Angle Straight Forward Telescope 6", with angled eyepiece, outer diameter 3.6 mm, length 18, working channel diameter 1.6 mm, with suction and irrigation channel diameter 0.8 mm, autoclavable, with irrigation adapter, fiber optic light transmission incorporated, for use with: small operating sheath.		
Forward Oblique- Telescope 0°, enlarged view, diameter 2 mm, length 26 cm, autoclavable, fiber optic light transmission incorporated.		
Obturator, for use with operating sheath.		
Obturator, for use with operating sheath and optic.		

Operating Sheath, small, outer diameter 4.5 mm, working length 13.3 cm.	
<b>Hand Instruments</b>	
Biopsy Forceps, double action jaws, diameter 1.3 mm, working length 30 cm	
Scissors, single-action jaws, semi-rigid, diameter 1.3 mm, working length 30 cm	
Unipolar Coagulating Electrode, semi-rigid, diameter 1.3 mm, working length 30 cm	
Bipolar Coagulation Electrode, diameter 1.3 mm, working length 30 cm	
Grasping Forceps, double-action jaws, semi-rigid, diameter 1.3 mm, working length 30 cm	
<b>Monopolar, Bipolar &amp; cords</b>	
Bipolar Coagulation Electrode, semi-rigid, O.D. 1.3 mm.	
<b>Endoscopic Management of CSF rhinorrhea - Optic Nerve decompression, Pituitary macro and micro endonasal transsphenoidal chordomas and far extended approaches for all lesions from Crisagallie to CV lucinton using transclival transplanum transcribriform and transsphenoidal approach</b>	
<b>Telescope &amp; Sheath</b>	
Straight Forward Telescope 0°, enlarged view, diameter 4 mm, length 18 cm, autoclavable. Fiber optic light transmission incorporated.	
Suction and Irrigation Sheath 0° for endoscopic diagnosis and surgery of the paranasal sinuses and anterior skull base, vertical oval, diameter 4.8 mm x 6 mm, with separate channel for suction and irrigation, for use with Irrigation and Suction Handles.	
Forward-Oblique Telescope 30°, enlarged view, diameter 4 mm, length 18 cm, autoclavable. Fiber optic light transmission incorporated.	
Suction and Irrigation Sheath 30°, for endoscopic diagnosis and surgery of the paranasal sinuses and anterior skull base, vertical oval, diameter 4.8 x 6 mm, with separate channel for suction and irrigation, for use with Irrigation and Suction Handles.	
Straight Forward Telescope 0°, enlarged view, diameter 4 mm, length 30 cm, autoclavable. Fiber optic light transmission incorporated.	
Suction and Irrigation Sheath 0°, for endoscopic diagnosis and surgery of the paranasal sinuses and anterior skull base, vertical oval, diameter 4.8 mm x 6 mm, with separate channel for suction and irrigation, for use with Irrigation and Suction	
Handles 28161 TD/TT/D/IT, 223630, Cleaning Accessories 28160 TK - TTL and HOPKINS® II Telescope 28164 AA	
Irrigation and Suction Handle, with push button valve consisting of: Handle, with ergonomic ring handle and finger grip plate, for use with Irrigation and Suction Sheaths	
<b>Hand Instrument</b>	
Elevator, double-ended semi-sharp and blunt, length 26 cm	
Nucleus Cutting Forceps single action jaws, movable jaw opening upwards, diameter 3.5 mm, working length 20 cm	
Nasal Forceps 45° upturned, size 1, working length 11 cm	
Nasal Forceps, straight, size 1, working length 11 cm	
Antrum Punch, backward cutting, sheath 360° rotatable, with fixing screw, working length 10 cm.	
<b>Dissector</b>	
Dissector, sharp, round spatula, tip angled 45°, size 2 mm, with round handle, length 25 cm	
Elevator, sharp, flat long spatula, tip angled 15°, size 1.5 mm, with round handle, length 25 cm	
Hook, 90°, blunt, length 25 cm, with round handle	
Seeker, 90°, with ball end, diameter 0.4 mm, length 25 cm	
<b>Scissor</b>	
Scissors, straight, with small handle, with cleaning connector, working length 18 cm	
Scissors, curved to right, with small handle, with cleaning connector, working length 18 cm	
Scissors, curved to left, with small handle, with cleaning connector, working length 18 cm	
Scissors, curved upwards, with small handle, with cleaning connector, working length 18 cm	
Scissors, upturned 45°, delicate, sheath 360° rotatable, with cleaning connector, working length 18 cm	
<b>Forceps</b>	
Forceps, very delicate, oval cupped jaws 0.9 mm, curved upwards, working length 18 cm	
Spoon Forceps, spoon size 3 x 10 mm, single action jaws, working length 17 cm	
Miniature Grasping Forceps, serrated, straight, working length 18 cm	
Miniature Forceps, through-cutting, with fine flat jaws, bite 1 mm, straight, working length 18 cm	
Nasal Forceps, with extra fine flat jaws, through-cutting, tissue sparing, width of cut 1.5 mm, straight sheath, straight jaws, with cleaning connector, working length 18 cm	
Nasal Forceps, with extra fine flat jaws, through-cutting, tissue sparing, width of cut 1.5 mm, straight sheath, jaws angled upwards 45°, with cleaning connector, working length 18 cm	
Nasal Forceps, with extra fine flat jaws, through-cutting, tissue sparing, width of cut 1.5 mm, straight sheath, jaws angled downwards 45°, with cleaning connector, working length 18 cm	
<b>Curette</b>	
Curette, round spoon, tip slightly angled, size 2 mm, with round handle, length 25 cm	
Curette, round spoon, tip angled, size 2 mm with round handle, length 25 cm	
Curette, round wire, ID 3 mm, tip angled 45°, with round handle, length 25 cm	
Ring-Curette round wire, ductile, ID 3 mm, tip angled 45°, with round handle, length 25 cm	
Curette, round wire, ID 3 mm, distally curved shaft, with round handle, length 25 cm	
Curette, stirrup-shape, blunt, with round handle, length 25 cm	
<b>Monopolar, Bipolar &amp; Cord</b>	
Coagulation Ball Electrode, diameter 2 mm, laterally curved, working length 13 cm	
Take-apart Bipolar Forceps, width 1 mm delicate jaws, distally angled 45°, horizontal closing, outer diameter 3.4 mm, working length 20 cm, consisting of: Handle, Outer Tube, Inner Tube, Bipolar Insert.	
Bipolar Forceps Insert, delicate, 1 mm, distally angled 45°, axial closing, axial closing, size 3 mm, length 20 cm	
Bipolar High Frequency Cord, length 300 cm.	
<b>Suction Tube</b>	
Suction Tube, with cut-off hole, drop-shaped, with distance markings, conical distal end, 6 Fr., working length 15 cm	
Suction Tube, with cut-off hole, drop-shaped, with distance markings, conical distal end, 8 Fr., working length 15 cm	
Suction Tube, with cut-off hole, drop-shaped, with distance markings, conical distal end, tip curved upwards, ball end, 2.4 mm, working length 15 cm	
Suction Tube, with cut-off hole, drop-shaped, with distance markings, conical distal end, malleable, 6 Fr., working length 15 cm	
Suction Tube, with cut-off hole, drop-shaped, with distance markings, conical distal end, malleable, 8 Fr., working length 15 cm	
Insulated Cannula for suction and coagulation, O.D.: 3 mm, 90° curved, working length 16 cm	
<b>Punch</b>	
Bone Punch, detachable, rigid, upbiting 60° forward, size 1 mm, working length 17 cm	
Bone Punch, detachable, rigid, upbiting 60° forward, size 2 mm, working length 17 cm	
Bone Punch, detachable, rigid, downbiting 60° forward, size 1 mm, working length 17 cm	
Bone Punch, detachable, rigid, downbiting 60° forward, size 2 mm, working length 17 cm	
Plastic Container for Sterilization and Storage of Variable Instrument Sets, perforated, with transparent lid, with silicone mat, two-level storage, (1 additional insert), external dimensions (w x d x h): 545 x 260 x 115 mm.	
<b>Instrumentation set for Paracranial Lumbar Interlaminar and Transforaminal Endoscopic Surgery without GA (General Anesthesia)</b>	
<b>Telescope &amp; Sheath</b>	
Wide Angle Telescope 25°, oblique view, outer diameter 6.6 mm, working channel diameter 3.6 mm, length 18 cm, autoclavable, fiber optic light transmission incorporated.	
Operating Sheath, distal 45° oblique, integrated irrigation adaptor, outer diameter 7.5 mm, inner diameter 6.8 mm, length 17 cm.	
Dilation Sleeve, with two ports, outer diameter 6.5 mm, inner diameter 1.4 mm, length 22 cm.	
Punch Sleeve, for use with operating sheaths	
Fixation Handle, for adjustment of dilation sleeves with outer diameter 2.5 - 6.5 mm	
<b>Hand Instruments</b>	
Puncture Needle, including stylet, diameter 1.2 mm, working length 25 cm, with 0.8 mm opening for guide wire Guide wire, blunt on both sides, Ø 0.7 mm, working length 41 cm, Package of 5 pc.	
X-ray Ruler, with special marking for midline and 2 mm- and cm-slots for radiologic measurement, total length 30 cm	
Mallet, with Nylon replacement, length 22.5 cm	
Palpation Hook, rotating, dismantling, not insulated, without connector pin for unipolar coagulation, with Lock Irrigation connector for cleaning, with distal ball, bendable to 90°, diameter 2.7 mm, working length 36 cm consisting of: Metal Handle, without ratchet, with plastic rings with larger contact area Outer Sheath with Palpation Hook Working Insert.	
Palpation Hook, with distal ball, bendable to 90°, with irrigation connector for cleaning, diameter 3.5 mm, working length 36 cm, consisting of: Metal Handle, without ratchet, Outer Sheath with Palpation Hook Working Insert.	
Palpation Hook, distally angled 45°, diameter 2 mm, working length 34 cm	
Dissector, Ø 2.6 mm, working length 36 cm, distally 45° bended.	
Punch, dismantling, 90° downbiting, not through-cutting, working length 30 cm, consisting of: Punch Insert, Outer Sheath, Handle.	
Punch, dismantling, 45° downbiting, not through-cutting, working length 30 cm, consisting of: Punch Insert, Outer Sheath, Handle	
Forceps with distal hook, rotatable, single action jaws, size 3.5 mm, working length 36 cm, consisting of: Plastic Handle, without ratchet with connector pin for unipolar coagulation, Biopsy forceps insert with distal hook, working length 36 cm, diameter 3.5 mm	
Grasping forceps with 90° opening, single action jaws, Ø 3.5 mm, working length 36 cm	
Grasping Forceps, double action jaws, diameter 2.7 mm, length 36 cm	
Grasping Forceps, rotating, dismantling, insulated, with connector pin for unipolar coagulation, with Lock adaptor for cleaning, single action jaws, fenestrated, size 3 mm, length 36 cm, consisting of: Plastic Handle, without ratchet, Outer Sheath, with forceps insert	
Deflectable Punch, Ø3.5mm, working length 360mm	
Deflectable Forceps, Ø3.5mm, working length 360mm	
Trephine, with round handle, inner diameter 3.2 mm, outer diameter 4.2 mm, working length 22 cm	
Trephine, inset diameter 1.6 mm, outer diameter 2.7mm, working length 30 cm with edged handle.	
<b>Bipolar &amp; cords</b>	
Angled bipolar probe, Ø 2.5 mm, working length 36 cm consisting of Bipolar probe insert, Sheath for probe, Bipolar Spring Handle.	
Bipolar High Frequency Cord, length 300 cm.	
<b>Containers for Sterilization</b>	
Plastic Container for Sterilizing and Storage, perforated, with transparent lid, with inserts for two angled rigid telescopes, external dimensions (w x d x h): 515 x 240 x 84 mm	
Plastic Container for Sterilization and Storage of Variable Instrument Sets, perforated, with transparent lid, with silicone mat, two-level storage, (1 additional insert), external dimensions (w x d x h): 545 x 260 x 115 mm.	
<b>Endoscopic Lumbar Discectomy &amp; Root decompression for all types of disc Herniation from Central to Far lateral disc and for treatment of Lumbar stenosis along with Bilateral decompression using Unilateral approach</b>	
<b>Telescope</b>	
Forward-Oblique Telescope 30°, eversion angled 45°, diameter 4 mm, length 9.5 cm, autoclavable, fiber optic light transmission incorporated.	
Straight Forward Telescope 30°, Eversion 45° angled, diameter 4 mm, length 12 cm, for use with system, autoclavable, Fiber optic light transmission incorporated.	
<b>Localizer</b>	
Puncture Needle, including stylet, diameter 1.8 mm, working length 18 cm, with 1.3 mm opening for guide wire	
Guide wire, not sterile, diameter 1.2 mm, length 31 cm, package of 10	
<b>Dilation Sleeve</b>	
Dilation Sleeve, OD5.2mm, ID 1.5 mm, graduated, length 23cm, colour code white	
Dilation Sleeve, OD8.9 mm, ID 5.3 mm, graduated, length 21 cm, colour code yellow	
Dilation Sleeve, graduated, inner diameter 9 mm, outer diameter 12.7 mm, length 19 cm, color code: orange	
Dilation Sleeve, OD14.9mm, ID12.9mm, graduated, length 17cm, colour code red	
Dilation Sleeve, OD16.9 mm, ID15.1 mm, graduated, length 15cm, colour code green	
Dilation Sleeve, OD18.9 mm, ID17.1 mm, graduated, length 14 cm, colour code blue	

Dilation Sleeve, OD20.9 mm, ID19 mm, graduated, length 13 cm, colour code black
<b>Trocar &amp; Attachments diameter 15 mm</b>
Trocar, diameter 15 mm, working length 40 mm, for use with Attachment , Telescope Sheath and Telescope 30°
Trocar, diameter 15 mm, working length 70 mm, for use with Attachment and Telescope 30°
Attachment diameter 15 mm for use with Trocar , and telescope.
Attachment , diameter 15 mm, for use with Trocars and Telescopes, movable inside the trocar
Telescope Sheath, movable, for use with Telescope 30° and Attachments
Telescope Sheath
<b>Trocar &amp; Attachments diameter 19 mm</b>
Trocar, diameter 19 mm, working length 40 mm, for use with Attachment .
Telescope Sheath and Telescope 30°.
Trocar, diameter 19 mm, working length 74 mm, for use with Attachment and Telescope
Trocar, diameter 19 mm, working length 97 mm, for use with Attachment and Telescope 30°
Attachment , diameter 19 mm, for use with Trocars and Telescopes 30°
Attachment, movable inside the trocar, diameter 19 mm, for use with Trocars and Telescopes 30°
<b>Trocar &amp; Attachments diameter 23 mm</b>
Trocar, diameter 23 mm, working length 40 mm, for use with Attachment , Telescope Sheath and Telescope 30°
Trocar, diameter 23 mm, working length 76 mm, color code: black, for use with Attachment.
Trocar, diameter 23 mm, working length 99 mm, color code: black, for use with Attachment and Telescope 30°
Attachment, diameter 23 mm, for use with Trocars , and Telescopes 30°
Attachment, movable inside the trocar, diameter 23 mm, or use with Trocar and Telescope 30° .
<b>Bone Punches</b>
Bone Punch, dismantling, 90° upbiting, not through-cutting, 2 mm, working length 24 cm
Bone Punch 40°, upbiting forward, size 2 mm, working length 24 cm
Punch, dismantling, bayonet-shaped, fixed, downbiting 40° forward, 2 mm, working length 17 cm
Punch, dismantling, bayonet-shaped, fixed, upbiting 40° forward, 2 mm, working length 17 cm
<b>Hand Instruments</b>
Spoon Forceps, dismantling, robust, oval, spoon size 3 x 10 mm, single action
jaws, working length 20 cm
Suction Tube, with cut-off hole and stylet, LUER, working length 15 cm, 2.5 mm
Suction Tube, with distal nerve retractor, with cut-off hole, LUER-lock connector, diameter 2.7 mm, working length 15 cm
Tube, with cut-off hole and stylet, LUER, diameter 4 mm, working length 15 cm
Hook Scissors, single action jaws, size 2.7 mm, working length 25 cm
Palpation Hook, bayonet-shaped, distally angled 90°, with ball end, with round handle, working length 20 cm
Dissector dead hand, bayonet shaped, 3 mm, curved upwards, with round handle, sharp, working length 16 cm
Nerve Hook, distal width 5 mm, bayonet-shaped, working length 16 cm
Nerve Hook, distal width 3 mm, bayonet-shaped, working length 16 cm
Nerve Retractor, hook length 2 mm, diameter 4 mm, angled sheath, working length 20 cm
Curette, small, curette size (l x w): 2.7 x 4 mm, bayonet-shaped, distal angled 45°, working length 20 cm
<b>Bipolar &amp; Cords</b>
Bipolar Forceps, rounded tip, width 2 mm, outer diameter 3.4 mm, working length 20 cm, consisting of: Bipolar Ring Handle, Outer Sheath , Inner Sheath , Forceps Insert
Take-apart Bipolar Forceps, width 1 mm delicate jaws, distally angled 45°
horizontal closing, outer diameter 3.4 mm, working length 20 cm, consisting of: Handle , Outer Tube , Inner Tube , Bipolar Insert
Bipolar High Frequency Cord, Length 300 cm
<b>Accessories to perform Spinal endoscopy</b>
Articulated Stand, reinforced version, only, L-shaped, with one mechanical central clamp for all five joint functions, height 48 cm, operating range 52 cm, with fastener.
Socket to clamp on the operating table, for use with European and United States standard rails, also suited for rails from 25x10 up to 35x8 mm, with lateral clamping element for height adjustment of the articulated stand Plastic Container for sterilization and Storage of Variable Instrument Sets, perforated, with transparent lid, with silicone mat, two-level storage, (1 additional insert), external dimensions (w x d x h): 545 x 260 x 115 mm.
<b>Operating Environment</b>
The product offered shall be designed to be stored and to operate normally under Power Supply, Climate, Temperature, Humidity, etc. for Sudan.
Power supply: 220 – 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metre in length.
Shall provide UPS of suitable rating with voltage regulation and spike protection for 30 minutes back-up.
<b>Standards and Safety Requirements</b>
Must submit ISO 13485:2003/AC: 2007 AND
CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.
Electrical safety conforms to standards for Electrical Safety IEC 60601-2-37 Medical electrical equipment – Part 2-37: Particular requirements for the basic safety and essential performance of ultrasonic medical diagnostic and monitoring equipment.
<b>User Training</b>
Must provide user training (including how to use and maintain the equipment).
<b>Warranty</b>
Comprehensive warranty for 2 years after acceptance.
<b>Maintenance Service During Warranty Period</b>
During the warranty period supplier must ensure preventive maintenance and corrective/breakdown maintenance whenever required.
<b>Documentation</b>
User (Operating) manual in English.
Service (Technical / Maintenance) manual in English.
List of important spare parts and accessories with their part number and costing.

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## Neurovascular Set

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
	<b>Technical Specifications</b>	
	Dissecting Forceps Debakey, Atrumatic, 2 mm 8" QTY:2	
	Dissecting Forceps Debakey, Atrumatic, 2.7 mm 10" QTY:2	
	Dissecting Forceps Atrumatic Debakey 1.5 mm, 1.5 mm 6" QTY:2	
	Dissecting Forceps Atrumatic Debakey 1.5 mm, 1.5 mm 7" QTY:2	
	MicroRing Tip Forceps, 20 CM IDPC QTY:2	
	Gerald Debakey Forceps, 20 CM IDPC QTY:2	
	Jamson Scissors 6" QTY:2	
	Needle Holder Rydler T.C. 6" QTY:2	
	Needle Holder Rydler T.C. 7" QTY:2	
	Needle Holder Mayohegar 9" T.C. QTY:2	
	Needle Holder Mayohegar 8" T.C. QTY:2	
	Needle Holder Vascular 7" T.C. QTY:2	
	Needle Holder Vascular 8" T.C. QTY:2	
	Needle Holder Vascular 5" T.C. QTY:2	
	Lung Holding Forceps 8" QTY:2	
	Semb's Clamp QTY:2	
	Mixer 9" QTY:2	
	Mixer 7" QTY:2	
	Mixer 6" QTY:2	
	Ring Bull Dog Clamp 120 mm QTY:2	
	Coolley Derra Clamp Assorted 17 CM QTY:2	
	Debakey Casteneda Clamp, Curved Jaws, 15 CM QTY:2	
	Kay's Clamp 21 CM QTY:2	
	Debakey Vascular/Aortic Cross Clamp 70 Degree 25 CM QTY:2	
	Debakey Vascular/Aortic Cross Clamp 70 Degree 21 CM QTY:2	
	Debakey Vascular/Aortic Cross Clamp 70 Degree 12.5 CM QTY:2	
	Satansky Clamp 12.5 CM QTY:2	
	Satansky Clamp 19 CM QTY:2	
	Satansky Clamp 23 CM QTY:2	
	Satansky Clamp 25 CM QTY:2	
	Debakey Vascular Clamp, Curved 5- Shaped 12.5 CM QTY:2	
	Debakey Vascular Clamp, Straight 19 CM QTY:2	
	Debakey Vascular Clamp, Straight 25 CM QTY:2	
	Debakey Vascular Clamp, 45 Degree 19 CM QTY:2	
	Chitwood Clamp IDPC QTY:2	
	Needle Holder (Castoviego) 7-0 needle 18 CM QTY:2	
	Needle Holder (Castoviego) 7-0 needle 21 CM QTY:2	
	Needle Holder (Castoviego) 6-0 needle 18 CM QTY:2	
	Needle Holder (Castoviego) 6-0 needle 21 CM QTY:2	
	Needle Holder (Castoviego) 5-0 needle 18 CM QTY:2	
	Needle Holder (Castoviego) 5-0 needle 21 CM QTY:2	
	Sharp Hook 7" QTY:2	
	Postts Scissors Forward 45 Degree, 7" Ring Handle QTY:2	
	Postts Scissors Forward 45 Degree, 7" Ring Handle QTY:2	
	Postts Scissors Backward 125 Degree, 7" Ring Handle QTY:2	
	Postts Scissors Backward 125 Degree, 7" Ring Handle QTY:2	
	<b>Operating Environment</b>	
	The unit shall be capable of operating in ambient temperature of 15°C-35°C and relative humidity of 10-95%	
	The unit shall be capable of being stored continuously in ambient temperature of -5°C -40°C and relative humidity of 10-95%	
	<b>Standards &amp; Safety Requirements</b>	
	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
	<b>Warranty</b>	
	Comprehensive warranty for 2 years.	

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Technical Specifications</b>	
	<b>Applications:</b> For accurate measurement of moisture, crude protein, starch, fat, ash, amino acids, N, K, and Ca from samples, with the possibility to add other parameters as per customer request, to find out constituents of the samples (mainly from animals and plants) for nutritional and forensics studies.	
	Wavelength Range 400 - 2500 nm	
	Spectral Bandwidth $\leq$ 10nm	
	Spectral resolution $\leq$ 1nm	
	Wavelength accuracy $\leq$ 0.1 nm	
	Wavelength precision $\leq$ 0.005 nm	
	Absorbance range 0 to 2 AU	
	Analysis Time $\leq$ 5 Min	
	Operating Temperature Ambient to +10°C	
	Product analysis All grains, powders, pellets, Liquid, Fibre, meals, slurries, pastes, seeds, Fruits, etc	
	Feed Parameters Moisture, Protein, Oil, Starch, Fibre, Ash, organic compounds, etc	
	Automated background correction for all parameters (as per point 10) to be included with the system.	
	Sample containers/holders to accommodate all types of products to be included with the system.	
	Direct calibration transfer to and from all NIR Spectrometers.	
	Supply of required calibration standards should cover a wide range of feed and raw materials, determines moisture, protein, fat parameters in all types of samples to be included with the system.	
	All associated accessory equipment for the product analysis to be included along with the offer.	
	Required instrument Calibration Standards should be supplied along with instrument.	
	Latest branded computer with instrument control and data analysis software compatible at the above to be included in the offer.	
	<b>Operating Environment</b>	
	The unit shall be capable of operating in ambient temperature of 15°C-35°C and relative humidity of 10-95%	
	The unit shall be capable of being stored continuously in ambient temperature of -5°C -40°C and relative humidity of 10-95%	
	<b>Power supply:</b>	
	Input power supply: 220/240 V AC, 50Hz single phase schuko plug	
	Power supply: 220 – 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metres in length.	
	<b>Standards &amp; Safety Requirements</b>	
	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
	<b>Training</b>	
	Must provide user & service training.	
	<b>Warranty</b>	
	Comprehensive warranty for 2 years.	
	<b>Maintenance Service During Warranty Period</b>	
	Supplier must ensure planned preventive maintenance (PPM) along with corrective/breakdown maintenance whenever required.	
	<b>Documentation</b>	
	User (Operational) manual in English Should provide 2 sets(hardcopy and soft-copy)	
	Service (Technical / Maintenance) manual in English Should provide 2 sets(hardcopy and soft-copy)	
	List of important spare parts, accessories and consumables with their part numbers and costing.	

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Technical Specifications</b>	
A. X-Ray Tube		
1.	Generator: High frequency DC generator, operating frequency at least 40kHz	
2.	Line Voltage: 230V-240V, 50-60Hz	
3.	Tube voltage: 57-85KV	
4.	Tube Current: 10 mA	
5.	Exposure compensation: Automatic Exposure Control.	
6.	Focal spot size: Between 0.7mm X 0.7 mm and 0.5mm X 0.5 mm as per IEC standards	
7.	Total Filtration: Equivalent to 2.5mm Al or more	
8.	Magnification of exposures: Should have a constant magnification	
9.	Effective exposure time: Adjustable Timer (Pediatric & Adult) for the available imaging programmes.	
B. Basic Unit		
1.	The x ray machine should have AERB approval certification.	
2.	Should be floor or wall mounted model.	
3.	Should have fully/semi motorized patient positioning system	
4.	Should have 3 laser positioning lights – Mid Sagittal, Frankfurt and Canine	
5.	Patient positioning by Bite block, Chin rest, Chin support and motorized/manual temple support.	
6.	Should have accessibility for wheel chair patients.	
7.	Should have centralized control system with all functions controlled by colour TFT touch screen or PC, Graphical User Interface (GUI) with digital display of technical factors and selected programmes.	
8.	Should have an adjustable form of focal trough depending on jaw shape and size of patient.	
9.	Should have automatic compensation for the cervical vertebrae shadow.	
10.	The imaging geometry should eliminate the redundant shadows and ghost images.	
11.	Should have a test mode which disables X-ray radiation during operation.	
12.	Should have exposure counters separate /or combined for Panoramic, Cephalometry and total no of images	
13.	Should have the following programs:	
a)	Standard Panoramic Program.	
b)	Pediatric program (low dose, reduced exposure area for small patient)	
i)	Automatic Double TMJ Program	
ii)	Sinus program	
e)	Lateral and PA Cephalogram.	
f)	Should Support carpus / hand wrist imaging.	
g)	Submentovertex views.	
14.	Should have motorized up and down movement.	
C. Digital Cephalometric System		
1.	Should have Computerized automatic cephalometric system.	
2.	Should have automatic alignment of radiation source	
3.	Should have functionally designed and easy-to-use head positioner.	
4.	Should have swivelling nasal support.	
5.	Should have magnification scale that appear on the image	
6.	Automatic soft-tissue filter based on the position of the nasion support.	
D. Digital Sensor System		
1.	Should have a high resolution CCD /CMOS flat panel sensor for panoramic and cephalometry. It should be possible to take both panoramic and cephalometric image by using the sensor provided. The cost of one additional sensor shall be quoted separately in the BOQ and the cost offered will not be taken for evaluation.	
2.	CCD pixel size: between 357µm and 150 µm.	
3.	CCD active surface: to be specified.	
4.	Image field: to be specified.	
5.	Pixel matrix: to be specified.	
6.	Soft tissue filter should be software operated.	
E. PC Configuration Requirements		
1.	Latest branded computer with following specifications	
1.	Processor –core i5 4th generation or better or equivalent	
2.	8 GB RAM and 1 TB or more on Hard disk	
3.	Should include 21" LCD/TFT monitor with high resolution to ensure image quality.( Display /monitor resolution min 1024 x1024 or higher)	
4.	CD/DVD Burner.	
5.	Graphics card NVIDIA 2 GB dedicated GPU or equivalent.	
6.	Accept images from CCD/CMOS sensor without any loss of data.	
7.	Capable of archiving & printing selected image to a standard DICOM destination in DICOM 3.0 format (or newer versions).	
8.	Storing images in the local disk for predefined period.	
9.	Should be with upgradeable imaging software.	
F. Functional Requirements For Work Station		
1.	Built in routine for using predefined image processing parameters for image quality enhancement.	
2.	Mechanisms for storing the patient image based on name, date, etc.	
3.	Capability of storing user defined image processing parameters.	
4.	Capability of overwriting predefined image parameter with user defined parameters & storing these two images separately.	
5.	Correcting typographically in patient demographic module, in case the RIS connection was down and manually data entry was done.	
6.	Capability of changing W/L, flipping, rotating, zooming, collimating annotating incoming image.	
7.	Auto routing incoming image to predefined DICOM store (SCP storage) or Print destination (SCP print destination).	
8.	Mechanism of printing multiple images in one film, with the possibility of slide and True size printing.	
9.	The work station should let the user select a film size and lay out for hard copies with a WYSIWYG (What you see is what you get), output look up table selection, number of copies selection capabilities.	
10.	Minimum of 15 pre configured layouts for printing and also possibility of further configuration should be possible.	
11.	Should be provided with table and chair for workstation.	
12.	Should provide necessary cabling work for additional workstations.	
13.	Operating system: Windows 7 or more	
G. Software specifications		
1.	The system should include the following SW applications as standard:	
1.	Special attention should be placed on pediatric applications.	

2. Software for printing on any DICOM printer.
3. Software for storing images on any DICOM3 or newer versions compliance stations.
4. Software for e-filming application: Any Software upgradeability for 5 years to be done by the company
<b>H. Dry Imager System</b>
1. Print images from work stations.
2. Should be capable of printing images in DICOM format / Direct DICOM Compatibility.
3. Mechanism to print images of OPG, Cephal and multiple image prints of IOPA. The tray should be adjustable to (8" x 10") and (10" x 12").
4. Resolution should be 300- 508 dpi or better.
<b>I. Accessories &amp; consumables</b>
1. Films for Dry Imager system – (8" x 10"): 300 numbers
2. Three folded leaded protective barrier – 1 no.
3. 5 KVA Online UPS with 30 minutes backup for operating all the above mentioned equipments.
4. Lead apron light weight Velcro type 1 no, Thyroid guard -1 No, AERB Approved
<b>2. Accessories, spares and consumables</b>
2.1 All standard accessories/consumables/parts required for the proper operation of the above item shall be included in the offer.
<b>3. Operating Environment</b>
3.1 The unit shall be capable of operating in ambient temperature of 10°C-45°C and relative humidity of 10-95%
3.2 The unit shall be capable of being stored continuously in ambient temperature of -20°C -60°C and relative humidity of 10-95%
<b>4. Power supply:</b>
4.1 Input power supply: 220/240 V AC , 50Hz single phase schuko plug
<b>5. Standards and Safety Requirements</b>
5.1 Must submit ISO 9001 or ISO 13485:2003/AC: 2007
5.2 CE or USFDA or TUV approved product certificate.
<b>6. Training</b>
6.1. Must provide user & service training.
<b>7. Warranty</b>
7.1. Comprehensive warranty for 2 years after acceptance.
<b>8. Maintenance Service During Warranty Period</b>
8.1. Supplier must ensure planned preventive maintenance (PPM) along with corrective/breakdown maintenance whenever required.
<b>9. Documentation</b>
9.1. User (Operational) manual in English Should provide 2 sets(hardcopy and soft-copy)
9.2. Service (Technical / Maintenance) manual in English Should provide 2 sets (hardcopy and soft-copy)
9.3. List of important spare parts, accessories and consumables with their part numbers and costing.

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Pediatric and Micro Surgery Surgical Set

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
	<b>Technical Specifications</b>	
a.	<b>Finocchio Chest Retractor – Neonatal - 1</b>	
1.	Blades Size – 10mm x 30 mm	
2.	Retractor Spread – 75 mm	
3.	Arm Length – 50 mm	
4.	Rust Proof Stainless Steel	
2.	<b>Finocchio Chest Retractor – Neonatal - 2</b>	
1.	Blades Size – 10mm x 15 mm	
2.	Retractor Spread – 50 mm	
3.	Arm Length – 50 mm	
4.	Rust Proof Stainless Steel	
3.	<b>Finocchio Chest Retractor – Infant – 2</b>	
1.	Blades Size – 12mm x 40 mm	
2.	Retractor Spread – 90 mm	
3.	Arm Length – 75 mm	
4.	Rust Proof Stainless Steel	
4.	<b>Finocchio Chest Retractor – Small Infant – 2</b>	
1.	Blades Size – 12mm x 34 mm	
2.	Retractor Spread – 90 mm	
3.	Arm Length – 75 mm	
4.	Rust Proof Stainless Steel	
5.	<b>Hoffman Shunt Passer - 2</b>	
1.	Stainless Steel	
2.	Reusable	
3.	Suitable for subcutaneous tunneling for VP Shunt	
4.	Tube – 3.2 mm internal diameter, 4.2 mm Outer diameter	
5.	Size - 35 – 42cms	
6.	<b>Hoffman Shunt Passer - 2</b>	
1.	Stainless Steel	
2.	Reusable	
3.	Suitable for subcutaneous tunneling for VP Shunt	
4.	Tube – 3.2 mm internal diameter, 4.2 mm Outer diameter	
5.	Size - 60 - 65 cms	
7.	<b>Ventricular Cannula – 2</b>	
1.	For Hydrocephalus	
2.	Reusable	
3.	Stainless steel	
4.	Closed end with three side holes	
5.	Graduated	
6.	Size – 5 Fr	
7.	Length – 10 cms	
8.	<b>Ventricular Cannula – 2</b>	
	For Hydrocephalus	
	Reusable	
	Stainless steel	
	Closed end with three side holes	
	Graduated	
	6. Size –7Fr	
	7. Length – 10 cms	
9.	<b>Ventricular Cannula – 2</b>	
	For Hydrocephalus	
	Reusable	
	Stainless steel	
	Closed end with three side holes	
	5. Graduated	
	6. Size – 9 Fr	
	7. Length – 10 cms	
10.	<b>Mayo Dissecting Scissors – 15</b>	
1.	Stainless steel	
2.	Length – 4 Inch	
3.	Curved	
4.	Blunt Tip	
11.	<b>Mayo Dissecting Scissors – 15</b>	
1.	Stainless steel	
2.	Length – 6 Inch	
3.	Curved	
4.	Blunt Tip	
5.	Ring Handle	
12.	<b>Castroviejo blade breaker and holder for Ophthalmology - 5</b>	
1.	short model, squared jaws, round handle with slide lock	
2.	Length – 5 Inch	
3.	Tip – 12 mm, Blunt Tip	
4.	Straight with Round Knurled Handle	
13.	<b>Swiss Model Blade Breaker and holder for Ophthalmology–</b>	
1.	pench Type	
2.	Length – 90 mm	
3.	Tip – 12mm, Blunt tip	
14.	<b>Ribbon Type Malleable Retractor – 5</b>	
1.	Size 1 1/2 inch width, Length – 13 inches	
2.	Malleable	
3.	Ribbon type	
15.	<b>Ribbon Type Malleable Retractor – 5</b>	
1.	Size 1inch width, Length – 13"	
2.	Malleable	
3.	Ribbon type	
16.	<b>Ribbon Type Malleable Retractor – 5</b>	
1.	Size 3/2 inch width, Length – 7 inches	
2.	Malleable	
3.	Ribbon type	

17. Ribbon Type Malleable Retractor – 5	
1. Size 10mm width, Length – 5 inches	
2. Malleable	
3. Ribbon type	
18. Denis Browne Abdominal Retractor – Child Size – 1	
1. Ring/Frame Only	
2. Size – 18x14 cms	
3. Stainless Steel	
4. Oval Sprocket Frame	
19. Denis Browne Abdominal Retractor – Adult Size – 1	
1. Ring /Frame Only	
2. Size – 25x18 cms	
3. Stainless Steel	
4. Oval Sprocket Frame	
20. Valve Allien Retractor Blades for Denis Browne Abdominal Retractors – 2	
1. 40x40 mm blades	
21. Valve Allien Retractor Blades for Denis Browne Abdominal Retractors – 2	
1. 30x40 mm blades	
21. Valve Allien Retractor Blades for Denis Browne Abdominal Retractors – 2	
1. 30x40 mm blades	
22. Valve Allien Retractor Blades for Denis Browne Abdominal Retractors – 2	
1. 50x40 mm blades	
* It should be supplied with two sterilization case from the same manufacturer.	
* The company must quote all items.	
<b>Operating Environment</b>	
The unit shall be capable of operating in ambient temperature of 15°C-35°C and relative humidity of 10-95%	
The unit shall be capable of being stored continuously in ambient temperature of -5°C -40°C and relative humidity of 10-95%	
<b>Standards &amp; Safety Requirements</b>	
Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
<b>Warranty</b>	
Comprehensive warranty for 2 years.	

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## Pediatric Plastic Surgery Set

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
	<b>Technical Specifications</b>	
	<b>Plastic set :</b>	
	US ARMY RETRACTOR - SET OF 2 Qty: 2	
	RAGNEL RETRACTOR D.E. KLEINERT Qty: 2	
	SENN RETRACTOR SHARP D.E. Qty: 2	
	LUER "S" RETRACTOR 5 3/4" DE 6mm and 9mm Qty: 2	
	#3 SCALPEL HANDLE Qty: 2	
	FRADIER SUCTION TUBE 10 French 30des Qty: 1	
	GOODHIL PYNCHON TONSIL SUCTION TUBE Qty: 1	
	DEBAKEY TISSUE FORCEPS, DELICATE 6" 1.5mm Qty: 4	
	GERAL DRESSING FORCEPS 6 3/4" str serr Qty: 2	
	BOWMAN PROBE 5" 00/0 Qty: 1	
	BOWMAN PROBE 5" 1/2 Qty: 1	
	BOWMAN PROBE 5" 3/4 Qty: 1	
	BOWMAN PROBE 5" 5/6 Qty: 1	
	BOWMAN PROBE 5" 7/8 Qty: 1	
	TC MAYO HEGAR NEEDLE HOLDER 6" Qty: 1	
	TC WEBSTER NEEDLE HOLDER 5" SMOOTH Qty: 2	
	RYDER NEEDLE HOLDER 5" TC Qty: 2	
	TC MAYO SCISSORS 6 3/4" STR. BEVELED Qty: 1	
	TC METZENBAUM SCISSORS 5 3/4" CVD. DELICATE Qty: 1	
	LITTLER SUTURE SCISSORS Qty: 1	
	STEVENS TENOTOMY SCISSORS 4 1/8" CVD. BL/BL Qty: 1	
	HARTMAN MOSQUITO FORCEPS 3 1/2" STR. Qty: 8	
	HARTMAN MOSQUITO FORCEPS 3 1/2" CVD Qty: 8	
	JACOBSON MICRO MOSQUITO FORCEPS 5" CVD Qty: 4	
	JACOBSON MICRO MOSQUITO FORCEPS 5" CVD Qty: 2	
	MOSQUITO FORCEPS. 5" STR. (HALSTED) Qty: 2	
	KELLY FORCEPS. 5 1/2" CVD. Qty: 2	
	MIXTER FORCEPS 5 1/4" FULLY CURVED Qty: 1	
	ALLIS TISSUE FORCEPS. 6" 5X6 TEETH Qty: 2	
	BABCOCK FORCEPS 6 1/4" Qty: 2	
	ROCH-OCHENER FORCEPS 1X2 TEETH 5.5" STR. Qty: 4	
	ROCH PLEAN FORCEPS. 6 1/4" CVD. Qty: 2	
	SCHNIDT FORCEPS 7.5" HALF CVD. Qty: 1	
	FOERSTER SPONGE FORCEPS. 7 1/2in STR SERR Qty: 1	
	LORNA (EDNA) TOWEL FORCEPS. 5 1/4" Qty: 2	
	BACKHAUS TOWEL FORCEPS. 3 1/2" Qty: 6	
	BISHOP-HARMON FORCEPS. 1x2T 0.5mm Qty: 2	
	ADSON FORCEPS 4 3/4" 1X2 TEETH & SERRATIONS DEL. - 1.5mm tip width Qty: 2	
	AUSTIN MICRO SUTURE FORCEPS, TW 0.8mm - DL 140mm 1/2". Qty: 2	
	PARALFLEX RETRACTOR 4 3/4" DE set - Set of 2 Qty: 2sets	
	<b>Operating Environment</b>	
	The unit shall be capable of operating in ambient temperature of 15°C-35°C and relative humidity of 10-95%	
	The unit shall be capable of being stored continuously in ambient temperature of -5°C -40°C and relative humidity of 10-95%	
	<b>Standards &amp; Safety Requirements</b>	
	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
	<b>Warranty</b>	
	Comprehensive warranty for 2 years.	

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## Pediatric Scale

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Technical Specifications</b>	
1.1	<b>ELECTRONIC DIGITAL WEIGHING SCALES</b>	
1.2	Capacity – Up to 120 kg	
1.3	Resolution 10 gm.	
1.4	Accuracy + 1to 10 gm.	
1.5	Measuring position supine, sitting and standing.	
1.6	Large LCD Display.	
1.7	Note for all scale weighing, calibration check should be done once half yearly	
2	<b>Operating Environment</b>	
2.1	The unit shall be capable of operating in ambient temperature of 10°C-45°C and relative humidity of 10-95%	
2.2	The unit shall be capable of being stored continuously in ambient temperature of -20°C -60°C and relative humidity of 10-95%	
3	<b>Power supply:</b>	
3.1	Input power supply: 220/240 V AC, 50Hz single phase schuko plug	
4	<b>Standards &amp; Safety Requirements</b>	
4.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
4.2	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
5	<b>Training</b>	
5.1	Must provide user & service training.	
6	<b>Warranty</b>	
6.1	Comprehensive warranty for 2 years.	
7	<b>Maintenance Service During Warranty Period</b>	
7.1	Supplier must ensure planned preventive maintenance (PPM) along with corrective/breakdown maintenance whenever required.	
8	<b>Documentation</b>	
8.1	User (Operator) manual in English Should provide 2 sets(hardcopy and soft-copy)	
8.2	Service (Technical / Maintenance) manual in English Should provide 2 sets(hardcopy and soft-copy)	
8.3	List of important spare parts, accessories and consumables with their part numbers and costing.	

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## Pediatric Thoracotomy Set

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	

	<b>Technical Specifications</b>	
	Ramplay Sponge Forceps 18 cm QTY:3	
	Instrument Pins QTY:2	
	Bonney Dissecting Forceps 1 x 2 Teeth 18 cm QTY:1	
	Moylan Dissecting Forceps 23 cm QTY:2	
	Robert's Artery Forceps 23 cm Straight QTY:10	
	Tudor Edwards, Artery Forceps 23 cm QTY:3	
	Rochester- Ochsner Artery Forceps 1.2 Teeth 16 cm QTY:3	
	Thomson Walker Needleholder 20 cm QTY:2	
	B.P Handle No. 5 QTY:2	
	Duval Tissue Forceps 14 cm QTY:4	
	Metzenbaum Scissors 18 cm Straight QTY:2	
	Nelson Scissors 23 curved QTY:2	
	Tuffier Rib Spreader With 50mm x 45mm Blades And A 165mm Spread QTY:1	
	Semb Periosteal Elevator 13mm Angled Square End QTY:1	
	Tudor Edwards Scapula 16 cm QTY:2	
	Allison Lung Retractor 30 cm QTY:2	
	Morrison Davis Rib Respiratory Slight Curved 24 cm QTY:1	
	Price Thomas Rib Respiratory 17.78 cm QTY:1	
	Semb Pneumonectomy Clamp 23 cm QTY:1	
	<b>Operating Environment</b>	
	The unit shall be capable of operating in ambient temperature of 15°C-35°C and relative humidity of 10-95%	
	The unit shall be capable of being stored continuously in ambient temperature of -5°C -40°C and relative humidity of 10-95%	
	<b>Standards &amp; Safety Requirements</b>	
	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
	<b>Warranty</b>	
	Comprehensive warranty for 2 years.	

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## Pediatric Vascular Surgery Set

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
	<b>Technical Specifications</b>	
	Mayo Russian Dissecting Forceps 9 1/2" QTY:2	
	Dissecting Forceps Toothed 8" QTY:8	
	Dissecting Forceps Toothed 6" QTY:6	
	Suture cutting scissor 8" QTY:10	
	Mayo Scissors ,Straight , With 'Imported' Tungsten Carbide Jaws , 7" QTY:8	
	Metzenbaum Scissors , Curved , With 'Imported' Tungsten Carbide Jaws , 8" QTY:8	
	Metzenbaum Scissors , Curved , With 'Imported' Tungsten Carbide Jaws , 7" QTY:5	
	Duval lung grasping forceps 9" QTY:4	
	Backhaus Towel Clip 6" QTY:50	
	Adult cross clamp large QTY:2	
	Adult cross clamp medium QTY:2	
	Adult cross clamp small QTY:2	
	Chaspi adult straight 10" QTY:4	
	Crerny Retractor Double Ended QTY:1	
	Langenbeck Retractor medium QTY:16	
	Mixture right angle forceps 10" QTY:5	
	Mixture right angle forceps small 6" QTY:2	
	Sponge Holding Forceps 10" QTY:6	
	Tubing Clamp With Guard 8" QTY:18	
	Tubing Clamp With Guard 6" QTY:12	
	Mixture Right Angle Forceps 8" QTY:2	
	Kocher Artery Forceps Curved 8" QTY:32	
	Allis Tissue Forceps 8" QTY:2	
	Artery Forceps, Straight, 6" QTY:15	
	Artery Forceps, Curved, 6" QTY:70	
	Artery Forceps, Curved, 4" QTY:10	
	Mosquito Artery Forceps, Curved, 6" QTY:80	
	Mosquito Artery Forceps, Curved, 5" QTY:20	
	Mosquito Artery Forceps, Straight, 6" QTY:12	
	B.P.Handle No.4 QTY:6	
	B.P.Handle No.3 QTY:6	
	B.P.Handle No.7 QTY:6	
	Nerve Hook Sharp QTY:2	
	Needle holder rider 8" QTY:8	
	Needle holder rider 7" QTY:6	
	Finochitto Rib Spreader , ( medium Size ) QTY:6	
	Tube Holding Organiser 8" QTY:2	
	<b>Operating Environment</b>	
	The unit shall be capable of operating in ambient temperature of 15°C-35°C and relative humidity of 10-95%	
	The unit shall be capable of being stored continuously in ambient temperature of -5°C -40°C and relative humidity of 10-95%	
	<b>Standards &amp; Safety Requirements</b>	
	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
	<b>Warranty</b>	
	Comprehensive warranty for 2 years.	

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## Posterior Spinal Surgical Set

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
	<b>Technical Specifications</b>	
	The system should be available for demonstration as per the requirement of user department.	
	Instrument set should be designed to enhance the efficiency of performing Smith-Petersen Osteotomy(SPO) Pedicle subtraction Osteotomy(PSO) and Vertebral column Resection(VCR) by providing instruments specifically designed for these procedures.	
	System should be able to perform all- posterior resection of all the three columns of the spine to allow full mobilization from an all- posterior approach and it should enable removal of posterior elements and pedicles and circumferential vertebral body.	
	Should have instruments to assist in dural retraction and protection.	
	Nerve root retractors should have small tip on distal portion as well as bent orientations to help prevent dural and nerve root creeping with simultaneous retraction and offset handles to prevent impingance of the surgical line of sight.	
	Triangular shavers should have triangular tip and depth markers with ability to decancellate the pedicle in conical fashion and confirms depth within the pedicle.	
	Bone curettes with triangular, straight, right, left and reverse angle orientations with ability to remove bone at any angle and remove cancellous bone from beneath the posterior vertebral wall.	
	Should have spoon retractors of different size with spoon tip to retract tissue away from lateral wall, upper cannulation for light source to allow better intra operative visualisation, lower cannulation for suction tip to remove excess fluid from surgical site, table arm attachment point to allow hands-free retraction.	
	Should have malleable retractors with ability to retract soft tissue away from lateral wall and could be contoured to surgeon preference.	
	Should have curved cobble of different sizes with ability to dissect soft tissue and accommodate anatomical variations.	
	Should have templates of wedge shaped with depth markings of different sizes to confirm the degree of bony removal necessary to obtain preferred correction.	
	Should have straight osteotomes of different sizes with depth marks and right angled osteotomes with smooth backside to simultaneously protect dura and nerve root when cutting around the pedicle.	
	<b>Operating Environment</b>	
	The unit shall be capable of operating in ambient temperature of 15°C-35°C and relative humidity of 10-95%	
	The unit shall be capable of being stored continuously in ambient temperature of -5°C -40°C and relative humidity of 10-95%	
	<b>Standards &amp; Safety Requirements</b>	
	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
	<b>Warranty</b>	
	Comprehensive warranty for 2 years.	

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## Resectoscope Tower

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
	<b>Technical Specifications</b>	
	PediatricCystoscope- miniature straight telescope, 0 degree, diameter 1.2 -2.0mm, autoclavable and fibre optic light transmission incorporated.	
	PediatricCystoscope- miniature straight telescope, 30 degree, diameter 1.2-2.0mm, autoclavable and fibre optic light transmission incorporated.	
	Should be supplied with Cystoscope-UrethroscopSheath - 7.8 Fr with 3-4 Fr working channel with Obturator and with 2 LUER- lock connectors.	

Should be supplied with 3 Fr grasping forceps, double action jaws, flexible, length 28 cm.	
Should be supplied with 3 Fr biopsy forceps, double action jaws, flexible, length 28cm.	
Should be supplied with 3 Fr Hook Electrode.	
Compatible HF Cord for electrodes- 2 Nos.	
Should be supplied with compatible injection needle, rigid, 3Fr, package of 6 nos.	
<b>NESTROSCOPE SET:</b>	
Pediatric cystoscopy sheath, 9-10 Fr for the above cystoscopy, with LUER LOCK stopcock, for connecting tube for inflow. Should be supplied with a standard obturator.	
Working Element Set consisting of:	
o Working Element	
o Cutting loop	
o Coagulating Electrode	
o High Frequency Cords- 2 Nos	
o Protection Tube- for sterilization and storage of electrodes.	
Cutting Loops, angled, should be supplied along with the set- 6 nos.	
Coagulating Electrodes, hook-shaped, angled with ball end should be supplied along with the set- 6Nos.	
<b>PEDIATRIC OPTICAL URETHROTOME SET 8 Fr:</b>	
Urethrotome sheath 8-9.5 Fr, compatible with same telescope, with LUER-Lock stopcock with obturator	
Working element for urethrotomy Set consisting of:	
o Working Element -1	
o Cold straight - 4 Nos.	
o Cold knife round - 4 Nos.	
<b>Operating Environment</b>	
The unit shall be capable of operating in ambient temperature of 15°C-35°C and relative humidity of 10-95%	
The unit shall be capable of being stored continuously in ambient temperature of -5°C -40°C and relative humidity of 10-95%	
<b>Power supply:</b>	
Input power supply: 220/240 V AC, 50Hz single phase schuko plug	
Power supply: 220 – 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metres in length.	
<b>Standards &amp; Safety Requirements</b>	
Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
<b>Training</b>	
Must provide user & service training.	
<b>Warranty</b>	
Comprehensive warranty for 2 years.	
<b>Maintenance Service During Warranty Period</b>	
Supplier must ensure planned preventive maintenance (PPM) along with corrective/breakdown maintenance whenever required.	
<b>Documentation</b>	
User (Operating) manual in English Should provide 2 sets(hardcopy and soft-copy)	
Service (Technical / Maintenance) manual in English Should provide 2 sets(hardcopy and soft-copy)	
List of important spare parts, accessories and consumables with their part numbers and costing.	

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## Slit Lamp with Tonometry

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
	<b>Technical Specifications</b>	
1.	Slit width: 0-14 mm adjustable	
2.	Slit length: 0.1 –14mm adjustable in steps	
3.	Slit angle: +90 – 90 continuous	
4.	Decentering of slit image: +4 to -4 horizontal	
5.	Diaphragm sizes: 0.2 – 14mm	
6.	Rotation: 0-180 degrees	
7.	Light source: Halogen/Tungsten or LED lamps	
8.	Slit tilt: 0-20 degrees	
9.	Filters: cobalt blue, red free, neutral, UV protection	
10.	Binocular microscope with standard objective and eyepieces	
11.	5x-40x magnification in steps with drum rotation	
12.	6-40 mm field of view	
13.	Movement: base movement (x, y, vertical), adequate chin rest movement	
14.	Motorized imported table for slit lamp	
15.	Applanation tonometer	
16.	Beam splitter	
17.	Slit lamp camera:	
17.1.	Camera- 12.2 Megapixel, Large 3.0 inch LED display, integrated cleaning system, Rechargeable battery, video cable, USB cable or Integrated camera at least 3 Megapixel high resolution.	
18.	8 GB SD/SDHC memory card & power cable.	
19.	Accessories: (1) Bulbs- 06 nos (2) Fuses- 04 Nos	
	<b>Operating Environment</b>	
	The unit shall be capable of operating in ambient temperature of 15°C-35°C and relative humidity of 10-95%	
	The unit shall be capable of being stored continuously in ambient temperature of -5°C -40°C and relative humidity of 10-95%	
	<b>Power supply:</b>	
	Input power supply: 220/240 V AC, 50Hz single phase schuko plug	
	Power supply: 220 – 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metres in length.	
	<b>Standards &amp; Safety Requirements</b>	
	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
	<b>Training</b>	
	Must provide user & service training.	
	<b>Warranty</b>	
	Comprehensive warranty for 2 years.	
	<b>Maintenance Service During Warranty Period</b>	
	Supplier must ensure planned preventive maintenance (PPM) along with corrective/breakdown maintenance whenever required.	
	<b>Documentation</b>	
	User (Operating) manual in English Should provide 2 sets(hardcopy and soft-copy)	
	Service (Technical / Maintenance) manual in English Should provide 2 sets(hardcopy and soft-copy)	
	List of important spare parts, accessories and consumables with their part numbers and costing.	

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## Spinal Fixation Set

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
	<b>Technical Specifications</b>	
	Loves retractor straight 5mm blade -Qty. 2	
	Dura Protector straight & Curved 4mm, 6mm Blade -Qty.2	
	Nerve Hook -Qty.2	
	Carpener Gouge 5mm, 6mm, 8mm -Qty.2 each	
	Self Retaining Retractor with deep Blade (Charley) -Qty.2	
	Flexible Shaft with Drill Bit 3.2 mm length 6mm -Qty.2	
	Femoral head holder -Qty.2	
	Bone Cutting forceps LINK 75-3852 Length 210mm (Double action slightly forward angled jaws) -Qty.2	
	Walton Hemilaminectomy Retractors Link 75-2607/12 (Right) Length - 170mm -Qty. 2	
	Walton Hemilaminectomy Retractors Link 75-2607/11 (left) Length - 170mm -Qty.2	
	Intervertebral Disc Rongeur Double Action jaws angled forward Parallel cut Link 75-3861/03 240 mm -Qty.2	
	Bone Rongeur Extra delicate jaws double action slightly curved jaw Wd- 2x4mm L-230mm -Qty.2	
	Lamina spreader straight, bar ratchet Length 280mm Link 75 -Qty.2	
	2633/01	
	Alligator Rongeur Straight Concave cup jaws with serrated edge Length 130mm -Qty.2	
	Kerrison Rongeur Up cutting, 50deg Angled jaws with ejector Length 200mm -Qty.2	
	Jaw Size 2.0x2.0 mm -Qty.2	
	Jaw Size 4.0x5.0 mm -Qty.2	
	Jaw size 5.0x5.0 mm -Qty.2	
	Jaw size 6.0x5.0 mm -Qty.2	
	Intervertebral Disc Rongeur jaws Straight L - 200mm	
	Jaw width - 1.5mm -Qty.2	
	Jaw width - 2.0mm -Qty.2	
	Jaw width - 2.5mm -Qty.2	
	Intervertebral Disc Rongeur Jaws Straight L - 200mm	
	1.5mm width -Qty.2	
	2.0mm width -Qty.2	
	2.5mm width -Qty.2	
	Intervertebral Disc Rongeur jaws Angled Downward	
	Jaw Width 1.5mm Length 200mm -Qty.2	
	Jaw Width 2.0mm Length 200mm -Qty.2	
	Jaw Width 2.5mm Length 200mm -Qty.2	
	Jaw Width 3.0mm Length 200mm -Qty.2	
	Jaw Width 3.5mm Length 200mm -Qty.2	

<b>Operating Environment</b>	
The unit shall be capable of operating in ambient temperature of 15°C-35°C and relative humidity of 10-95%	
The unit shall be capable of being stored continuously in ambient temperature of -5°C -40°C and relative humidity of 10-95%	
<b>Standards &amp; Safety Requirements</b>	
Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
<b>Warranty</b>	
Comprehensive warranty for 2 years.	

**187 Thoracotomy Set**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
	<b>Technical Specifications</b>	
	Towel clips QTY:24	
	Artery forceps straight 6" QTY:24	
	Artery forceps straight Mosquito QTY:6	
	Artery forceps curved Mosquito QTY:5	
	BP handle No. 4 QTY:2	
	BP handle No. 3 QTY:1	
	BP handle No. 2 QTY:2	
	BP handle No. 7 Long QTY:1	
	Scissors Metzbaum QTY:1	
	Scissors Mayo's straight QTY:1	
	Scissors Mayo's curved QTY:1	
	Scissors Nelson's QTY:1	
	Dissecting forceps toothed QTY:2	
	Dissecting forceps plain QTY:2	
	Kelly's clamps QTY:2	
	Allis tissue forceps QTY:6	
	Babcock forceps QTY:2	
	Needle holder sarot QTY:2	
	Needle holder 21 cm long QTY:2	
	Retractor Czerny's QTY:2	
	Retractor malleable QTY:1	
	Retractor Finochito with 2 pairs of blade (Set) QTY:1	
	Retractors Morris QTY:2	
	Suction nozzle big QTY:1	
	SS kidney tray QTY:1	
	SS Gallipot 6" QTY:1	
	SS Gallipot 3" QTY:5	
	Sponge holder QTY:5	
	Gemini right angle clamp QTY:3	
	Cautry tips-cutting and coagulation	
	SS instrument tray 18" x 14" QTY:1	
	Big Mackintosh QTY:1	
	<b>Operating Environment</b>	
	The unit shall be capable of operating in ambient temperature of 15°C-35°C and relative humidity of 10-95%	
	The unit shall be capable of being stored continuously in ambient temperature of -5°C -40°C and relative humidity of 10-95%	
	<b>Standards &amp; Safety Requirements</b>	
	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
	<b>Warranty</b>	
	Comprehensive warranty for 2 years.	

**188 Tissue Stain**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
	<b>Technical Specifications</b>	
	1. High throughput robotic stainer for Multiple staining applications and should run up to 12 racks in parallel.	
	2. Simultaneous staining of protocols of haematoxylin-eosin and pap stain should be available.	
	3. Equipment should have solvent resistant color touch screen to monitor the staining process using the graphical process representation.	
	4. Racks should be assigned to the correct Staining Protocol based on transponder & Color -code system.	
	5. The equipment should have 34 reagent stations and 6 wash stations of 450ml capacity.	
	6. The equipment should be programmable for 50 programs of upto 40 steps each with incubation time setting from 0 sec to 59 minutes 59 seconds.	
	7. Optional integrated oven with temperature setting from 40B to 70B°C for optim al slide drying is preferred.	
	8. Continuous loading and unloading of slides via rack entry and exit door should be available.	
	9. Specimen slide throughput of at least 200 slides per hour upto 600 slides per hour is required.	
	10. Agitation programmable from 0 to 20 times or continuous should be available.	
	11. Reagent management System, Station information on touch screen & Data Logging should be available.	
	12. Programmable up and down movement of robotic arm should be available.	
	13. Fume extraction fan with charcoal filter to remove hazardous fumes should be available.	
	14. Gentle vibration to slide rack during lifting to reduce carry over contamination should be available.	
	15. Audible warning buzzer in case of any error during operation should be a feature of the equipment.	
	<b>Operating Environment</b>	
	2.1 The unit shall be capable of operating in ambient temperature of 10°C-45°C and relative humidity of 10-95%	
	2.2 The unit shall be capable of being stored continuously in ambient temperature of -20°C -60°C and relative humidity of 10-95%	
	<b>Power supply:</b>	
	3.1 Input power supply: 220/240 V AC, 50Hz single phase schuko plug	
	<b>Standards &amp; Safety Requirements</b>	
	4.1 Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
	4.2 CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
	<b>Training</b>	
	5.1 Must provide user & service training.	
	<b>Warranty</b>	
	6.1 Comprehensive warranty for 2 years.	
	<b>Maintenance Service During Warranty Period</b>	
	7.1 Supplier must ensure planned preventive maintenance (PPM) along with corrective/breakdown maintenance whenever required.	
	<b>Documentation</b>	
	8.1 User (Operating) manual in English Should provide 2 sets(hardcopy and soft-copy)	
	8.2 Service (Technical / Maintenance) manual in English Should provide 2 sets(hardcopy and soft-copy)	
	8.3 List of important spare parts, accessories and consumables with their part numbers and costing.	

**189 Tonsillectomy Set**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
	<b>Technical Specifications</b>	
	1 Draffin's Bipod stand QTY:1	
	Bovle-Davis mouth gag QTY:2	
	Tongue Blades (Plane & Slotted with groove for ET tube) QTY:4each	
	Tonsil holding forcep QTY:2	
	Tonsil dissector and retractor-QTY:2	
	Adenoid curette with and without cage length- 22 cm QTY:4each	
	Yankuer suction tube QTY:2	
	Tonsillar snares QTY:2	
	Loop Applicator, Model F length 27 cm QTY:1	
	Loops for Applicator, Polybutyrolacisid, absorbable, 12 sterile packed, size 1 QTY:1	
	Adenoid Forceps, sharp, length 19 cm QTY:1	
	Needle Holder, tungsten carbide inserts slender, length 18 cm QTY:1	
	Tinaculum QTY:1	
	Long slender artery forceps straight, curved, Negus QTY:2each	
	Wilson's artery forceps small & large-QTY:1each	
	<b>Operating Environment</b>	
	The unit shall be capable of operating in ambient temperature of 15°C-35°C and relative humidity of 10-95%	
	The unit shall be capable of being stored continuously in ambient temperature of -5°C -40°C and relative humidity of 10-95%	
	<b>Standards &amp; Safety Requirements</b>	
	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
	<b>Warranty</b>	
	Comprehensive warranty for 2 years.	

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## Tracheostomy Surgical Set

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
	<b>Technical Specifications</b>	
	Doyen molt mouth gag with rubber gum guard for children length 10.5cm - Qty. 2	
	Doyen molt mouth gag with rubber gum guard for adults length 14cm - Qty. 3	
	Hegar needle holder length 18cm - Qty. 4	
	Laborde tracheal dilator with two blades 15 to 18cm - Qty. 2	
	Surgical handle 13.5 cm length (compatible with 21 no. Blade) - Qty. 4	
	Surgical handle 12.5 cm length (compatible with 15 no. Blade) - Qty. 4	
	Mayo scissors straight 15cm - Qty. 3	
	Mayo scissors curved 15cm - Qty. 5	
	Reynolds dissecting scissors 13cm - Qty. 3	
	Metzenbaum scissors curved 5-6", 7", 8" - Qty. 2 each	
	Metzenbaum scissors straight 5-6", 7", 8" - Qty. 2 each	
	Metzenbaum-Lahay scissors curved, extra slender, length 15cm - Qty. 2	
	Metzenbaum with tungsten carbide inserts, curved, robust, length 20cm scissors, curved, extra slender, length 15cm - Qty. 3	
	Adson tissue forceps toothed - Qty. 6	
	Adson tissue forceps non-toothed - Qty. 6	
	Atraumatic non-toothed tissue forceps 8cm - Qty. 4	
	Dressing forceps for ENT length 13 cm(2), standard (3) /medium (3) /narrow (2)	
	Mosquito forceps straight extra fine 10cm length - Qty. 10	
	Mosquito forceps straight 12.5 cm length - Qty. 10	
	Mosquito forceps curved 12.5 cm length - Qty. 10	
	Artery forceps straight length 14cm - Qty. 10	
	Artery forceps straight length 16cm - Qty. 10	
	Artery forceps straight length 18cm - Qty. 10	
	Artery forceps curved length 14cm - Qty. 10	
	Artery forceps curved length 16cm - Qty. 10	
	Artery forceps curved for dissection without ratchet - Qty. 5	
	Difenebach bulldog clamp curved length 4cm - Qty. 4	
	Bulldog clamp straight length 4-5cm - Qty. 2	
	Allis forceps length 15cm - Qty. 10	
	Allis forceps length 20cm - Qty. 2	
	Sponge holding forceps 20cm - Qty. 3	
	Towel forceps 8cm - Qty. 20	
	Towel forceps 13cm - Qty. 5	
	Needle holder of sizes 13cm/18cm (heavy and fine, 5 each)	
	Micro needle holder with Spring handle size 14cm - Qty. 1	
	Microscissors with spring handle 16 cm - Qty. 2	
	Langenbeck retractor length 21cm, size 1, 2, 3, 4 (2 each)	
	Langenbeck retractor length 21cm, size 1, 2, 3, 4 (2 each)	
	Langenbeck retractor length 14-15cm, 24X 6mm - Qty. 2	
	Langenbeck retractor length 14-15cm, 16X 6mm - Qty. 4	
	Cup medicine 200 cc, height 50mm - Qty. 4	
	Cup medicine 400 cc, height 50mm - Qty. 2	
	Liga clip applicator for open head and neck surgery - Qty. 2	
	SS Instrument case with silicon racks for storage and sterilization of delicate instruments - Qty. 2	
	<b>Accessories, Spare Parts and Consumables</b>	
	All standard accessories/consumables/parts required for the proper operation of the above item shall be included in the offer.	
	1 x newborn reusable breathing circuit (tubes/balloon/valves/mask).	
	1 x paediatric reusable breathing circuit (tubes/balloon/valves/mask).	
	1 x adult reusable breathing circuit (tubes/balloon/valves/mask).	
	Connecting hose with regulator/ flow meter or probe for connection to PIN index oxygen cylinder and BOC type oxygen wall outlet, at least 5 meter length, 1 set	
	Connecting hose with regulator/ flow meter or probe for connection to N2O cylinder or N2O wall outlet, at least 5 meter length, 1 set	
	Connecting hose with regulator/ flow meter or probe for connection to air cylinder or wall outlet, at least 5 meter length, 1 set	
	Silicone test lung adult and child size, 1 set each	
	1 x spare parts/maintenance kit (air filters, tubing, O-rings).	
	O2 sensor, 1 set	
	<b>Operating Environment</b>	
	The unit shall be capable of operating in ambient temperature of 15°C-35°C and relative humidity of 10-95%	
	The unit shall be capable of being stored continuously in ambient temperature of -5°C-40°C and relative humidity of 10-95%	
	<b>Standards &amp; Safety Requirements</b>	
	Must submit ISO13485:2003(AC:2007 for Medical Devices AND	
	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
	<b>Warranty</b>	
	Comprehensive warranty for 2 years.	

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## Trans nasal Surgical Set

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
	<b>Technical Specifications</b>	
	1. Crile wood needle holder 15 cm - Qty. 2	
	2. Babcock tissue grasping forceps 15.5 cm - Qty. 2	
	3. scalpel no 3 - Qty. 2	
	4. scalpel no 4 - Qty. 2	
	5. scalpel no 3 and 4 - Qty. 2	
	6. scalpel no 7 - Qty. 2	
	7. Metzenbaum dissecting scissor curved 11.5 cm - Qty. 2	
	8. Metzenbaum dissecting scissor curved 15.5 cm - Qty. 2	
	9. Metzenbaum -Nelson dissecting scissor 20.5 cm - Qty. 2	
	10. Mayo dissecting scissor straight 14.5 cm - Qty. 2	
	11. Dissecting forceps 14.5 cm - Qty. 2	
	12. Dissecting forceps 18 cm - Qty. 2	
	13. Adson dissecting forceps 15 cm - Qty. 2	
	14. Tissue forceps (single toothed) 13cm - Qty. 2	
	15. Tissue forceps (multiple toothed) 14.5 cm - Qty. 2	
	16. Tissue forceps (multiple toothed) 18 cm - Qty. 2	
	17. Joll self-retaining retractor 15.5 cm - Qty. 2	
	18. Dingman's mouth retractor (adult) complete frame including cheek retractor with tongue blades set - Qty. 1	
	19. Dingman's mouth retractor (pediatric) complete frame including cheek retractor with tongue blades set - Qty. 1	
	20. Jennings mouth gag 9 cms - Qty. 2	
	21. Doyen's mouth gag - Qty. 2	
	22. Ferguson's mouth gag - Qty. 2	
	23. Cobbs dissector straight 15cm, 22.5cm - Qty. 2	
	24. Mixer Dissecting Forceps 29 cms - Qty. 2	
	25. Mixer Dissecting Forceps 25 cms - Qty. 2	
	26. Cottle Bone File 21 cm - Qty. 2	
	27. Humby dermatome 32 cm - Qty. 1	
	28. Gigli wire with Saw handle wire length 50 cm hook - Qty. 1	
	29. Santulli Bull Dog clamp straight 7 cm - Qty. 1	
	30. De bakey bull dog clamp straight 7.5 cm - Qty. 1	
	31. De bakey bull dog clamp straight 9.5 cm - Qty. 1	
	32. De bakey bull dog clamp curved 11 cm - Qty. 1	
	33. Debakey angled scissor TC Gold 19 cm 45 degree - Qty. 2	
	34. Cushing nerve hook 19 cm, 6mm tip - Qty. 2	
	35. Goldmann - Fox iris scissor TC Gold 13.5 cm - Qty. 2	
	36. Iris needle holder - Qty. 2	
	37. Mayo Hegar needle holder TC GOLD 20 cm - Qty. 2	
	38. Bozemann/Wertheim needle holder Tc Tipped 20.5 cms - Qty. 2	
	39. Bozemann/Wertheim needle holder Tc Tipped 24 cms - Qty. 2	
	40. Micro needle holder without catch 15 cm straight - Qty. 2	
	41. Conroviejo needle holder with catch , 14.5 cm - Qty. 2	
	42. Spencer Well's artery forceps, curved, 14-16cm - Qty. 2	
	43. Micro scissor (Ti Tipped) 15 cm, curved - Qty. 2	
	44. Micro scissor (Ti Tipped) 15 cm, straight - Qty. 2	
	45. Mayo -Stille dissecting scissor (Tc Gold) curved, 14.5 cm - Qty. 2	
	46. Mayo -Stille dissecting scissor curved 17cm - Qty. 2	
	47. Adson toothed microforceps 12 cm - Qty. 2	
	48. Jeweller's microforceps straight 11 cm with 0.2mm tip - Qty. 2	
	49. Dissecting forceps 30 cm - Qty. 2	
	50. Dissecting forceps 23 cm - Qty. 2	

51. Metzenbaum-Nelson dissecting scissor curved 20.5 cm - Qty. 2	
52. Metzenbaum-Nelson dissecting scissor curved 28.5 cm - Qty. 2	
53. Reynold's dissecting scissors 18cm - Qty. 2	
54. Mayo Stille scissor curved 19.5 cm - Qty. 1	
55. Mayo Stille scissor straight 19.5 cm - Qty. 1	
56. Mayo stille scissor curved 21.5 cm - Qty. 1	
57. Mayo stille scissor straight 21.5 cm - Qty. 1	
58. Metzenbaum TC gold scissor curved 11.5 cm - Qty. 1	
59. Metzenbaum TC gold scissor curved 18 cm - Qty. 1	
60. Metzenbaum TC gold scissor curved 31 cm - Qty. 1	
61. Mixer baby haemostatic forceps 18.5 cm - Qty. 2	
62. Micro mosquito haemostatic forceps 12 cm - Qty. 2	
63. Adson artery forceps curved 19 cm - Qty. 2	
64. Obwegeser wire catching forceps 19 cm - Qty. 2	
65. Dierl Needle holder 12 cm - Qty. 1	
66. Mayo Hegar needle holder 18.5 cm - Qty. 1	
67. DeBakey needle holder TC GOLD 18 cm - Qty. 1	
68. Mayo Hegar needle holder TC GOLD16 cm - Qty. 1	
69. Masson needle holder TC GOLD 26.5 cm - Qty. 1	
70. Mixer dissecting and ligature forceps 23 cm - Qty. 2	
71. Meeker dissecting forceps angled 28 cm - Qty. 2	
72. Allis-Baby tissue grasping forceps 13 cm - Qty. 2	
73. Allis tissue grasping forceps 15.5 cm - Qty. 2	
74. Thomas Allis tissue grasping forceps 20.5 cm - Qty. 2	
75. Babcock tissue grasping forceps 15.5 cm - Qty. 2	
76. Babcock tissue grasping forceps 17.5 cm - Qty. 2	
77. Babcock tissue grasping forceps 21 cm - Qty. 2	
78. Metzenbaum dissecting scissor curved 11.5 cm - Qty. 2	
79. Metzenbaum dissecting scissor curved 15.5 cm - Qty. 2	
80. Metzenbaum-Nelson dissecting scissor curved 20.5 cm - Qty. 2	
81. Metzenbaum dissecting scissor straight 14.5 cm - Qty. 2	
82. Metzenbaum TC GOLD dissecting scissor curved 14.5 cm - Qty. 2	
83. Metzenbaum TC GOLD dissecting scissor curved 20.5 cm - Qty. 2	
84. Metzenbaum-Fino TC GOLD dissecting scissor curved 14.5 cm - Qty. 2	
85. Mayo dissecting scissor straight 14.5 cm - Qty. 2	
86. Mayo dissecting scissor straight 17 cm - Qty. 2	
87. Mayo -Stille dissecting scissor curved 15cm - Qty. 2	
88. Mayo -Stille dissecting scissor curved 17cm - Qty. 2	
89. Dissecting forceps 12 cm - Qty. 2	
90. Dissecting forceps 14.5 cm - Qty. 2	
91. Dissecting forceps 18 cm - Qty. 2	
92. Adson dissecting forceps 15 cm - Qty. 2	
93. Adson dissecting forceps 12 cm Tc Gold Non tooth - Qty. 2	
94. Adson dissecting forceps TC GOLD 12 cm toothed - Qty. 2	
95. Adson dissecting forceps TC GOLD 15cm Non tooth - Qty. 2	
96. Waugh dissecting forceps 20 cm - Qty. 2	
97. Potts-Smith dissecting forceps TC GOLD 16 cm - Qty. 2	
98. Tissue forceps (single toothed) 113cm - Qty. 2	
99. Tissue forceps (single toothed) 116 cm - Qty. 2	
<b>Operating Environment</b>	
The unit shall be capable of operating in ambient temperature of 15°C-35°C and relative humidity of 10-95%	
The unit shall be capable of being stored continuously in ambient temperature of -5°C -40°C and relative humidity of 10-95%	
<b>Standards &amp; Safety Requirements</b>	
Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
<b>Warranty</b>	
Comprehensive warranty for 2 years.	

**192** **Ultrasound Machine with 2 Probes**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Description of Function</b>	
1.1	A general purpose fully digital 8 & W Ultrasound imaging system.	
2	<b>Operational Requirements</b>	
2.1	It shall operate on mains AC supply.	
3	<b>System Configuration</b>	
3.1	System shall come with main unit, 1 probe, 1 unit of black and white video thermal printer and Ultrasound gel warmer 1 unit.	
4	<b>Technical Specifications</b>	
4.1	Latest technology and all digital beam former general purpose standalone ultrasound machine with integrated light weight mobile cart.	
4.2	Main applications: OB/GYN, abdominal, peripheral vessels and small parts.	
4.3	The system shall have at least 12" or higher flat LCD monitor with tilt & swivel facilities.	
4.4	Shall have B-mode, M-mode, B/M mode, 2B mode & 2D mode.	
4.5	The system must have at least Two active probe-ports for easy use and convenient operation.	
4.6	256 Grey shades for sharp contrast resolutions.	
4.7	Controls for depth, gain compensation, body markers with transducer position.	
4.8	Shall have real time continuous dynamic focus.	
4.9	Shall have facility for image zoom, freeze, text annotation.	
4.10	The system shall have extensive calculation software package for Qb/Gyn and general imaging.	
4.11	The system must have provision for measurement and calculation of distance, area, volume, heart rate and circumference on the image.	
4.12	The system shall have Tissue Harmonic Imaging.	
4.13	Near and far gain adjustable.	
4.14	Contrast, adjustable.	
4.15	Focus: auto adjustable.	
4.16	Shall have an alpha-numeric keyboard with easy access scans controls and track ball and status display.	
4.17	Cine memory of 250 frames for cine loop playback.	
4.18	Frame rate: not less than 50fps.	
4.19	Display depth: minimum 38-30cm.	
4.20	Dynamic range: selectable up to approximately 165dB.	
4.21	Image storage: Minimum 200 patient's images on main unit.	
4.22	Shall have facility for inbuilt CD writer.	
4.23	System shall be DICOM ready and capable of being interfaced with HIS/BIS/PACS.	
4.24	Facility for future upgradeability.	
4.25	Probe: 2 to 5 MHz convex probe for Obs /Gyn. and abdominal application is to be supplied.	
5	<b>Accessories, spares and consumables</b>	
5.1	<b>Accessories:</b>	
B	Black and white video thermal printer with 50 rolls of high density recording paper: 01 no.	
B	DVD/CD Recorder with DICOM media transfer.	
B	Ultrasound gel warmer: 01 unit.	
5.2	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer.	
6	<b>Operating Environment</b>	
6.1	The product offered shall be designed to be stored and to operate normally under Power Supply, Climate, Temperature, Humidity, etc. for Sudan.	
6.2	Power supply: 220-240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metre in length.	
6.3	Shall provide UPS of suitable rating with voltage regulation and spike protection for 30 minutes back-up.	
7	<b>Standards and Safety Requirements</b>	
7.1	Must submit ISO 13485:2003/AC: 2007 AND	
7.2	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
7.3	Electrical safety conforms to standards for Electrical Safety IEC 60601-2-37 Medical electrical equipment – Part 2-37: Particular requirements for the basic safety and essential performance of ultrasonic medical diagnostic and monitoring equipment.	
8	<b>User Training</b>	
8.1	Must provide user training (including how to use and maintain the equipment).	
9	<b>Warranty</b>	
9.1	Comprehensive warranty for 2 years after acceptance.	
10	<b>Maintenance Service During Warranty Period</b>	
10.1	During the warranty period supplier must ensure preventive maintenance and corrective/breakdown maintenance whenever required.	
11	<b>Documentation</b>	
11.1	User (Operational) manual in English.	
11.2	Service (Technical / Maintenance) manual in English.	
11.3	List of important spare parts and accessories with their part number and costing.	

**193** **Urethroplasty Set**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
	<b>Technical Specifications</b>	

2. All instruments should be made of corrosion free surgical grade stainless steel [SS alloy grade for surgical instruments as specified in ISO 7153-1: latest ed. or EN 10088 grade or AISI grade 300-450 or equivalent standards].	
4. All the firms are required to submit their catalogue along with tender/ quotation clearly marking the quoted item and no. with a highlighter.	
5. All the components of item under a particular serial no. will be purchased together from a single manufacturer.	
6. L-1 will be decided on total value only.	
7. 10% of tolerance is acceptable in sizes of the instruments mentioned below.	
<b>II. Description of instruments:</b>	
<b>A. Oral Set</b>	
1 Adult Boyle-Davis Mouth gag with different sized (five) Tongue blades - Qty. 1	
2 Adult Doven Mouth Gag with Cushions on blades, 14cm, 5 1/2" - Qty. 1	
3 BP handle No.7 - Qty. 1	
4 Kelly haemostats, curved, 5 1/2" - Qty. 4	
5 Halsted mosquito forceps, curved, 5 1/2" - Qty. 2	
6 Halsted mosquito forceps, curved, 7" - Qty. 2	
7 Allis tissue holding forceps, 7" - Qty. 2	
8 Standard tissue forceps, non-toothed, 6" - Qty. 1	
9 Gerald tissue forceps, straight, toothed, 7" - Qty. 2	
10 Gerald tissue forceps, straight, non-toothed, 7" - Qty. 2	
11 De Bakay forceps, Straight, 1.5 mm tip, 8" - Qty. 1	
12 Surgical scissors, straight, Sharp+Blunt tip, 6" - Qty. 1	
13 Mayo-Stille scissors, straight, 7" - Qty. 1	
14 Fine Metzenbaum scissor, curved, 7" - Qty. 1	
15 Reynolds fine dissecting scissors, curved, 7" - Qty. 1	
16 Kliner scissors, curved, 6" - Qty. 1	
17 Fine Mixer forceps, 7" - Qty. 1	
18 Mayo-Hegar Needle holder, 7" - Qty. 1	
19 Crile-Wood Needle Holder Serrated, 6" - Qty. 1	
20 Frazier suction cannula, 19 cm, 2 mm I.D. tube - Qty. 1	
21 Nelaton director, 5" - Qty. 1	
22 Metal Scale, with mm marking, min upto 15 cm - Qty. 1	
<b>B. Perineal Set</b>	
1 BP handle No.3 - Qty. 1	
2 Halsted mosquito forceps, curved, 5" - Qty. 10	
3 Halsted mosquito forceps, curved, 7" - Qty. 2	
4 Kelly haemostats, curved, 5 1/2" - Qty. 4	
5 Kocher delicate hemostat, straight, 6" - Qty. 2	
6 Fine Mixer forceps, 7" - Qty. 1	
7 Delicate Babcock tissue holding forceps, 6" - Qty. 1	
8 Babcock tissue holding forceps, 6" - Qty. 1	
9 Allis tissue holding forceps, 6" - Qty. 2	
10 Russian tissue forceps, straight, 6" - Qty. 1	
11 Stille serrated tissue forceps, straight, 6" - Qty. 2	
12 Gerald tissue forceps, straight, toothed, 7" - Qty. 2	
13 Gerald tissue forceps, straight, non-toothed, 7" - Qty. 2	
14 De Bakay forceps, Straight, 2.0 mm tip, 8" - Qty. 2	
15 De Bakay forceps, Straight, 2.0 mm tip, 6" - Qty. 2	
16 Surgical scissors, straight, Sharp+Blunt tip, 6" - Qty. 1	
17 Mayo-Stille scissors, straight, 7" - Qty. 1	
18 Mayo-Stille scissors, curved, 6" - Qty. 1	
19 Mayo scissors, straight, 6" - Qty. 1	
20 Mayo scissors, curved, 6" - Qty. 1	
21 Fine Metzenbaum scissor, curved, 6" - Qty. 1	
22 Fine Metzenbaum scissor, curved, 7" - Qty. 1	
23 Mayo-Hegar Needle holder, 7" - Qty. 1	
24 Crile-Wood Needle holder, 6" - Qty. 1	
25 Ryder Needle holder, TC, 6" - Qty. 1	
26 De Bakay Needle holder, TC, 7" - Qty. 1	
27 Andrews suction cannula, 24 cm - Qty. 1	
28 Frazier suction cannula, 19 cm, 2 mm I.D. tube - Qty. 1	
29 Nasal speculum, long thin nosed - Qty. 1	
30 Nelaton director with tip, Groved, 5 1/2" - Qty. 1	
31 Turner-Warwick grooved Gorget, 6" - Qty. 1	
32 Bowman Lacrimal Probe Size: (0.0.7mm) & (0.0.8mm) both end, 5 1/2" - Qty. 1	
33 Bowman Lacrimal Probe Size: (1.5mm) & (1.6mm) both end, 5 1/2" - Qty. 1	
34 Bowman Lacrimal Probe Size: (7.1.8mm) & (8.1.9mm) both end, 5 1/2" - Qty. 1	
35 Gillies Skin retractor, 8" - Qty. 2	
36 Vickers retractor, 2 prongs, 7" - Qty. 2	
37 Desmarres, Lid retractor, children 6" - Qty. 1	
38 Gil-Vernet Vein Retractor, 12", 8mm tip - Qty. 1	
39 Gil-Vernet Vein Retractor, 12", 15mm tip - Qty. 1	
40 Langenbeck retractor 6X25 mm - Qty. 2	
41 Langenbeck retractor 8X35 mm - Qty. 2	
42 Stille gouge, 1/2" tip - Qty. 1	
43 Stille gouge, 1" tip - Qty. 1	
44 Farabeuf periosteal elevator, curved, 5 1/2" - Qty. 1	
45 Stille-Ruskin bone rongeurs, 9" - Qty. 1	
46 Hey Groves retrograde bougies, Tip should have facility to tie Foley catheter, (Sizes: 4/7, 6/9, 8/11 Fr) - Qty. 1	
47 Clutton urethral dilator set, tapered end, (Set of 12) (6/10 Fr to 28/32 Fr), 10 1/2" - Qty. 1	
48 Lister urethral dilator set, Olive tip end, (Set of 12) (1/4 Fr to 12/15 Fr), 11" - Qty. 1	
<b>C. Other accessories</b>	
1 Sterilization box for Oral set, 13"x9"x3.5" - Qty. 1	
2 Sterilization box for Perineal set, 16"x12"x3.5" - Qty. 1	
3 Micro Instrument Box 9"x8"x1" with silicone sheet - Qty. 1	
4 Perforated Instrument Tray, 12"x8" - Qty. 2	
5 Instrument Tray, 12"x8" - Qty. 1	
6 Backhaus Towel Clamps, 5" - Qty. 12	
7 Foerster curved dressing forceps, 10" - Qty. 2	
8 Maier curved dressing forceps, 10 1/2" - Qty. 2	
9 Mayo safety clips, 15 cm - Qty. 2	
10 Mayo safety clips, 20 cm - Qty. 2	
11 Kidney bowl 8" - Qty. 4	
12 Kidney bowl 10" - Qty. 2	
13 Round bowl 10 cm - Qty. 2	
<b>Operating Environment</b>	
The unit shall be capable of operating in ambient temperature of 15°C-35°C and relative humidity of 10-95%	
The unit shall be capable of being stored continuously in ambient temperature of -5°C -40°C and relative humidity of 10-95%	
<b>Standards &amp; Safety Requirements</b>	
Must submit ISO13485:2003(AC:2007 for Medical Devices AND	
CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
<b>Warranty</b>	
Comprehensive warranty for 2 years.	

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**Vein Viewer (Finder)**

No.	Item Specifications	Fill your Specification
I	Manufacturer Name:	
II	Model No.:	
III	Country of Origin:	
1	<b>Technical Specifications</b>	
	Should be Non-laser device based on harmless nearinfraredLights.	
	Should be a portable, hand held model for easy handling.Wrist strap	
	<b>Penetration Depth:</b> The vein imaging device should have the ability to visualize vessels up to 10mm deep or better. The ideal clinical depth range for PIV options, with provided clinical evidence to substantiate.	
	<b>Multiple Imaging Modes:</b> Universal, Inverse mode - for Adult and dark skin patients Fine detail mode, restemmode:NIU/Paediatric patients Max Bright Mode:Special Max Bright mode for using the equipment in non-standard Lighting conditions / under sunlight or without dimming the room light.	
	<b>Image Quality and Focus:</b> vein imaging device should offer an image appropriate across all skin tones and a method of detecting when image is at the proper focal distance, by clearly reading the text in image outline border.	
	Should have minimum brightness of 6 lumens and substantiate with technical specifications evidence.	
	<b>Image Capture options</b> should have a in built camera to capture the real time image of the vasculature under focus area. Captures a time stamped static image of the projected vein image and saves at least 200 images the image as a BMP file.	
	<b>Direct projection on surface of skin:</b> should not require secondary monitor to interfere with technique	
	<b>Utilization of device in any orientation without degradation of performance:</b> Vein-imaging device should offer an image that provides for the same accuracy and reliability of image regardless of the rotation of the device/technique for use on the patient.	
	<b>Real time digital images</b> should provide evidence of real-time imaging and demonstrate ability to visualize blood refill and detect valves. Vein imaging device to provide evidence of real-time imaging and demonstrate ability to visualize fluid flushing process for vessel patency to prevent against infiltration and hematoma.	
	<b>Should be a Non-laser based system and the light should not be harmful to eyes. It should not have any mandated eye safety warnings.</b> Emission: Device should be tested to and complies with IEC 60601-1-2 standard or better for Electromagnetic Compatibility (EMC) and for radiated and conducted emissions.	
	<b>Clinical evidence minimum requirements</b> should provide at least 2-3 peer-reviewed journal in quality.	
	Device should not come in contact with the skin, preventing contamination, heating etc.	
	<b>Device should not need consumables.</b>	

<b>Operations and rechargeable battery:</b> Fast – swap rechargeable Lithium	
<b>Mandatory Accessories to be provided :</b> 2 S mounts.Rechargeable battery, Battery charging station, AC power adapter, USB cable,Training DVD and a storage case.	
<b>Portable and Fast Set Up Time/Direct Projection on Surface of skin/Hands free use:</b> Should provide a hands-free technique with less than 60 seconds setup time from power up to useable image.	
Vein Viewer Flex include a travel case (to hold the device, batteries and battery charger) and a charger.	
To be provided with standard with (2) S- Mounts and (2) clamps so clinicians can mount the device to existing fixtures – allowing for hands free, Eyes on patient technique.	
<b>2 Warranty</b>	
Comprehensive warranty for 2 years.	
<b>3 Maintenance Service During Warranty Period</b>	
Supplier must ensure planned preventive maintenance (PPM) along with corrective/breakdown maintenance whenever required.	
<b>4 Documentation</b>	
User (Operating) manual in English Should provide 2 sets(hardcopy and soft-copy)	
Service (Technical / Maintenance) manual in English Should provide 2 sets(hardcopy and soft-copy)	
List of important spare parts, accessories and consumables with their part numbers and costing.	

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## Videomastography (VNG) Machine

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
	<b>Technical Specifications</b>	
	<b>Component specifications side mount VNG goggles</b>	
	Monocular/ Binocular video eye tracking goggles.	
	Removable eye cover for vision enabled or vision denied recording IEEI1394 FireWire	
	Resolution: 640 x 240 Pixels @ 100 Hz or better Images: 100 Images per second or higher	
	Dispensing box with disposable goggle foam pads.	
	<b>Goggles weight:</b>	
	305 g (non-occluded view) or less	
	385 g (occluded view) or less	
	<b>Test</b>	
	Calibration	
	Spontaneous Nystagmus, Dix Hallpike,	
	Positional,	
	<b>Bithermal Caloric:</b> Software	
	<b>Oculomotor Test:</b>	
	Gaze	
	Smooth Pursuit Random Saccade Optokinetic	
	It should be including Torsional Eye Movement observation.	
	<b>External Stimulus</b>	
	It should be software generated from the system (PC/Laptop) to the projector & LCD Display.	
	<b>for Oculomotor Test</b>	
	<b>Test Mode</b>	
	Both Automatic and Manual Analysis	
	<b>Test Protocol</b>	
	It should have customizable protocols	
	<b>Operating system</b>	
	Windows® 7 32-bit and 64-bit/Windows® 8.1 64-bit/Windows® 10	
	support	
	64-bit	
	<b>Should be supplied with</b>	
	RF hand held Remote Control and/or Foot pedal VNG installation media/software	
	Database media/software	
	Cleaning cloth for lens and goggle mirrors	
	<b>Operating Environment</b>	
	The product offered shall be designed to be stored and to operate normally under Power Supply, Climate, Temperature, Humidity, etc. for Sudan.	
	Power supply: 220 – 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metre in length.	
	Shall provide UPS of suitable rating with voltage regulation and spike protection for 30 minutes back-up.	
	<b>Standards and Safety Requirements</b>	
	Must submit ISO 13485:2003/AC, 2007 AND	
	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
	Electrical safety conforms to standards for Electrical Safety IEC 60601-2-37 Medical electrical equipment – Part 2-37: Particular requirements for the basic safety and essential performance of ultrasonic medical diagnostic and monitoring equipment.	
	<b>User Training</b>	
	Must provide user training (including how to use and maintain the equipment).	
	<b>Warranty</b>	
	Comprehensive warranty for 2 years after acceptance.	
	<b>Maintenance Service During Warranty Period</b>	
	During the warranty period supplier must ensure preventive maintenance and corrective/breakdown maintenance whenever required.	
	<b>Documentation</b>	
	User (Operating) manual in English.	
	Service (Technical / Maintenance) manual in English.	
	List of important spare parts and accessories with their part number and costing.	

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## Digital Sphygmomanometer

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
	<b>Technical specifications</b>	
	<b>Measurement Method</b>	
	Oscillometric	
	<b>Pressurization</b>	
	Internal Micro Pump	
	<b>Display Range</b>	
	0 - 320mmHg	
	<b>Measurement Range</b>	
	Systolic: 60 - 280mmHg (min. division: 1mmHg)	
	Diastolic:40 - 160mmHg (min. division: 1mmHg)	
	Pulse: 30-200bpm (min. division: 1bpm)	
	Pressure: ±3mmHg or +2% measurement.	
	<b>Accuracy</b>	
	Pulse Rate: whichever is greater 45%	
	24 hour (1997-2096 and auto leap year setting)	
	<b>Memory Capacity</b>	
	Power Source	
	Three AA Alkaline or NiCd (Batteries included)	
	<b>Temperature &amp; Humidity Range</b>	
	Operation: 50°F to 104°F (10°C to 40°C), less than 85%RH, -4°F to 131°F (-20°C to 55°C), less than 95%RH	
	<b>Cuff</b>	
	Adult Cuffs, Left Arm (7.9" - 12.2" (20-31cm)) included	
	Large Cuffs, Left Arm (11" - 14.2" (28-36cm)) Optional	
	Small Cuffs, Left Arm (5.9" - 8.7" (15-22cm)) Optional	
	Adult Cuffs, Right Arm (7.9" - 12.2" (20-31cm)) optional	
	Large Cuffs, Right Arm (11" - 14.2" (28-36cm)) Optional	
	<b>CPU</b>	
	Intel 80486DX/Equivalent or higher	
	<b>RAM</b>	
	16MB Min.	
	<b>Operating System</b>	
	Windows® 95, 98, 2000, ME, XP	
	<b>Monitor</b>	
	SVGA (800 x 600 dots), 256 color or more	
	<b>Peripherals</b>	
	3.5"1/2-44MB floppy disk drive	
	<b>Hard Disk</b>	
	1.5MB Min	
	<b>Serial Port</b>	
	Standard RS -232C port	
	<b>Operating Environment</b>	
	The unit shall be capable of operating in ambient temperature of 15°C-35°C and relative humidity of 10-95%	
	The unit shall be capable of being stored continuously in ambient temperature of -5°C -40°C and relative humidity of 10-95%	
	<b>Standards &amp; Safety Requirements</b>	
	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
	<b>Warranty</b>	
	Comprehensive warranty for 2 years.	

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## C-Arm Machine for Urology

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Description of function</b>	
1.1	Used in. video display & monitr during operation.	
2	<b>Technical specifications</b>	
2.1	<b>X-Ray Generator</b>	
	Microprocessor based, high frequency inverter generator, 40 KHz or better	
	Power output : 2 KW or more	
	Fluoroscopic/ Radiographic KV range: 40-110 kv	
	mA in radiography : 20mA or more	
	mA in fluoroscopy : 0.1 to 4 mA or more in normal fluoroscopy and 12 mA or more in High Level Fluro	
	Should have facility for continuous fluoroscopy and Pulse fluoroscopy ( Pulse rate upto 8 pulse per second )	
	Should have Digital Spot for high quality single image, 16 mA or more	
	Housing heat capacity of minimum 700 KHU and cooling rate of more than 12,000 HU/min	
2.2	<b>X-Ray Tube</b>	
	Output should match the output of the generator.	
	Rotating anode type, dual focal spot, shall not be more than 0.6 mm and 1.2 mm	
	Must have anode heat capacity of min 70,000 HU & cooling rate of min 35,000 HU/Min	
	Inherent filtration should be at least 3 mm Al eq	
	Should be operator controlled automatic collimation	
	Collimation : motorized iris and motorized rotating blades	
2.3	<b>C-Arm mechanism:</b>	
	Locks for stabilization at desired position	
	It should have the following range of movements:	
	Source image distance : 950 mm or more	
	Depth of c-arm : 650 mm or more	
	Horizontal travel at least 200mm	
	Vertical travel at least 400 mm	
	Orbital movement: (i) 30°To (+) 90°, (120° Or more)	
	Swing / panning movement : +/- 12° or more	
	Rotation about horizontal axis shall be more than +/-180°	
2.4	<b>Control panel (Digital work station)</b>	
	It should have the following facilities :	
	System should have capability of Pulse Fluoroscopy option to reduce to radiation exposure with 1,2,4,8 pulse per second which should be easily user selectable	
	Fluoroscopy and Radiography exposure on switching	
	Image rotation from control panel	
	Image intensification, mode selection (normal and zoom)	
	Automatic brightness stabilizer	
	Auto dose rate control	
	Collimation for radiography	
2.5	<b>Image Intensifier:</b>	
	Put diameter 9" with Triple field (9/6/4)	
	Minimum central resolution ( at monitor ) : 2.0 lp/mm or better at 9" FOV	
	CCD camera technology with ABC and AGC control	
	CCD camera with 11x11 resolution for high resolution image acquisition	
2.6	<b>TV Monitor:</b>	
	2 LCD monitor medical grade flat screen TFT	
	Shall be at least 43 cm with automatic brightness control	
	Should have image rotation facilities	
	Automatic and manual control of brightness and contrast	
	Mounted on mobile trolley with locking device	
	High resolution (1280x1024 pixels or better)	
2.7	<b>Imaging Modes</b>	
	Fluoroscopy mode shall have the following facilities:	
	Continuous fluoroscopy with last image hold	
	Last image hold with at least two frames image memory	
	Continuous fluoroscopy with image acquisition rate: about 20 frame/second.	
	Hard disk with image storage capacity of at least 25000 images	
	RAM Memory of 256 images	
	Mosaic display of 36 images	
	Zoom (x 2)	
	Measures: at least distances, angles	
3	<b>Accessories, spares and consumables</b>	
3.1	All standard accessories, consumables and parts required to operate the equipment.	
3.2	Sterilizable textile cover and clips, for the X-ray tube and the Cassette holder for 24 x 30 cm	
3.3	Lead apron, light weight with Lead equivalence 2mm- 3 nos.	
4	<b>Environmental factors</b>	
4.1	The unit shall be capable of operating continuously in ambient temperature of 10 -40deg C and relative humidity of 15-90	
4.2	The unit shall be capable of being stored continuously in ambient temperature of 0 -50deg C and relative humidity of 15-90%	
5	<b>Power supply:</b>	
5.1	Input power supply: 220/240 V AC, 50Hz single phase schuko plug	
5.2	Built in UPS to protect & save patient data	
6	<b>Standards and safety requirements</b>	
6.1	Equipment should have AERB Type Approval Certificate for radiation safety	
6.2	Should be FDA or CE approved product certificate.	
7	<b>Warranty</b>	
7.1	Comprehensive warranty for 2 years.	
7.2	Availability of spare parts for minimum 10) years.	
8	<b>User Training:</b>	
8.1	Must provide operating and service trainings local and overseas	
9	<b>Documentation</b>	
9.1	User (Operating) manual in English Should provide 2 sets(hardcopy and soft-copy)	
9.2	Service (Technical / Maintenance) manual in English Should provide 2 sets(hardcopy and soft-copy)	
9.3	List of important spare parts, accessories and consumables with their part numbers and costing.	

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## C-Arm Machine for Neurosurgery

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
	<b>The proposed mobile C-arm system must include:</b>	
	Mobile C-arm with motor driven orbital movement and capability to perform 3D reconstructions	
	High frequency generator	
	Monoblock	
	Digital flat screen image intensifier	
	2 High res flat screen monitors	
	2 operating consoles with touch screen display	
	Digital imaging system	
	DICOM connectivity	
	<b>Clinical Applications:</b>	
	The mobile C-arm system must be able to perform the following investigations:	
	Fluoroscopy, including 3D reconstructions, for specialised spinal surgery and spinal interventional radiology procedures, including	
	Spinal fusion and stabilisation, including minimally invasive surgical procedures	
	Spinal biopsy	
	Injection therapy including	
	Facet joint injections	
	Epidural injections	
	Nerve root blocks	
	Vertebroplasty, kyphoplasty and sacroplasty	
	On table angiography	
	Intra-operative delineation of spinal arteriovenous malformations, vascular tumours etc.	
	<b>Mobile C-arm</b>	
	The mobile C-arm must comply with the following minimum requirements:	
	Motor driven C-arm with isocentric movement	
	Motor driven orbital rotation: minimum 130o	
	Vertical travel: minimum 420mm	
	Horizontal travel: minimum 220mm	
	Swivelling (panning): minimum +/- 10o	
	Angulation: minimum 22o	
	Focus - image receptor distance: minimum 1000mm	
	C-arm vertical free space: minimum 800mm	
	C-arm depth: minimum 750mm	
	Parallel movement of C-arm stand with operating table	
	Wheels steering and braking system	

Cable deflection system on wheels
<b>High Frequency Generator</b>
The high frequency generator must comply with the following minimum requirements:
Microprocessor controlled HF generator
Fluoroscopy kV range: minimum 40-10kV
Fluoroscopy mA range: minimum 1.5-20mA
Fluoroscopy pulse rate: minimum 25 pulses/sec
Digital radiography kV range: minimum: 40-110kV
Digital radiography max mA: minimum 20mA
Minimum working possibilities:
Pulsed fluoroscopy
Digital radiography
Application oriented anatomical programmes in fluoroscopy and digital radiography
Real time detection programme for moving objects in the operating field
<b>Monoblock</b>
The monoblock must comply with the following minimum requirements:
X-ray tube with two focal spots
Focal spot size in fluoroscopy: 0.6mm
Maximum anode heat capacity: minimum 45kJ
Monoblock heat capacity >4000kJ
Maximum anode heat dissipation: minimum 500W
Continuous heat dissipation in clinical performance: <400W
Additional filtration: >0.1mmCu
Total filtration >4mmAl
<b>Collimators</b>
The collimators must comply with the following minimum requirements:
Iris collimator
Slot collimator with rotation of cones
Two independent shutters with minimum of 90o rotation
Collimator rotation +/- 90o
Virtual collimation without radiation
<b>Digital flat panel image intensifier</b>
The digital flat panel image intensifier must comply with the following minimum requirements:
Detected field size: minimum 19x19 cm
Detector matrix: minimum 1024x1024 pixels
Dynamic range: minimum: 72dB
<b>Monitors</b>
Two high resolution flat screen monitors must be supplied, each to the following minimum requirements:
Minimum 18" on a mobile trolley
TFT high res monitors 1280x1024
Brightness: min 600cd/m <sup>2</sup>
Contrast ratio: minimum 600:1
Viewing angle (horizontal and vertical): minimum 170o Adjustable viewing angle
<b>Digital memory</b>
The system must be supplied with digital memory complying to the following minimum requirements:
Fluoroscopic sequential image storage and display: minimum 25 images/sec
Memory storage capacity on HDD: minimum 60,000 images with 1024x1024 matrix
Memory matrix: 1024x1024 pixels
Image matrix: 1024x1024 pixels
Digital image processing: minimum 32bit
<b>User interface consoles</b>
Two user interface consoles are to be supplied, with synchronised displays, one on the monitor trolley and one on the C-arm stand, each with the following minimal requirements:
TFT touch screen displays
Displays with intuitive icons for equipment operation
<b>Hardware</b>
The system must be supplied with appropriate hardware for the clinical applications outlined above including the support of 3D reconstructions. This will be to the following minimum requirements:
Microprocessor: minimum 2 cores
Microprocessor frequency: minimum 2.5 GHz
RAM: minimum 2048RAM
USB port
CD/DVD +/-RW
<b>Software</b>
The system must be supplied with appropriate software for the clinical applications outlined above including the support of 3D reconstructions. This will be to the following minimum requirements:
3D reconstruction and visualisation software
Axial, sagittal and coronal slice planes
3D volume size: minimum 128x128x128mm
3D reconstruction resolution: 512x512x512 voxels
Maximum acquisition images for 3D reconstruction: minimum 100
Minimum memory capacity on HDD: 500 scans at 5123 voxel volume, with image resolution of 1x1x1
Digital measurement function: length and angle
Cine loop
Thick slice filter function
Zoom function
<b>Real time imaging functions</b>
The system must be supplied with the appropriate real time imaging functions for the outlined clinical applications. As a minimum this will include:
Recursive filter for noise filtration
Stack filter for noise filtration
Edge enhancement filter
Grayscale inversion
Digital image rotation and reversal without radiation
Digital shutters
Contrast and brightness
Remasking, landmarking, subtraction/native and pixel shift
<b>Image post processing</b>
The system must be supplied with appropriate post processing functions to support the outlined clinical applications. As a minimum this will include:
Edge enhancement filter
Zoom function
Grayscale inversion
Digital image rotation
Digital measurement function: length and angle
Digital shutters
Annotation
Contrast and brightness
Pixel shift, remasking image, subtraction and native
<b>Patient based data management system</b>
The system supplied must include the capability for pre-registration either manually or via a DICOM worklist.
<b>DICOM connectivity</b>
The bidder's proposal must demonstrate DICOM Connectivity and the system supplied must include the following as a minimum:
DICOM store
DICOM query
DICOM retrieve
DICOM worklist
DICOM media
DICOM print
DICOM viewer for DVD and USB
<b>Other functions</b>
The system supplied must include the following:
Laser positioning device integrated in the generator or digital detector housing
Measured dose are product with digital display
<b>Accessories</b>
The system supplied must include the following:
Two pedals, one for exposure and one for fluoroscopy
Two manual switches, one for exposure and one for fluoroscopy
Video printer for paper and film, 210mm
USB port
DVD-RW for saving images in various formats
X-ray protective materials
Wraparound protective aprons x4
Thyroid protection collars x4
Protective glasses x4
<b>Operating Environment</b>

	The product offered shall be designed to be stored and to operate normally under Power Supply, Climate, Temperature, Humidity, etc. for Sudan.	
	Should work on 220-240V/ 50 Hz AC Single phase fitted with appropriate plugs and sockets.	
	<b>7 Standards and Safety Requirements</b>	
	The unit offered shall be certified to meeting the relevant requirements of TUV, CE mark (MDD), FDA and/ or any equivalent quality and safety standards.	
	Certificates showing the compliance of this unit offered with any relevant quality and safety standards MUST be submitted with this TSF.	
	<b>User Training</b>	
	On site operational training till the familiarity of the system and satisfaction of end user shall be provided.	
	<b>Warranty</b>	
	Comprehensive warranty for 2 years.	
	<b>Maintenance Service During Warranty Period</b>	
	Preventive & Corrective Maintenance:	
	During the warranty period supplier must ensure planned preventive maintenance (PPM) at least 3 nos. in a year along with corrective/breakdown maintenance whenever required.	
	<b>Installation, Inspections and Commissioning</b>	
	Supplier must accomplish proper installation and commissioning of the equipment on site.	
	Inspections to verify the compliance of the offered equipment as per the specifications	
	<b>Documentation</b>	
	User (Operating) manual in English	
	Service (Technical / Maintenance) manual in English	
	List of important spare parts and accessories with their part numbers and costing.	
	Log book with instruction for daily, weekly, monthly and quarterly maintenance checklist.	

**199** **Minor surgical Set**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
	<b>Technical Specifications</b>	
	surgical knife handle - Qty. 1	
	needle holder straight (mayo) 17.5 - Qty. 1	
	straight artery forceps, bean 16 - Qty. 1	
	curved artery forceps, bean 16 - Qty. 1	
	dissecting forceps - Qty. 1	
	Curved Scissors, blunt point ( mayo) 17 cm - Qty. 1	
	surgical scissors, straight, blunt 14.5 cm - Qty. 1	
	sharp uterine curette 26 cm x 9 mm sims - Qty. 1	
	blunt uterine curette 26 cm x 8 mm (sims) - Qty. 1	
	kidney basin 475 ml (16oz) stainless steel 12" x 5 x 2-3/8 - Qty. 1	
	surch power supply 220v, 50Hz - Qty. 1	
	Bowl, solution, stainless steel, 8 liters. - Qty. 1	
	gauze scissors - Qty. 1	
	dressing tray - Qty. 1	
	surgical towels - Qty. 1	
	handing forceps - Qty. 1	
	<b>Operating Environment</b>	
	The unit shall be capable of operating in ambient temperature of 15°C-35°C and relative humidity of 10-95%	
	The unit shall be capable of being stored continuously in ambient temperature of -5°C -40°C and relative humidity of 10-95%	
	<b>Standards &amp; Safety Requirements</b>	
	Must submit ISO13485:2003(AC:2007 for Medical Devices AND	
	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
	<b>Warranty</b>	
	Comprehensive warranty for 2 years.	

**200** **Spectrophotometer**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Description of Function</b>	
1.1	UV/Visual spectroscopy is routinely used in the quantitative determination of solutions of transition metal ions and highly conjugated organic compounds. The instrument used in ultraviolet-visible spectroscopy is called a UV/Vis spectrophotometer. It measures the intensity of light passing through a sample (I), and compares it to the intensity of light before it passes through the sample (Io). In a double-beam instrument, the light is split into two beams before it reaches the sample. One beam is used as the reference; the other beam passes through the sample. Some double-beam instruments have two detectors (photodiodes), and the sample and reference beam are measured at the same time.	
2	<b>Operational Requirements</b>	
2.1	System Must provide for analysis of Protein, DNA / RNA & Enzyme kinetics etc.	
2.2	Microprocessor controlled Double beam spectrophotometer with scanning, kinetic and multi wave length facility, Self-check & self-diagnostic facility and Auto wavelength calibration facility	
3	<b>System Configuration</b>	
3.1	UV-visible Spectrophotometer, Dual Beam with complete accessories.	
4	<b>Technical Specifications</b>	
4.1	Single beam and double beam mode: Allow both modes	
4.2	Wavelength range: 190nm - 1100nm	
4.3	Photometric range: Minimum 2.0 Absorbance (Abs.) units	
4.4	Lamp switching: Allow both modes manual or automatic	
4.5	Band width: 0.2 nm - 4.0 nm or better, with 0.1 nm of increments	
4.6	Must have automatic baseline corrections	
4.7	Wavelength accuracy: Minimum of 0.2 nm	
4.8	Wavelength reproducibility: 0.05 nm or better	
4.9	Wavelength resolution: 0.2 nm or better	
4.10	Photometric accuracy: 0.003 Abs. units or better for 1.0 Abs. units	
4.11	Photometric stability: After 2 hour Must not be more than 0.0005 Abs. units/h	
4.12	Photometric reproducibility: Must not be more than 0.0005 Abs. units at 0.5 Abs. units	
4.13	Photometric noise: Must not be more than 0.0003 Abs. units at 1.0 Abs. units	
4.14	Scan speed: Must be between 0.25 nm/sec. and 8 nm/sec. or better	
4.15	Monochromator slew rate: Must be 1500 nm/min. or better	
4.16	Acquisition at more than one wavelength: Minimum of two	
4.17	Must have Data acquisition and processing system	
4.18	Must be Photometric scaling in Abs. units, %, log Abs. units and concentration	
4.19	Must Absorbance scaling in nm, min., deg. and mm	
4.20	Calibration at one or more levels and one or more wavelengths	
4.21	Must Calculate and give factor for linear regression and other	
4.22	Must Build and memorize in file form: data, method and report	
5	<b>Accessories, spares and consumables</b>	
5.1	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer. Bidders must specify the quantity of every item included in their offer (including items not specified above).	
6	<b>Operating Environment</b>	
6.1	The product offered shall be designed to be stored and to operate normally under Power Supply, Climate, Temperature, Humidity, etc. for Sudan.	
6.2	Power supply: 220 - 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metre in length.	
6.3	Suitable UPS with maintenance free batteries for minimum 30 min. back-up shall be supplied with the system.	
7	<b>Standards and Safety Requirements</b>	
7.1	Must submit ISO13485:2003(AC:2007 for Medical Devices AND	
7.2	CE (93/42 EEC Directives) or USFDA approved product certificate.	
7.3	Must be compliant with IEC 61010-1 (or any international equivalent e.g. EN/UL 61010) covering safety requirements for electrical equipment for measurement control and laboratory use.	
8	<b>User Training</b>	
8.1	Must provide user training (including how to use and maintain the equipment).	
9	<b>Warranty</b>	
9.1	Comprehensive warranty for 2 years from acceptance.	
10	<b>Maintenance Service During Warranty Period</b>	
10.1	During the warranty period supplier must ensure planned preventive maintenance (PPM) and corrective/breakdown maintenance whenever required.	
11	<b>Installation and Commissioning</b>	
11.1	The bidder must arrange for the equipment to be installed and commissioned by certified or qualified personnel; any prerequisites for installation to be communicated to the purchaser in advance, in detail.	
12	<b>Documentation</b>	
12.1	User (Operating) manual in English	
12.2	Service (Technical / Maintenance) manual in English	
12.3	List of important spare parts and accessories with their part number and costing.	

**201** **Electrolyte Analyzer**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
	<b>Technical Specifications</b>	
1	For analysis of electrolytes in laboratories or hospital point of care	
2	Units to measures electrolytes from whole blood, serum, plasma,	
3	Urine dialysate or aqueous standards.	
4	The machine can be configured to measure Na, K, and ionized	
5	Calcium Interchangeable electrodes	
6	Programmable correlation factors	

7	microprocessor controlled.	
8	Electrodes for : Sodium, Potassium, Chloride, Ionized Calcium,	
9	Lithium Reference System.	
10	Sample Size not more than 100 µL	
11	Measurement range for blood approx: Na+: 20 - 200 K+: 0.2 - 40 Cl-: 25 - 200 Li+: 0.2 - 5 Ca++: 0.1 - 6 PH: 6 - 8 units	
12	Measurement range for urine approx: Na+: 25 - 1000 K+: 1 - 500 Cl-: 25 - 500 Sample Application syringe, sample cup, collection tube, capillary Analysis Time (blood) not more than 1 min Analysis Time (urine) not more than 2 min Sample Rate minimum 60 sample/hour Must has Built in printer	
	<b>* Consumables details</b>	
1	Specify all Reagent types and solutions that machine used with their volumes and packing	
2	Specify the Total shelf life for each Reagent, Solution and materials	
3	Specify the No. of tests per each set	
4	Specify the Cost per test	
5	Specify QC materials and intervals	
6	Specify auto calibration frequency and volumes of reagent consumed if applicable	
18	<b>Operating Environment</b> The unit shall be capable of operating continuously in ambient temperature of 10 -40deg C and relative humidity of 15-90% The unit shall be capable of being stored continuously in ambient temperature of 0 -50deg C and relative humidity of 15-90%	
19	<b>Power supply:</b> 220 - 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metre in length. Suitable UPS with maintenance free batteries for minimum 30 min. back-up shall be supplied with the system.	
20	<b>Standards and Safety Requirements:</b> Must submit ISO13485:2003/AC:2007 for Medical Devices AND Should be FDA/CE approved product. shall meet internationally recognised for Electromagnetic Compatibility(EMC) for electromedical equipment: 61326-1. Certified to be compliant with IEC 61010-1, IEC 61010-2-281, 61010-2-101 for safety.	
21	<b>User Training</b> On site operational training till the familiarity of the system and satisfaction of end user shall be provided.	
22	<b>Warranty</b> Comprehensive warranty for 2 years from acceptance.	
23	<b>Maintenance Service During Warranty Period</b> During the warranty period supplier must ensure planned preventive maintenance (PPM) and corrective/breakdown maintenance whenever required.	
24	<b>Installation and Commissioning</b> The bidder must arrange for the equipment to be installed and commissioned by certified or qualified personnel; any prerequisites for installation to be communicated to the user in advance, in detail.	
25	<b>Documentation required</b> User (Operating) manual in English Should provide 2 sets(hardcopy and soft-copy) Service (Technical / Maintenance) manual in English Should provide 2 sets(hardcopy and soft-copy) Must submit the List of all Reagents / Consumables / Controls /Calibrators and spare parts and accessories and with their part number and costing. (In foreign currency)	

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Analytical Balance		
No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Technical Specifications</b>	
	Capacity : Maximum weight : 300 g.	
	Readability : 0.0001 g.	
	Multilingual display.	
	stabilization time : t(3-10) s.	
	Large backlit display with dual text prompts.	
	Large stainless steel pan.	
	Solid metal housing.	
	Non-slip adjustable levelling feet.	
	Lock down mounting slot.	
	Dual tare keys.	
	Splashproof to protect from accidental spills.	
	RS-232 bi-directional interface.	
	Internal calibration.	
	External calibration.	
	AC Adapter.	
2	<b>Operating Environment</b>	
2.1	The product offered shall be designed to be stored and to operate normally under Power Supply, Climate, Temperature, Humidity, etc. for Sudan.	
2.2	Power supply: 220-240V/ 50 Hz AC Single phase with appropriate plug. The power cable must be minimum 3 Meter	
3	<b>Standards and Safety Requirements</b>	
3.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
3.2	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
4	<b>User Training</b>	
4.1	Must provide user training (including how to use and maintain the equipment).	
5	<b>Warranty</b>	
5.1	Comprehensive warranty for 2 years after acceptance.	
6	<b>Maintenance Service During Warranty Period</b>	
6.1	During the warranty period supplier must ensure corrective/breakdown maintenance whenever required.	
7	<b>Installation and Commissioning</b>	
7.1	Supplier must accomplish proper installation and commissioning of the equipment on site.	
8	<b>Documentation</b>	
8.1	User (Operating) manual in English	
8.2	Service (Technical / Maintenance) manual in English	
8.3	List of important spare parts and accessories with their part numbers and costing.	

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Binocular Microscope (Electric)		
No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Description of Function</b>	
1.1	Compound microscope consists of two or more than two magnifying lenses. One can view individual cells, even living ones. It has high magnification	
2	<b>Operational Requirements</b>	
2.1	System complete with illumination system is required.	
3	<b>System Configuration</b>	
3.1	Binocular Microscope Compound with complete accessories	
4	<b>Technical Specifications</b>	
4.1	Body: Binocular, sturdy, stable base body with focus adjustment controls	
4.2	Eye piece : Paired, high quality, (the image of the object as seen through the binocular eyepiece must be well defined centrally in at least 2/3 field of view), achromatic, wide field, 10x and 15x without inbuilt pointer. The eyepiece must be aplanatic and have a minimum field number of 18. Dioptre adjustment must be present on one/ both eye pieces or on the eye piece tube	
4.3	Objective : Four 4x, 10x, 40x, 100x.	
4.4	10x and 40x objectives must have numerical apertures of 0.25 and 0.65 respectively and must be of spring loaded type or otherwise.	
4.5	100 x mu st have numerical aperture of 1.25 and must be of oil immersion spring loaded type. Suitable prominent marking must be provided on 100x for easy identification.	
4.6	Unbreakable containers to be provided for storing the objectives. All objectives must be wide field, achromatic and par focal.	
4.7	Making For the Objectives : Each objective must be engraved with the following information: B Name of the manufacturer B Magnification and numerical aperture, for example, 10x/0.25 B 100x objective must be engraved with the word 'Oil'	
4.8	Nose piece: Revolving nose piece to accommodate four objectives with click stops. It must be provided with ribbed grip for easy rotation mounted on a precision ball bearing mechanism for smooth and accurate alignment. Extra ports if any must be fitted with dust proof metallic/ebonite caps.	
4.9	Stage Un iformly horizontal, mechanical stage having dimensions of length 140 mm (+/- 20mm) with fine vernier graduations (minimum reading accuracy of 0.1 mm), the stage must be provided with spring loaded slide holder for exact positioning of specimen/ slide. It must be designed with convenient sub-stage vertical coaxial adjustment for slide manipulation. The stage must have ball-bearing arrangement to allow smooth travel in transverse directions i.e. 80 mm (+/-5mm) and front to back direction, 50mm (+/-5mm)	
4.10	Sub-stage condenser: Abbe-type condenser, numerical aperture (N.A.) 1.25 focusable with rack and pinion arrangement incorporating a spherical lens and an iris-diaphragm. The condenser must have a filter holder and removable/ swing in/ out blue filter (suitable for bright field microscopy).	
4.11	Sub-stage illuminator: 1.The system must have a built-in variable light source (Illuminator). This source must have a 20 W, 6/12 V Halogen lamp. The circuitry for the light source must include a constant voltage supply. The system must be provided with a step down transformer and an on-off switch and intensity control. The lamp must be provided with a lamp socket which has the facility for easy replacement of the bulb. light	
4.12	The illuminator must have a built-in field diaphragm for Kohler illumination.	
4.13	Eye piece tubes: Binocular eye piece tubes, inclined at 30 and 45 degrees, rotatable through an angle of 360 degrees, having inter-pupillary distance range of 54-74 mm or wider, covering the above mentioned range	
4.14	Focusing knob: Co-axial coarse and fine focusing knobs capable of smooth fine focusing movement over the full range of coarse travel. The fine focusing movement must have sensitivity of two microns or less (finer) over the entire coarse focusing stop safety arrangement must be provided.	

4.15	General 1 All optical parts including objectives, eye pieces and prisms must have anti-reflective coating which also gives anti-fungal property.	
	B All metallic parts must be corrosion-proof, acid-proof and stain-proof	
	B A bottle of at least 25 ml Immersion oil, a roll of lens tissue paper and lens cleaning solution (100 ml) must be provided with each microscope.	
	B One no. of anti-static cleaning brush must be provided with each Microscope for cleaning purpose.	
	B Each Microscope must be supplied with Blue filters. The Blue filter must be packed in the box and not fixed on the Microscopes.	
5	<b>Accessories, spares and consumables</b>	
5.1	<b>Accessories:</b>	
	B 100x oil immersion objective – one.	
	B Halogen bulb, (6/12volts, 20w) – 6 Nos.	
	B Fuses – 6 Nos.	
5.2	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer. Bidders must specify the quantity of every item included in their offer (including items not specified above).	
6	<b>Operating Environment</b>	
6.1	The product offered shall be designed to be stored and to operate normally under Power Supply, Climate, Temperature, Humidity, etc. for Sudan.	
6.2	Power supply: 220-240V/ 50 Hz AC Single phase fitted with appropriate plug to meet purchaser's country requirements. The power cable must be minimum 3 metres long.	
6.3	Voltage corrector/stabilizer of appropriate ratings meeting international standards (Input 160-260 V and output 220-240 V and 50 Hz)	
7	<b>Standards and Safety Requirements</b>	
7.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
7.2	CE or US FDA approved product certificate.	
8	<b>User Training</b>	
8.1	Must provide user training (including how to use and maintain the equipment).	
9	<b>Warranty</b>	
9.1	Comprehensive warranty for 2 years after acceptance.	
10	<b>Maintenance Service during Warranty Period</b>	
10.1	During warranty period supplier must ensure corrective/breakdown maintenance whenever required.	
11	<b>Installation and Commissioning</b>	
11.1	The bidder must arrange for the equipment to be installed and commissioned by certified or qualified personnel; any prerequisites for installation to be communicated to the purchaser in advance, in detail.	
12	<b>Documentation</b>	
12.1	User (Operating) manual in English	
12.2	Service (Technical / Maintenance) manual in English	
12.3	List of important spare parts and accessories with their part numbers and costing.	

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## Water Bath

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Technical Specifications</b>	
	Digital Temperature Control	
	Capacity approx: 10 liter	
	Temp 30-100c	
	Temperature Sensitivity: +/- 0.5°C	
	Temperature sensor: PID	
2	<b>Body:</b> Inner body SS and outer body MS with powder Coated.	
	With Mixing Unit	
	Stainless Steel	
	Safety Thermostat	
3	<b>Accessories</b>	
	Stainless Steel Racks	
	Flat lids With Rings Cover	
5	<b>Operating Environment</b>	
5.1	The product offered shall be designed to be stored and to operate normally under the conditions of the purchaser's country. The conditions include Power Supply, Climate, Temperature, Humidity, etc.	
5.2	Power supply: 220 – 240 VAC, 50Hz Fitted with appropriate plug. The power cable must be at least 3 meter in length.	
6	<b>Standards and Safety Requirements</b>	
	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
	CE (93/42 EEC Directives) or USFDA approved product certificate.	
7	<b>User Training</b>	
	Must provide user training (including how to use and maintain the equipment).	
8	<b>Warranty</b>	
	Comprehensive warranty for 2 years after acceptance.	
9	<b>Maintenance Service During Warranty Period</b>	
	During the warranty period supplier must ensure preventive maintenance and corrective/breakdown maintenance whenever required.	
10	<b>Installation and Commissioning</b>	
	The bidder must arrange for the equipment to be installed and commissioned by certified or qualified personnel; any prerequisites for installation to be communicated to the purchaser in advance, in detail.	
11	<b>Documentation</b>	
	User (Operating) manual in English.	
	Service (Technical / Maintenance) manual in English.	
	List of important spare parts and accessories with their part numbers and costing.	

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## Ultra Plasma freezer (-80 °C)

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Description of Function</b>	
	Deep Freezers are required to preserve blood and blood products, vaccinations etc at specified temperature.	
2	<b>Operational Requirements</b>	
2.1	Internal Minimum Capacity 350 to 400 L net at least double door with adjustable At least 6 shelves	
2.2	Range up to -85C to -85C(Adjustable)	
2.3	Vertical Cabinet (upright model)	
3	<b>Technical Specifications</b>	
3.1	<b>Construction:</b>	
	Solid rust free cabinet to prevent corrosion and lockable castor wheels. Inner surface should be stainless steel.	
3.2	<b>CONTROL SYSTEM</b>	
	Micro-processor based temperature controller with digital temperature display LED/LCD with seven days graphic temperature recorder with rechargeable battery back up including charger maintenance free and insensitive to vibration. Details of battery and battery charger shall be indicated.	
3.3	<b>Refrigeration System</b>	
	Heavy duty refrigeration system, maintenance free, below -85C (+ 10 C) with hermetically sealed dual compressors, noise free and vibration free, air cooled with security lock to prevent unintentional switch off shall be supplied. It should have maximum cooling time of 5 hours at maximum ambient temperature of 33C. The equipment should be of continuous duty.	
3.4	<b>Alarm</b>	
	It should also have audio visual Electronic Alarm System independent of power supply.	
	<b>Insulation</b>	
	High density polyurethane or equivalent Gaskets - Double seal silicon.	
	Door heating system for easy opening of door	
4	<b>System Configuration Accessories, spares and consumables</b>	
	Refrigerator - 01	
5	<b>Operating Environment</b>	
	The product offered shall be designed to be stored and to operate normally under Power Supply, Climate, Temperature, Humidity, etc. for Sudan.	
6	<b>Standards, Safety and Training</b>	
	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
	CE (93/42 EEC Directives) or USFDA approved product certificate.	
7	<b>User Training</b>	
	Must provide user training (including how to use and maintain the equipment).	
8	<b>Warranty</b>	
	Comprehensive warranty for 2 years after acceptance.	
	Maintenance Service During Warranty Period During warranty period supplier must ensure corrective/breakdown maintenance whenever required.	
9	<b>Installation and Commissioning</b>	
	Supplier must accomplish proper installation & commissioning of the equipment on site.	
10	<b>Documentation</b>	
	User (Operating) manual in English	
	Service (Technical / Maintenance) manual in English	
	List of important spare parts and accessories with their part numbers and costing.	

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## Benchtop tube sealer

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Description of Function</b>	
	Blood Bag Tube Sealer is a compact equipment to seal the Blood Bag pilot tube by radio frequency sealing system.	
2	<b>Operational Requirements</b>	
	The system should be heavy duty and be able to seal the blood bag etc quickly and effectively.	
	Should be simple to handle	
	System should gently seal the tubing with no hemolysis.	
3	<b>Technical Specifications</b>	
	Should be a heavy duty tube-sealer capable of sealing tubes of various manufacturers of blood bag.	

	Should be for bench-top use.	
	The sealing time should be adjustable between 0.5-5 seconds	
	Sealing triggering should be automatic	
	Should also have extended portable hand unit. Sealing hand should be with coaxial cable of 1.5 - 2.0 meter.	
	Should have indication lamps (LED or any other) for "Sealing Process" on handle as well as main unit.	
	No warm-up time should be required	
	Should ensure easy separation of tube segments after the sealing.	
	System should run on both mains and battery (more than 10 hrs. back up and charger).	
	Should be lightweight not more than 6 Kg.	
	Detection of wet tube, leakage & sealing defect. Alarm in case of seal not complete.	
	<b>4 System Configuration Accessories, spares and consumables</b>	
	Tube Sealer with Accessories - 01	
	<b>5 Operating Environment</b>	
	The product offered shall be designed to be stored and to operate normally under Power Supply, Climate, Temperature, Humidity, etc. for Sudan.	
	<b>6 Standards, Safety and Training</b>	
	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
	CE (93/42 EEC Directives) or USFDA approved product certificate.	
	<b>7 User Training</b>	
	Must provide user training (including how to use and maintain the equipment).	
	<b>8 Warranty</b>	
	Comprehensive warranty for 2 years after acceptance.	
	Maintenance Service During Warranty Period During warranty period supplier must ensure corrective/breakdown maintenance whenever required.	
	<b>9 Installation and Commissioning</b>	
	Supplier must accomplish proper installation & commissioning of the equipment on site.	
	<b>10 Documentation</b>	
	User (Operating) manual in English	
	Service (Technical / Maintenance) manual in English	
	List of important spare parts and accessories with their part numbers and costing.	

**207 Cold Centrifuge**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Technical Specifications</b>	
	Lid locking and holding	
	Emergency lid lock release	
	Motor overheating protection	
	Imbalance switch-off	
	Standstill indication	
	Benchtop centrifuge, refrigerated	
	Capacity 4x250ml, swing-out rotor	
	Speed/ RCF: n=15000min/RCF24400	
	temp. controllable from -20c to +40c	
2	<b>Operating Environment</b>	
2.1	The product offered shall be designed to be stored and to operate normally under Power Supply, Climate, Temperature, Humidity, etc. for Sudan.	
2.2	Power supply: 220-240V/ 50 Hz AC Single phase with appropriate plug. The power cable must be minimum 3 Meter	
3	<b>User Training</b>	
3.1	Must provide user training (including how to use and maintain the equipment).	
4	<b>Warranty</b>	
4.1	Comprehensive warranty for 2 years after acceptance.	
5	<b>Maintenance Service During Warranty Period</b>	
5.1	During the warranty period supplier must ensure corrective/breakdown maintenance whenever required.	
6	<b>Installation and Commissioning</b>	
6.1	Supplier must accomplish proper installation and commissioning of the equipment on site.	
7	<b>Documentation</b>	
7.1	User (Operating) manual in English	
7.2	Service (Technical / Maintenance) manual in English	
7.3	List of important spare parts and accessories with their part numbers and costing.	

**208 Platelet Agitator (shaker & incubator)**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Technical Specifications</b>	
	Stainless steel chamber with adjustable shelves and a tough ended glass inner viewing door.	
	The outer cabinet is to be rust resistant.	
	Temperature Control detail required:-	
	An LED display to show the chamber temperature. Indicator	
	Lamps to show when the heater is active and if an over temperature condition exists.	
	The over temperature safety cut-out to be set by the user.	
	Fitted with circulation fan.	
	Temperature Range : At least 5°C above ambient to +60°C	
	Control (fan) : ±0.1°C at +37°C	
	Variation (fan) : ±0.25°C at +37°C	
	Chamber Capacity: 80 - 100 Litres	
	Shelves: >= 5.	
2	<b>Operating Environment</b>	
2.1	The product offered shall be designed to be stored and to operate normally under Power Supply, Climate, Temperature, Humidity, etc. for Sudan.	
2.2	Power supply: 220-240V/ 50 Hz AC Single phase with appropriate plug. The power cable must be minimum 3 Meter	
2.3	Suitable UPS with maintenance free batteries for minimum one-hour back-up should be supplied with the system.	
3	<b>Standards and Safety Requirements</b>	
3.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
3.2	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
4	<b>User Training</b>	
4.1	Must provide user training (including how to use and maintain the equipment).	
5	<b>Warranty</b>	
5.1	Comprehensive warranty for 2 years after acceptance.	
6	<b>Maintenance Service During Warranty Period</b>	
6.1	During the warranty period supplier must ensure corrective/breakdown maintenance whenever required.	
7	<b>Installation and Commissioning</b>	
7.1	Supplier must accomplish proper installation and commissioning of the equipment on site.	
8	<b>Documentation</b>	
8.1	User (Operating) manual in English	
8.2	Service (Technical / Maintenance) manual in English	
8.3	List of important spare parts and accessories with their part numbers and costing.	

**209 I.V Stand**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Description of Function</b>	
1.1	This IV/saline stand is used for hanging various intravenous items such as blood bag, glucose bottle etc.	
2	<b>Operational Requirements</b>	
2.1	Epoxy powder coated IV/Saline stand with castors.	
3	<b>System Configuration</b>	
3.1	Adjustable IV/saline stand with five legs, with 4 hooks and five swivels castors.	
4	<b>Technical Specifications</b>	
4.1	The IV stand shall be made of tubular anti-corrosive and antirust treated epoxy powder coated mild steel, with a 5 pronged base fitted on mobile on swivelling castors of approx. diameter Ø50mm. The castors must be non-rusting and non-marking.	
4.2	The stand should come with stainless steel double IV hook, height adjustable from approximately 1620mm to 2340mm, with a screw knob for height adjustment.	
5	<b>Operating Environment</b>	
5.1	The product offered shall be designed to be stored and to operate normally under the conditions. The conditions include Climate, Temperature, Humidity, etc.	
6	<b>Warranty</b>	
6.1	Comprehensive warranty for 2 years after acceptance.	

**210 Manual Patient Bed One Movement With Mattress**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Description of Function</b>	
1.1	A hospital bed is a bed specially designed for hospitalized patients in need of patient ease. These beds have special features both for the comfort and well-being of the patient and for the convenience of hospital staff.	

1.2	Mattress is to provide a comfortable platform to rest or sleep upon the bed.	
<b>2</b>	<b>Operational Requirements</b>	
2.1	The patient bed shall be made of solid steel construction with anti-corrosive and antitrust treated baked hard epoxy powder coating	
<b>3</b>	<b>System Configuration</b>	
3.1	Hospital Bed epoxy powder coated	
<b>4</b>	<b>Technical Specifications</b>	
4.1	Bed base shall be anti-corrosive and antitrust treated epoxy powder coated welded steel bar or epoxy powder coated 18G perforated sheet top to improve ventilation.	
4.2	The patient bed shall be fixed height with 2 sections where the backrest section could be elevated by mechanical hand crank located at the foot-end of the bed.	
4.3	It shall have 4 IV rod receptacles and mosquito net pole receptacles at the 4 corners	
4.4	It shall come with one dual hook anti-corrosive and antitrust treated epoxy powder coated or 304 grade stainless steel IV rod.	
4.5	It shall have provisions to fix urinary bag on both sides.	
4.6	It shall be mobile on 4 x 200mm robust swivelling castors with non-marking grey tyres and with at least 2 diagonal castors shall have locking/brake mechanism.	
4.7	Bedhead and foot-end panel (head and foot bows) shall be made of either between 4-6 anti-corrosive and antitrust treated epoxy powder coated vertical tubular tube of not less than 30mm in diameter or epoxy powder coated steel panel	
4.8	Both bedhead and foot-end panel shall be detachable.	
4.9	The height of the bedhead panel: not less than 1060mm from floor.	
4.10	The height of the foot-end panel: not less than 820mm from floor.	
4.11	Overall approximate dimension: not less than 1980mm length, 910mm width, 600mm height	
4.12	The mattress negotiable with hospital beds having an overall approximate dimension of not less than 1980mm length, 910mm width.	
4.13	It shall be fire retardant antibacterial treated high density approx. 40kg/m <sup>3</sup> PU foam mattress.	
4.14	The mattress shall have thickness of at least 100mm.	
4.15	Mattress with two sections shall be designed to bend with the positioning of the bed when the backrest and foot section of the bed are adjusted.	
4.16	The weight capacity of the mattress shall be more than 100kg.	
4.17	<b>Mattress Cover:</b>	
	The mattress shall come with a zipped fire retardant antibacterial, antistatic, acid resistance, waterproof and washable vinyl or vinylized nylon cover. It shall be designed to provide ventilating airflow over the patient's skin. The zip shall be a heavy-duty/large toothed synthetic zipper to enable inspection of the inner foam and totally covered by a flap extending over the zip to prevent ingress of fluids into the actual mattress and allow for replacement.	
<b>5</b>	<b>System Configuration Accessories, spares and consumables</b>	
5.1	All standard accessories/consumables/parts required for the proper operation of the above item shall be included in the offer. Bidders shall specify, in a separate Excel worksheet, the quantity and details of any items included in this offer which have not been specified in this Technical Specifications Form.	
<b>6</b>	<b>Operating Environment</b>	
6.1	The system offered shall be designed to store and to operate normally under the conditions. The conditions include Climate, Temperature, Humidity, etc.	
<b>7</b>	<b>Warranty</b>	
7.1	Warranty for 2 years.	

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## Manual Patient Bed Two Movements With Mattress

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
<b>1</b>	<b>Description of Function</b>	
1.1	A hospital bed is a bed specially designed for hospitalized patients in need of patient ease. These beds have special features both for the comfort and well-being of the patient and for the convenience of hospital staff.	
1.2	Mattress is to provide a comfortable platform to rest or sleep upon the bed.	
<b>2</b>	<b>Operational Requirements</b>	
2.1	The patient bed shall be made of solid steel construction with anti-corrosive and antitrust treated baked hard epoxy powder coating	
<b>3</b>	<b>System Configuration</b>	
3.1	Hospital Bed epoxy powder coated	
<b>4</b>	<b>Technical Specifications</b>	
4.1	Bed base shall be anti-corrosive and antitrust treated epoxy powder coated welded steel bar or epoxy powder coated 18G perforated sheet top to improve ventilation.	
4.2	The patient bed shall be fixed height with 3 sections where the backrest section could be elevated by mechanical hand crank located at the foot-end of the bed.	
4.3	It shall have 4 IV rod receptacles and mosquito net pole receptacles at the 4 corners	
4.4	It shall come with one dual hook anti-corrosive and antitrust treated epoxy powder coated or 304 grade stainless steel IV rod.	
4.5	It shall have provisions to fix urinary bag on both sides.	
4.6	It shall be mobile on 4 x 200mm robust swivelling castors with non-marking grey tyres and with at least 2 diagonal castors shall have locking/brake mechanism.	
4.7	Bedhead and foot-end panel (head and foot bows) shall be made of either between 4-6 anti-corrosive and antitrust treated epoxy powder coated vertical tubular tube of not less than 30mm in diameter or epoxy powder coated steel panel	
4.8	Both bedhead and foot-end panel shall be detachable.	
4.9	The height of the bedhead panel: not less than 1060mm from floor.	
4.10	The height of the foot-end panel: not less than 820mm from floor.	
4.11	Overall approximate dimension: not less than 1980mm length, 910mm width, 600mm height	
4.12	The mattress negotiable with hospital beds having an overall approximate dimension of not less than 1980mm length, 910mm width.	
4.13	It shall be fire retardant antibacterial treated high density approx. 40kg/m <sup>3</sup> PU foam mattress.	
4.14	The mattress shall have thickness of at least 100mm.	
4.15	Mattress with two sections shall be designed to bend with the positioning of the bed when the backrest and foot section of the bed are adjusted.	
4.16	The weight capacity of the mattress shall be more than 100kg.	
4.17	<b>Mattress Cover:</b>	
	The mattress shall come with a zipped fire retardant antibacterial, antistatic, acid resistance, waterproof and washable vinyl or vinylized nylon cover. It shall be designed to provide ventilating airflow over the patient's skin. The zip shall be a heavy-duty/large toothed synthetic zipper to enable inspection of the inner foam and totally covered by a flap extending over the zip to prevent ingress of fluids into the actual mattress and allow for replacement.	
<b>5</b>	<b>System Configuration Accessories, spares and consumables</b>	
5.1	All standard accessories/consumables/parts required for the proper operation of the above item shall be included in the offer. Bidders shall specify, in a separate Excel worksheet, the quantity and details of any items included in this offer which have not been specified in this Technical Specifications Form.	
<b>6</b>	<b>Operating Environment</b>	
6.1	The system offered shall be designed to store and to operate normally under the conditions. The conditions include Climate, Temperature, Humidity, etc.	
<b>7</b>	<b>Warranty</b>	
7.1	Warranty for 2 years.	

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## Electric Suction Two Bottles

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
<b>1</b>	<b>Description of Function</b>	
1.1	To extract fluid from the body during surgery or emergency treatment.	
<b>2</b>	<b>Operational Requirements</b>	
2.1	Shall operate on mains AC supply.	
<b>3</b>	<b>System Configuration</b>	
3.1	The system consists of:	
	B Suction machine with 2 Jar	
	B Suction tubing.	
	B Two bottles.	
<b>4</b>	<b>Technical Specifications</b>	
4.1	The machine shall be portable on four wheels and with a handle for transportation.	
4.2	The vacuum pump must be totally oil-free diaphragm type. Must have maintenance free pumps of international design for continuous use.	
4.3	Motor shall be of Class "F" insulation to operate in ambient temperature to withstand up to 50 °C, with thermal cut-outs.	
4.4	To facilitate maintenance, the cover of the machine must be easy to open from the top & sides.	
4.5	The suction machine must be capable of producing minimum vacuum of approx. 700 mm Hg and which must be adjustable and monitored by vacuum gauge of suitable range. The suction capacity must be 25 litres per minute and can be regulated.	
4.6	It must have two bottles of 2L each. Each made of unbreakable polycarbonate with ABS Lid with float (over flow control device). The jars must be graduated (in cc levels). The suction bottles shall be autoclavable.	
4.7	On/Off Switch and power indicator must be available.	
4.8	Shall provide foot switch.	
4.9	<b>Body material:</b>	
	Base, top & panel made of rust proof and corrosion resistant moulded ABS.	
<b>5</b>	<b>Accessories, spares and consumables</b>	
5.1	<b>Accessories:</b>	
	B Spare bottle: 02 nos.	
	B Lids: 02 nos.	
	B Rubber Seals: 02 nos.	
	B Blades: 02 nos.	
	B Suction tubing set at least 5 metres: 02 nos.	
	B Spare fuse: 01 set.	
	B Bacterial filter: 05 nos.	
5.2	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer.	
<b>6</b>	<b>Operating Environment</b>	
6.1	The product offered shall be designed to be stored and to operate normally under Power Supply, Climate, Temperature, Humidity, etc. for Sudan.	
6.2	Power supply: 220 – 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metre in length.	
<b>7</b>	<b>Standards and Safety Requirements</b>	
7.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
7.2	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
7.3	Electrical safety conforms to standards for electrical safety IEC 60601-1 General requirement for Electrical safety of Medical Equipment.	
<b>8</b>	<b>User Training</b>	
8.1	Must provide user training (including how to use and maintain the equipment).	
<b>9</b>	<b>Warranty</b>	
9.1	Comprehensive warranty for 2 years after acceptance.	
<b>10</b>	<b>Maintenance Service During Warranty Period</b>	
10.1	During warranty period supplier must ensure corrective/breakdown maintenance whenever required.	
<b>11</b>	<b>Documentation</b>	

11.1	User (Operating) manual in English.	
11.2	Service (Technical / Maintenance) manual in English.	
11.3	List of important spare parts and accessories with their part numbers and costing.	

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**LED Double Head Ceiling Lamp**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Description of Function</b>	
1.1	These lights provide cool, shadow free light and have special technology and filters to provide the same.	
2	<b>Operational Requirements</b>	
2.1	A major operating light, ceiling type with one main & one satellite light units.	
3	<b>System Configuration:</b>	
3.1	Operating light ceiling type having dual dome with all standard accessories.	
4	<b>Technical Specifications</b>	
I	<b>Main Light, 1 unit.</b>	
4.1	Shall be a ceiling mounted light with flexible arm.	
4.2	Number of light head: min. 1 no.	
4.3	Light head shall not be greater than 760mm diameter.	
4.4	Number of bulb: 1 main bulb, LED with 1 backup bulb with auto-switching or multi-bulbs light head.	
4.5	Light intensity range, shall not be less than 100,000 lux at 1 meter distance from light source	
4.6	Light temperature between 4000 - 4500K.	
4.7	Colour rendering index in between 92 - 94.	
4.8	Shall have 99% heat filtering.	
4.9	Temperature increase at head shall not be more than 2oC.	
4.10	Temperature increase on operating field shall not be more than 15oC.	
4.11	Radiant heat energy (beam temperature) shall not exceed 25,000microwatts per square centimetre measured 1m from the light source.	
4.12	The light offered shall have safety designed to prevent patient from burns, especially during the ophthalmic procedures. The light offered shall be certified safe to be used under ophthalmic procedures.	
4.13	Working distance range (focal length): 70 - 180cm.	
4.14	Depth of field with focused light: > 70cm.	
4.15	Luminance field size: 15-25cm diameter, adjustable.	
4.16	Shall have a control to regulate light intensity and to switch on the unit.	
4.17	Shall have an On/Off switch at lamp head.	
4.18	Shall come with continuous dimmer, continuous focus adjustment, continuous field adjustment.	
4.19	Sterilizable handle to regulate light field size, 3 pcs.	
4.20	Vertical adjustment shall not be less than 115cm.	
4.21	Rotation: 360°	
4.22	Shall come with Ophthalmic procedures safe light bulbs with a minimum of 1000 hours lifespan.	
II	<b>Satellite Light, 1 unit.</b>	
4.23	Shall be ceiling mounted together with the main light with flexible arm.	
4.24	Number of light head: 1 no.	
4.25	Light head shall not be greater than 500mm diameter.	
4.26	Number of bulb: min. 1 main bulb, LED with 1 backup bulb with auto-switching or multi-bulbs light head.	
4.27	Light intensity range, shall not be less than 80,000 lux at 1 meter distance from light source.	
4.28	Light temperature between 4000 - 4500K.	
4.29	Colour rendering index in between 92 - 94. Bidder shall attached certified test certificate showing the compliance of this requirement with TSF.	
4.30	Shall have 99% heat filtering.	
4.31	Temperature increase at head shall not be more than 2o C.	
4.32	Temperature increase on operating field shall not be more than 15oC.	
4.33	Radiant heat energy (beam temperature) shall not exceed 25,000microwatts per square centimetre measured 1m from the light source.	
4.34	The light offered shall have safety designed to prevent patient from burns, especially during the ophthalmic procedures. The light offered shall be certified safe to be used under ophthalmic procedures.	
4.35	Working distance range (focal length): 70 - 180cm.	
4.36	Depth of field with focused light: > 70cm.	
4.37	Luminance field size: 15-25cm diameter, adjustable.	
4.38	Must have a control to regulate light intensity and to switch on the unit.	
4.39	Shall have an On/Off switch at lamp head.	
4.40	Shall come with continuous dimmer, continuous focus adjustment, continuous field adjustment.	
4.41	Sterilizable handle to regulate light field size, 3 pcs.	
4.42	Vertical adjustment shall not be less than 115cm.	
4.43	Rotation: 360°	
4.44	Shall come with Ophthalmic procedures safe light bulbs with a minimum of 1000 hours	
4.45	The main light and satellite light shall comply with interference suppressed VDE 0875 or equivalent.	
4.46	Transformer and operating elements shall be integrated in housing of main light & satellite light.	
4.47	Installation Kit	
	<b>The followings items shall also be included:</b>	
	B Ceiling mounting plate/ bracket or equivalent and works and materials to make good the ceiling after installation.	
	B Wires, conduits and other accessories for connecting the wall control box, the light and others.	
	B Other materials needed for the installation on the items above.	
5	<b>Accessories, spares and consumables</b>	
5.1	<b>Accessories:</b>	
	B 1 spare set of fuses.	
5.2	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer. Bidders must specify the quantity of every item included in their offer (including items not specified above).	
6	<b>Operating Environment</b>	
6.1	The system offered shall be designed to store and to operate normally under the conditions include Climate, Power supply, Temperature, Humidity, etc. for Sudan	
6.2	Power supply: 220 – 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metre in length.	
7	<b>Standards and Safety Requirements</b>	
7.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
7.2	CE (93/42 EEC Directives) or USFDA approved product certificate.	
7.3	Electrical safety conforms to standards for electrical safety IEC 60601-1 General requirement for Electrical safety of Medical Equipment.	
8	<b>User Training</b>	
8.1	Must provide user training (including how to use and maintain the equipment).	
9	<b>Warranty</b>	
9.1	Comprehensive warranty for 2 years after acceptance.	
10	<b>Maintenance Service During Warranty Period</b>	
10.1	During the warranty period supplier must ensure corrective/breakdown maintenance whenever required.	
11	<b>Installation and Commissioning</b>	
11.1	The bidder must arrange for the equipment to be installed and commissioned by certified or qualified personnel; any prerequisites for installation to be communicated to the purchaser in advance, in detail.	
12	<b>Documentation</b>	
12.1	User (Operating) manual in English.	
12.2	Service (Technical / Maintenance) manual in English.	
12.3	List of important spare parts and accessories with their part numbers and costing.	

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**Syringe Pump**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Description of Function</b>	
1.1	The Syringe Infusion Pump provides uniform flow of fluid by precisely driving the plunger of a syringe down its barrel. It provides accurate and continuous flow rate for precise delivery of I.V. medication in critical medical care.	
2	<b>Operational Requirements</b>	
2.1	The syringe pump must be programmable, user friendly, safe to use and must have battery backup and comprehensive alarm system. This must be able to integrate in the HIS.	
3	<b>System Configuration</b>	
3.1	Syringe infusion pump with battery backup alarm and with complete accessories.	
4	<b>Technical Specifications</b>	
4.1	Flow rate programmable from 0.1 to 200 ml/hr. or more in steps of 0.1 ml/hr. with user selectable flow set rate option. SAVE last infusion rate even when the AC power is switched OFF.	
4.2	Bolus rate must be programmable to 400 – 500 ml/hr. or more with infused volume display. Reminder audio after every 0.5 ml delivered bolus. SAVE last Bolus rate even when the AC power is switched OFF.	
4.3	Display of Drug Name with a provision of memorizing 10-15 names by the operator	
4.4	Keep Vein Open (KVO) must be available 1.0 ml/hr. or set rate if lower than 1.0 ml. User must have choice to disable KVO whenever desired.	
4.5	Selectable Occlusion pressure trigger levels selectable from 300/500/800 mmHg.	
4.6	Must Work on commonly available 20, 50/60 ml Syringes with accuracy of minimum of +/-2% or better.	
4.7	Automatic detection of syringe size & proper fixing. Must provide alarm for wrong loading of syringe such as flanges out of slot; disengaged plunger, unsecured barrel etc.	
4.8	Anti-bolus system to reduce pressure on sudden release of occlusion	
4.9	Must have comprehensive alarm package including: Occlusion limit exceed alarm, Near end of infusion pre-alarm & alarm, Volume limit pre-alarm & alarm, KVO rate flow, Low battery pre-alarm and alarm, AC power failure, Drive disengaged and preventive maintenance.	
4.10	Rechargeable Battery having at least 5-6 hour backup for about 5ml/hr. flow rate with 50ml syringes. Larger battery life and indication of residual life will be preferred.	
5	<b>Accessories, spares and consumables</b>	
5.1	<b>Accessories:</b>	
	B Mounting device/ Docking Station for two or four pumps as per requirement so as to enable to power up to 2-4 pumps with one power cord when mounted on IV pole. -01 pc.	
5.2	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer. Bidders must specify the quantity of every item included in their offer (including items not specified above).	
6	<b>Operating Environment</b>	
6.1	The product offered shall be designed to be stored and to operate normally under Power Supply, Climate, Temperature, Humidity, etc. for Sudan.	
6.2	Power supply: 220 – 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metre in length.	
7	<b>Standards and Safety Requirements</b>	

7.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
7.2	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
7.3	Certified for meeting IEC60601-2-24:Particular requirements for the safety of infusion pumps and controllers	
7.4	Must meet IEC 529 Level 3 (IP3X) (spraying water) for enclosure protection, water ingress.	
8	<b>User Training</b>	
8.1	Must provide user training (including how to use and maintain the equipment).	
9	<b>Warranty</b>	
9.1	Comprehensive warranty for 2 years.	
10	<b>Maintenance Service During Warranty Period</b>	
10.1	During the warranty period supplier must ensure corrective/breakdown maintenance whenever required.	
11	<b>Documentation</b>	
11.1	User (Operating) manual in English.	
11.2	Service (Technical / Maintenance) manual in English	
11.3	List of important spare parts and accessories with their part number and costing.	

**215** **Air Mattress**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
	<b>Technical Specifications</b>	
	Circulation time: 3 - 6 minor or better	
	Material: Polyurethane, PVC, Or Better	
	Air capacity : 3 - 10 L	
	Mattress Dimentions : 200 x 90 cm.	
	Air pump attached.	
	washable and water proof.	
	Patient weight : more than 175 Kg.	
	Power Line : 220 V ±20 % , 50 Hz.	
	Item must have CE or US FDA certificate	
	Comprehensive warranty for 2 years.	
	<b>Operating Environment</b>	
	The product offered shall be designed to be stored and to operate normally under Power Supply, Climate, Temperature, Humidity, etc. for Sudan.	

**216** **Nebulizer - Home Use**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
	<b>1 Description of Function</b>	
1.1	Nebulizer is a device used to administer medication to people in forms of a liquid mist to the airways. It is commonly used in treating cystic fibrosis, asthma, and other respiratory diseases.	
	<b>2 Operational Requirements</b>	
2.1	Home Use compact Nebuliser is required.	
	<b>3 System Configuration</b>	
3.1	Nebuliser, complete unit with all standard accessories.	
	<b>4 Technical Specifications</b>	
4.1	Compact, lightweight, low noise.	
4.2	Durable long life compressor, must be able to run uninterruptedly for one hour.	
4.3	Maximum pressure: 2.0 to 2.5 bars.	
4.4	Must produce particle of size 1-5 micron.	
4.5	Aluminium cabinet painted with epoxy powder.	
4.6	Piston-type electric aspirator that offers high performance and great durability.	
4.7	Protective thermal cut out relay.	
4.8	Air delivery rate approx. 15 L/min	
	<b>5 Accessories, spares and consumables</b>	
5.1	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer.	
	<b>6 Operating Environment</b>	
6.1	The product offered shall be designed to be stored and to operate normally under Power Supply, Climate, Temperature, Humidity, etc. for Sudan.	
6.2	Power supply: 220 – 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metre in length.	
	<b>7 Standards and Safety Requirements</b>	
7.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
7.2	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.	
7.3	Electrical safety conforms to standards for electrical safety IEC 60601-1 General requirement for Electrical safety of Medical Equipment.	
	<b>8 User Training</b>	
8.1	Must provide user training (including how to use and maintain the equipment).	
	<b>9 Warranty</b>	
9.1	Comprehensive warranty for 2 years after acceptance.	
	<b>10 Maintenance Service during Warranty Period</b>	
10.1	During warranty period supplier must ensure corrective/breakdown maintenance whenever required.	
	<b>11 Documentation</b>	
11.1	User (Operating) manual in English.	
11.2	Service (Technical / Maintenance) manual in English.	
11.3	List of important spare parts and accessories with their part number and costing.	

**217** **Examination Lamp**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
	<b>1 Description of Function</b>	
1.1	Examination light/lamp use in hospital for general examination & minor surgical procedure in wards and in treatment rooms etc.	
	<b>2 Operational Requirements</b>	
2.1	Shall operate on mains electric supply.	
	<b>3 System Configuration</b>	
3.1	Examination lamp with all standard accessories.	
3.1	Patient chair, 1 unit.	
	<b>4 Technical Specifications</b>	
4.1	Mobile examination light with sturdy construction and easily moveable.	
4.2	Shall have heavy base with 5 swivel castors, 2 with brakes. Caster must be medical chemical resistant.	
4.3	Low centre of gravity for optimal stability and reach.	
4.4	Shall have single lamp with 7 LED 12V 1W light or Better.	
4.5	LED shall have life time more than 20,000 hours of operation.	
4.6	Field-of-view diameter, approximately, 0.15m.	
4.7	Homogeneous illumination across entire field-of-view, approx. 60,000 lux (at 0.5m).	
4.8	Colour temperature, approximately: 4500K.	
4.9	Light head mounted on spring loaded articulating arm, height approx. 1.60m.	
4.10	On/off switch incorporated in base or spring loaded articulating arm.	
	<b>5 Accessories, spares and consumables</b>	
5.1	Accessories:	
	B 1 x spare set of fuses.	
	B 1 x spare of LED Lamp.	
5.2	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer. Bidders must specify the quantity of every item included in their offer (including items not specified above).	
	<b>6 Operating Environment</b>	
6.1	The product offered shall be designed to be stored and to operate normally under Power Supply, Climate, Temperature, Humidity, etc. for Sudan.	
6.2	Power supply: 220 – 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metre in length. Power consumption, approximately: 10W.	
	<b>7 Standards and Safety Requirements</b>	
7.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
7.2	CE (93/42 EEC Directives) or USFDA approved product certificate.	
7.3	Electrical safety conforms to standards for electrical safety IEC 60601-1 General requirement for Electrical safety of Medical Equipment.	
	<b>8 User Training</b>	
8.1	Must provide user training (including how to use and maintain the equipment).	
	<b>9 Warranty</b>	
9.1	Comprehensive warranty for 2 years after acceptance.	
	<b>10 Maintenance Service During Warranty Period</b>	
10.1	During the warranty period supplier must ensure corrective/breakdown maintenance whenever required.	

**218** **CTG Machine**

No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
	<b>Technical Specifications</b>	

1	Antepartum fetal monitor for Foetal HR and contractions tracking.	
2	Trolley mounted with twin Ultrasound Transducer, Contractions Transducer (TOCO), Patient Event marker and unique clinical event marker with trace annotation, Automatic fetal movement detection	
3	High Resolution thermal printer Alarm facilities	
4	Communication ports (RS232).	
5	Built-in Battery rechargeable	
6	Operating Environment	
6.1	The product offered shall be designed to be stored and to operate normally under Power Supply, Climate, Temperature, Humidity, etc. for Sudan.	
7	Standards and Safety Requirements	
7.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
7.2	CE (93/42 EEC Directives) or USFDA approved product certificate.	
8	User Training	
8.1	Must provide user training (including how to use and maintain the equipment).	
9	Warranty	
9.1	Comprehensive warranty for 2 years after acceptance.	

**219** **Aneroid sphygmomanometer**

No.	Item Specifications	Fill your Specification
I	Manufacturer Name:	
II	Model No.:	
III	Country of Origin:	
1	Description of Function	
1.1	Sphygmomanometer is a device used to measure blood pressure, composed of an inflatable cuff to restrict blood flow, and a mechanical manometer to measure the pressure.	
2	Operational Requirements	
2.1	Aneroid sphygmomanometer having a dial to show clear numbers and pointer / needle for measurement of pressure.	
3	System Configuration	
3.1	Aneroid sphygmomanometer	
	Cuffs for child size and for adult size (regular)	
	Inflation bulb	
	Carrying pouch	
4	Technical Specifications	
4.1	Packed in easy carrying high quality pouch made of waterproof cloth to accommodate cuff, and inflation bulb.	
4.2	Gauge to be calibrated in 2 mm Hg units.	
4.3	Must provide blood pressure cuffs for child size and for adult size (regular).	
5	Accessories, spares and consumables	
5.1	All standard accessories/consumables/parts required for the proper operation of the above item shall be included in the offer. Bidders shall specify, in a separate Excel worksheet, the quantity and details of any items included in this offer which have not been specified in this Technical Specifications Form.	
6	Operating Environment	
6.1	The product offered shall be designed to be stored and to operate normally under the conditions of the purchaser's country. The conditions include Climate, Temperature, Humidity, etc.	
7	Standards and Safety Requirements	
7.1	Must submit ISO 9001 or ISO 13485:2003/AC: 2007.	
8	User Training	
8.1	Not applicable.	
9	Warranty	
9.1	Warranty for 2 years.	
10	Maintenance Service During Warranty Period	
10.1	Standard warranty conditions are applicable.	
11	Installation and Commissioning	
11.1	Must supply preassembled unit, ready to use.	
12	Documentation	
12.1	User's manual in English	

**220** **Adult Scale With Tap**

No.	Item Specifications	Fill your Specification
I	Manufacturer Name:	
II	Model No.:	
III	Country of Origin:	
1	Description of Function	
1.1	Used for routine height and weight measurements of patients, paediatric to adult.	
2	Operational Requirements	
2.1	It must be a platform type of weight and height measuring scale on which the patient can stand for measurement of weight and height.	
3	System Configuration	
3.1	Weighting Machine with Height Measuring Scale, Mechanical, paediatric to adult patients, complete unit.	
4	Technical Specifications	
	It must measure the weight in kilogram.	
	It must measure the height in centimetre.	
	Capacity weight: up to 200 kg.	
	Graduation: ≤ 100 g.	
	Base Measurement (platform): ≥ 330 x 80 x 340 mm.	
	It must be mounted on transport castors with breaks to allow free mobility from one place to other.	
	Required Accessories: Offer must include telescoping measuring rod up to minimum of 200 cm.	
5	Accessories, spares and consumables	
	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer.	
6	Operating Environment	
6.1	The product offered shall be designed to be stored and to operate normally under Climate, Temperature, Humidity, etc. for Sudan.	
7	Standards and Safety Requirements	
7.1	Must submit ISO 9001 or ISO13485:2003/AC:2007 for Medical Devices AND	
7.2	CE or USFDA approved product certificate.	
8	Warranty	
8.1	Comprehensive warranty for 2 years.	
9	Maintenance Service During Warranty Period	
9.1	Standard warranty conditions are applicable.	
10	Installation and Commissioning	
10.1	The supplier must accomplish proper commissioning of the item onsite.	
11	Documentation	
11.1	User and/or service manual shall be supplied in English.	

**221** **Torch ( Diagnostic Penlight)**

No.	Item Specifications	Fill your Specification
I	Manufacturer Name:	
II	Model No.:	
III	Country of Origin:	
1	Technical Specifications	
1.1	LED, Xenon lamp or Better for light.	
1.2	Including 2 batteries type AA.	
1.3	Extremely heavy duty resistant casing.	
1.4	Practical metal clip on handle for attaching the light to the physician's coat.	
2	Accessories, spares and consumables	
2.1	Not applicable.	
3	Operating Environment	
3.1	The product offered shall be designed to be stored and to operate normally under Climate, Temperature, Humidity, etc. for Sudan.	
4	Standards and Safety Requirements	
4.1	Must submit ISO 9001 or ISO13485:2003/AC:2007 for Medical Devices AND	
4.2	CE or USFDA approved product certificate.	
5	Warranty	
5.1	Warranty for 2 years after acceptance.	
6	Maintenance Service during Warranty Period	
6.1	Standard warranty conditions are applicable.	
7	Installation and Commissioning	
7.1	Must supply preassembled unit, ready to use.	

**222** **Mercury Sphygmomanometer**

No.	Item Specifications	Fill your Specification
I	Manufacturer Name:	
II	Model No.:	
III	Country of Origin:	
1	Description of Function	
1.1	Sphygmomanometer is a device used to measure blood pressure, composed of an inflatable cuff to restrict blood flow, and a mechanical manometer to measure the pressure.	
2	Operational Requirements	
2.1	Mercury sphygmomanometer.	
3	System Configuration	
3.1	Sphygmomanometer with adult and paediatric size cuffs.	
4	Technical Specifications	
4.1	300 mm wide tube	
5	Accessories, spares and consumables	

5.1	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer. Bidders must specify the quantity of every item included in their offer (including items not specified above).	
6	<b>Operating Environment</b>	
6.1	The product offered shall be designed to be stored and to operate normally under Climate, Temperature, Humidity, etc. for Sudan.	
7	<b>Standards and Safety Requirements</b>	
7.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
7.2	CE (93/42 EEC Directives) or USFDA approved product certificate.	
8	<b>User Training</b>	
8.1	Not applicable.	
9	<b>Warranty</b>	
9.1	Comprehensive warranty for 2 years from acceptance.	
10	<b>Maintenance Service During Warranty Period</b>	
10.1	Standard warranty conditions are applicable.	
11	<b>Installation and Commissioning</b>	
11.1	Must supply pre-assembled unit, ready to use.	
12	<b>Documentation</b>	
12.1	User's manual in English.	

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No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
1	<b>Description of Function</b>	
	Automated haematology analyser or complete blood cell counter is used to count various types of blood cells in the blood.	
2	<b>Technical Specifications</b>	
	The Principle should be Flow cytometry and multi-angular laser scattering, Electric impedance method and Colorimetry method	
	Should accept two modes of sampling : Whole blood, pre-diluted blood	
	System should be fully Automatic.	
	Should include 19 reportable parameters	
	Body fluid mode	
	Determination of 18 to 19 parameters, with 3-part differential, for routine haematology.	
	Shall have fully automatic, open system.	
	Sample volume: < 30ul.	
	Throughput: approx. 50 samples per hour, 24h power on, with dormancy and wake function.	
	Determination of: Red blood cell (RBC), White blood cell(WBC), Haemoglobin(HGB), Haematocrit(HCT), Mean cell volume(MCV), Mean cell haemoglobin(MCH), Red cell distribution(RDW-SD and RDW-CV), Platelets(PLT), Platelet distribution(PDW-SD and PDW-CV), Mean platelet volume(MPV), differential leucocytes (LYM, LYM%, MID, MID%, GRA, GRA%).	
	Method: Photometry and impedance technology, cyanide-free colorimetry for haemoglobin counting.	
	Calibration: independent automated calibration and manual calibration for minimum two test modes.	
	Typical counting time: approximately 60 seconds for differential.	
	Shall have with self-test capability.	
	Display: LCD screen.	
	Indication of self-test failures and assistance messages, sample ID, date and time are reported with test results.	
	Supplied complete with dedicated data analysis and data management software.	
	Results are reported on external laser printer.	
	Shall have built-in RS232, USB2.0 or equivalent, for allowing data transfer and network capability via LIS.	
	Shall quote rates for reagents & consumables, calibrators & controls, printer paper, separately and it must be valid for at least 3 years.	
	Data storage capacity Up to 200,000 patient results including all numeric and graphical	
3	<b>Accessories, spares and consumables</b>	
	Reagents for 500- 1000 reaction should be provided with the instrument.	
	Laptop and printer.	
	Suitable on - line UPS (about 2 KVA) is required to support the instrument.	
	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer.	
4	<b>Operating Environment</b>	
	The product offered shall be designed to be stored and to operate normally under Power Supply, Climate, Temperature, Humidity, etc. for Sudan.	
	Power supply: 220-240V/ 50 Hz AC Single phase with appropriate plug. The power cable must be minimum 3 Meter.	
5	<b>Standards and Safety Requirements</b>	
	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
	CE (93/42 EEC Directives) or USFDA approved product certificate	
	Must comply with IEC 61010 Safety requirements for electrical equipment for measurement, control, and laboratory use	
6	<b>User Training</b>	
	Must provide user training (including how to use and maintain the equipment).	
7	<b>Warranty</b>	
	Comprehensive warranty for 2 years after acceptance.	
8	<b>Maintenance Service During Warranty Period</b>	
	During the warranty period supplier must ensure corrective/breakdown maintenance whenever required.	
9	<b>Installation and Commissioning</b>	
	Supplier must accomplish proper installation and commissioning of the equipment on site.	
10	<b>Documentation</b>	
	User (Operative) manual in English	
	Service (Technical / Maintenance) manual in English	
	List of important spare parts and accessories with their part numbers and costing.	

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Fully Automated Haematology Analyser (3 Parts Differential)		
No.	Item Specifications	Fill your Specification
I	<b>Manufacturer Name:</b>	
II	<b>Model No.:</b>	
III	<b>Country of Origin:</b>	
	<b>Description of Function</b>	
	Automated haematology analyser or complete blood cell counter is used to count various types of blood cells in the blood.	
	<b>Operational Requirements</b>	
	Fully automated 3 parts differential haematology analyser.	
	<b>System Configuration</b>	
	Fully Automated Haematology Analyser, complete unit with all standard reagents, consumables and accessories.	
	<b>Technical Specifications</b>	
	Determination of 18 to 19 parameters, with 3-part differential, for routine haematology.	
	Shall have fully automatic, open system.	
	Sample volume: < 30ul.	
	Throughput: approx. 50 samples per hour, 24h power on, with dormancy and wake function.	
	Determination of: Red blood cell (RBC), White blood cell(WBC), Haemoglobin(HGB), Haematocrit(HCT), Mean cell volume(MCV), Mean cell haemoglobin(MCH), Red cell distribution(RDW-SD and RDW-CV), Platelets(PLT), Platelet distribution(PDW-SD and PDW-CV), Mean platelet volume(MPV), differential leucocytes (LYM, LYM%, MID, MID%, GRA, GRA%).	
	Method: Photometry and impedance technology, cyanide-free colorimetry for haemoglobin counting.	
	Calibration: independent automated calibration and manual calibration for minimum two test modes.	
	Typical counting time: approximately 60 seconds for differential.	
	Shall have with self-test capability.	
	Display: LCD screen.	
	Indication of self-test failures and assistance messages, sample ID, date and time are reported with test results.	
	Supplied complete with dedicated data analysis and data management software.	
	Results are reported on external laser printer.	
	Shall have built-in RS232, USB2.0 or equivalent, for allowing data transfer and network capability via LIS.	
	On board memory for about 100-150 tests records.	
	Shall quote rates for reagents & consumables, calibrators & controls, printer paper, separately and it must be valid for at least 3 years.	
	<b>Accessories, spares and consumables</b>	
	Reagents & consumables, calibrators & controls, printer paper to be supplied for 1000 samples.	
	Shall provide compatible laser printer, 1 no.	
	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer. Bidders must specify the quantity of every item included in their offer (including items not specified above).	
	<b>Operating Environment</b>	
	The product offered shall be designed to be stored and to operate normally under the conditions of the purchaser's country. The conditions include Power Supply, Climate, Temperature, Humidity, etc.	
	Power supply: 220-240VAC, 50Hz fitted with appropriate plug type D (3 pins). The power cable must be minimum 3 meters long.	
	Suitable UPS with maintenance free batteries, voltage regulation and spike protection for minimum 30 min. back-up for the entire system including computer and printer shall be supplied with the system.	
	<b>Standards and Safety Requirements:</b>	
	Must submit ISO13485:2003/AC:2007 for Medical Devices AND	
	CE (93/42 EEC Directives) or USFDA approved product certificate.	
	Shall meet IEC 61010-2-081 safety requirements for electrical equipment for measurement, control, and laboratory use - Part 2-081: Particular requirements for automatic and semi-automatic laboratory equipment for analysis and other purposes.	
	<b>User Training</b>	
	Must provide user training (including how to use and maintain the equipment).	
	<b>Warranty</b>	
	Comprehensive warranty for 2 years after acceptance.	
	<b>Maintenance Service During Warranty Period</b>	
	During the warranty period supplier must ensure preventive maintenance and corrective/breakdown maintenance whenever required.	
	<b>Installation and Commissioning</b>	
	The bidder must arrange for the equipment to be installed and commissioned by certified or qualified personnel; any prerequisites for installation to be communicated to the purchaser in advance, in detail.	

Documentation	
User (Operating) manual in English.	
Service (Technical / Maintenance) manual in English.	
List of important spare parts and accessories with their part numbers and costing.	