1	**Blood Bank Refrigerator**

	Description of Function	Fill Your Specifications
	Blood Bank Refrigerator is used to store blood bags under controlled temperature.	
	Operational Requirements	
	System required with weekly chart recorder and digital display.	
	System Configuration	
	Blood Bank Refrigerator with weekly chart recorder, digital display and with complete accessories.	
	Technical Specifications	
	Temperature range:	
	Must have adjustable temperature control range from +2 ℃ to +6 ℃. It shall maintain internal temp at 4 oC & the uniformity of this temperature must be maintained throughout the chamber with the maximum average temperature variation of +/- 1 oC between different chambers.	
	Capacity must accommodate 150 blood bags and size will be approximately 250 litres.	
	Blood Bank Refrigerator shall have integrated temperature monitoring system with microprocessor controls.	
	The blood bank refrigerator shall have a large LCD which displays:	
	□ Temperature.	
	□ High & Low alarm points with date & time.	
	□ Previous 24 hour temperature in graphical form.	
	□ Data of power failure/resumption in last 24 hours with date & time.	
	The blood bank refrigerator shall also have an inbuilt circular chart recorder for 7 days recording of temperature on circular chart paper.	
	The internal automatic temperature alarm system shall work if a temperature falls below 2 oC & exceeds beyond 6 oC.	
	The internal temperature alarm system shall also have a battery backup of minimum 3-4 hours.	
	Internal construction must be made up of high grade stainless steel 304 (min 22 G). External construction Corrosion resistant sheet at least 1 mm thickness.	
	It shall have lockable door. Outer door shall be made of glass to see through and inner door shall be made of acrylic sheet to ensure ease of operations, better maintenance of internal temperature.	
	Blood Bank Refrigerator shall confirm to noise level of less than 85 dBA as per IEC 61010.	
	Internal cabinet lighting to be provided with lamp illumination whenever door opens.	
	Shall come with roll out steel trays for proper storage of blood bags.	
	Blood bank refrigerator shall have in built servo controlled voltage stabilizer of suitable rating.	
	Shall have adjustments for uneven bases. The adjustments must be easy to use like rotating a screw at the legs in the base.	
	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.	
	Operating Environment	
	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	
	Suitable Automatic Voltage regulator/stabilizer meeting international standards must be supplied. Broad specifications are: Automatic Type Input 150-280V, Output 220 V +/- 7 %, 50 Hz. Single phase, AC with automatic 2-4 sec Cut Off and 6-9 minutes restart delay. Quick start arrangements for bypassing the start delay. Suitable MCB on input voltmeter and indicators on Front Panel. Input Pore Cable with 15 A Plug and six way output terminal strip for two outlets	
	Standards and Safety Requirements	
	Must submit ISO 9001 or ISO13485:2003/AC:2007 AND	
	Must comply with WHO/UNICEF Specification Reference: BTS/RF.1 and DIN 58371.	
	Test and inspections as per WHO Procedure reference: Laboratory Test Procedure: Standard Test Procedure: BTS/Proc. / 3.	
	Shall meet IEC 60335-1and -2-24 General requirements of electrical safety.	
	User Training	
	Must provide user training (including how to use and maintain the equipment).	
	Warranty	
	Comprehensive warranty for 2 years after acceptance.	
	Maintenance Service During Warranty Period	
	During the warranty period supplier must ensure planned preventive maintenance (PPM) and corrective/breakdown maintenance whenever required.	
	Installation and Commissioning	
	The supplier must accomplish proper commissioning of the item onsite.	
	Documentation	
	User (Operating) manual in English	
	Service (Technical / Maintenance) manual in English	
	List of important spare parts and accessories with their part number and costing.	
	Certificate of calibration and inspection from factory.	

2 ELISA Washer & Reader with External Printer with UPS

ELISA Reader

No.	Item Specifications	Fill Your Specifications
I	**Manufacturer Name:**	
II	**Model No.:**	
III	**Country of Origin:**	
1	**Description of Function**	
1.1	ELISA Reader is required to Read the Color Density known as OD (Optical Density) in ELISA (Enzyme	
2	**Operational Requirements**	
2.1	ELISA Reader complete with Printer is required.	
3	**Technical Specifications**	
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	
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	Shoud come with UPS for the sytem (Washer & Reader) of suitable rating with voltage regulation and spike protection for 30 minutes back-up.	
4	**System Configuration Accessories, spares and consumables**	
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	8 channel variable volume color multi-channel pipettes 5-50 ul and 50-300 ul.	
5	**Operating Environment**	
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	**Standards and Safety Requirements**	
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	**User Training**	
7.1	On site operational training till the familiarity of the system and satisfaction of end user shall be provided.	
8	**Warranty**	
8.1	Comprehensive warranty for 2 years after acceptance.	
9	**Maintenance Service During Warranty Period**	
9.1	During the warranty period supplier must ensure corrective/breakdown maintenance whenever required.	
10	**Installation and Commissioning**	
10.1	Supplier must accomplish proper installation and commissioning of the equipment on site.	
11	**Documentation**	
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.	
11.4	Certificate of calibration and inspection from factory.	

ELISA Washer

No.	Item Specifications	Fill Your Specifications
I	**Manufacturer Name:**	
II	**Model No.:**	
III	**Country of Origin:**	
1	**Description of Function**	
1.1	A washer for microtitre plates designed to ensure thorough washing of reagents between Enzyme-Linked Immunosorbent Assay (ELISA) steps.	
2	**Operational Requirements**	
2.1	8 channel.	
3	**System Configuration**	
3.1	ELISA Washer, automatic, complete unit with complete accessories.	
4	**Technical Specifications**	
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: Between1-10.	
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	**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	**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 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	**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.	
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	**Warranty**	
9.1	Comprehensive warranty for 2 years after acceptance.	
10	**Maintenance Service During Warranty Period**	
10.1	During warranty period supplier must ensure corrective/breakdown maintenance whenever required.	
11	**Installation and Commissioning**	
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	**Documentation**	
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	Certificate of calibration and inspection from factory.	

3 **Cardio Tocograph (CTG)**

No.	Specifications	Fill your Specification
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	Builtin 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.	

4 **Phototherapy device**

	Description of function	Fill Your Specifications
	Used to treat of hyperbilirubinemia in neonates concentrations in the blood.	
	Operational Requirements	

	It must be LED based single surface phototherapy unit used for clinical management of neonatal hyperbilirubinemia.	
	System Configuration	
	Phototherapy Unit (LED type), complete unit with all standard accessories.	
	Technical Specifications	
	Light Source :	
	Blue power LEDs for phototherapy	
	Wavelength: Blue Light: Peak between 450 and 470nm.	
	There shall be no UV and no IR radiation.	
	Phototherapy Intensity Adjustment:	
	Intensity at 30 cm: Low level > 20 µW/cm2/nm. High level > 30 µW/cm2/nm.	
	Effective area: 250mm round (at 30cm).	
	Therapy timer: An accurate LCD timer for recording therapy time with reset facility.	
	Life of LED: Minimum 20,000hours of use.	
	It must have flexible neck for easy use with Radiant Warmer.	
	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: 0º (horizontal) to approx. 40º (both sides).	
	It shall have breakage free Stainless Steel clips and holders for acrylic panels.	
	It shall have facility to provide phototherapy from underneath also.	
	Accessories, spares and consumables	
	Accessories:	
	Phototherapy eye pads for preterm and term babies: 05 each.	
	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).	
	Power Supply	
	Input power supply: 220/240 V AC , 50Hz single phase schuko plug	
	Environmental factors	
	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%	
	Standards and safety	
	Should be FDA or CE approved product certificate.	
	User Training	
	Must provide operating and service trainings	
	Warranty	
	Comprehensive warranty for 2 years.	
	Documentation	
	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.	
	Certificate of calibration and inspection from factory.	

5	**Nitrous Cylinder Regulator**

No.	Item Specifications	**Fill your Specification**
1	**Operational Requirements**	
	Regulator for Nitrous cylinder	
	Fixed Pressure Type.	
	Suitable for Anesthesia machine	
	British Standard	
2	**Operating Environment**	
2.1	The product offered shall be designed to be stored and to operate normally under the conditions of Sudan. The conditions include Climate, Temperature, Humidity, etc.	

3	**Standards and Safety Requirements**	
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	**User Training**	
4.1	Must provide user training (including how to use and maintain the equipment).	
5	**Warranty**	
5.1	Comprehensive warranty for 2 years after acceptance.	
6	**Documentation**	
6.1	User (Operating) manual in English.	
6.2	Service (Technical / Maintenance) manual in English.	
6.3	Certificate of calibration and inspection from factory.	

6 **Ceiling Operating Lamp LED Dual Head**

No.	Item Specifications	**Fill your Specification**
1	**Description of Function**	
1.1	These lights provide cool, shadow free light and have special technology and filters to provide the same.	
2	**Operational Requirements**	
2.1	A major operating light, ceiling type with one main & one satellite light units.	
3	**System Configuration**	
3.1	Operating light ceiling type having dual dome with all standard accessories.	
4	**Technical Specifications**	
I	**Main Light, 1 unit.**	
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 filtrating.	
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.	
4.1	Radiant heat energy (beam temperature) shall not exceed 25,000 microwatts per square centimetre measured 1m from the light source.	
4.1	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.	
4.1	Working distance range (focal length): 70 - 180cm.	
4.1	Depth of field with focused light: > 70cm.	
4.2	Luminance field size: 15-25cm diameter, adjustable.	
4.2	Shall have a control to regulate light intensity and to switch on the unit.	
4.2	Shall have an On/Off switch at lamp head.	
4.2	Shall come with continuous dimmer, continuous focus adjustment, continuous field adjustment.	
4.2	Sterilizeable handle to regulate light field size, 3 pcs.	
4.20	Vertical adjustment shall not be less than 115cm.	
4.2	Rotation: 360°.	
4.2	Shall come with Ophthalmic procedures safe light bulbs with a minimum of 1000 hours lifespan.	

II	**Satellite Light, 1 unit.**	
4.2	Shall be ceiling mounted together with the main light with flexible arm.	
4.2	Number of light head: 1 no.	
4.3	Light head shall not be greater than 500mm diameter.	
4.3	Number of bulb: min. 1 main bulb, LED with 1 backup bulb with auto-switching or multi-bulbs light head.	
4.3	Light intensity range, shall not be less than 80,000 lux at 1 meter distance from light source.	
4.3	Light temperature between 4000 - 4500K.	
4.3	Colour rendering index in between 92 - 94. Bidder shall attached certified test certificated showing the compliance of this requirement with TSF.	
4.30	Shall have 99% heat filtrating.	
4.3	Temperature increase at head shall not be more than 2o C.	
4.3	Temperature increase on operating field shall not be more than 15oC.	
4.3	Radiant heat energy (beam temperature) shall not exceed 25,000microwatts per square centimetre measured 1m from the light source.	
4.3	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.	
4.4	Working distance range (focal length): 70 - 180cm.	
4.4	Depth of field with focused light: > 70cm.	
4.4	Luminance field size: 15-25cm diameter, adjustable.	
4.4	Must have a control to regulate light intensity and to switch on the unit.	
4.4	Shall have an On/Off switch at lamp head.	
4.40	Shall come with continuous dimmer, continuous focus adjustment, continuous field adjustment.	
4.4	Sterilizeable handle to regulate light field size, 3 pcs.	
4.4	Vertical adjustment shall not be less than 115cm.	
4.4	Rotation: 360°.	
4.4	Shall come with Ophthalmic procedures safe light bulbs with a minimum of 1000 hours	
4.5	The main light and satellite light shall comply with interference suppressed VDE 0875 or equivalent.	
4.5	Transformer and operating elements shall be integrated in housing of main light & satellite light.	
4.5	Installation Kit	
	The followings items shall also be included:	
	□ Ceiling mounting plate/ bracket or equivalent and works and materials to make good the ceiling after installation.	
	□ Wires, conduits and other accessories for connecting the wall control box, the light and others.	
	□ Other materials needed for the installation on the items above.	
5	**Accessories, spares and consumables**	
5.1	Accessories:	
	□ 1 x 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	**Operating Environment**	
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	**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.	
7.3	Electrical safety conforms to standards for electrical safety IEC 60601-1 General requirement for Electrical safety of Medical Equipment.	
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.	
10	**Maintenance Service During Warranty Period**	
10	During the warranty period supplier must ensure corrective/breakdown maintenance whenever required.	
11	**Installation and Commissioning**	
11	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	**Documentation**	
12	User (Operating) manual in English.	
12	Service (Technical / Maintenance) manual in English.	
12	List of important spare parts and accessories with their part numbers and costing.	
12	Certificate of calibration and inspection from factory.	

7 **Hydraulic Operating Table**

No.	Item Specifications	**Fill your Specification**
1	**Description of Functions**	
1.1	Hydraulic operating tables are simple tables for performing surgical procedures and it works without electrical power.	
2	**Operational Requirements**	
2.1	OT Table is required for general surgery and shall have X-Ray translucent tops.	
3	**System Configuration**	
3.1	Operating Table Hydraulic with complete accessories.	
4	**Technical Specifications**	
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	**Dimensions (approx. +/- 10 % variations):**	
	□ 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: 555 mm.	
	□ Length: 1950 mm.	
5	**Accessories, spares and consumables**	
5.1	**Accessories:**	
	□ Padded arm rest with straps: pair with damps.	
	□ Anesthesia screen with clamps.	
	□ Side supports: pair with clamps.	
	□ Knee crutches: pair with damps.	
	□ 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	**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 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.	
10	**Maintenance Service During Warranty Period**	
10	During the warranty period supplier must ensure corrective/breakdown maintenance whenever required.	
11	**Documentation**	
11	User (Operating) manual in English.	
11	Service (Technical / Maintenance) manual in English.	
11	List of important spare parts and accessories with their part numbers and costing.	
11	Certificate of calibration and inspection from factory.	

8	**X-Ray Lead Apron**

No.	Item Specifications	**Fill your Specification**
1	**Technical Specifications**	
	Flexible lead rubber in tear resistant plastic cover	
	Sleeveless, half-length at back	
	Fastening with crossed elastic straps with Velcro end	
	0.5 lead thickness for small, medium and large sizes	
2	**Warranty**	
2.1	Comprehensive warranty for 2 years from acceptance.	