1

Adult Scale With Tap

No.	Item Specifications
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	Weighing 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.

2

Autoclave (50 L)

No.	Item Specifications
1	**Description of Function**
1.1	Autoclaves are required for sterilizing an object in high temperature and high pressure steam.
2	**Operational Requirements**
2.1	Microprocessor based electrically heated vertical steam sterilizer
3	**System Configuration**
3.1	Microprocessor based Autoclave (Vertical Model) with complete accessories.
4	**Technical Specifications**
	capacity: approx. 50 L.
	Vertical type.
	Stainless steel.
	Digital controlled temperature and pressure system.
	Steam sterilization, up to 135° C
	Digital temperature and pressure gauges.
	Safety devices : over heat (low water cut-off switch , safety valve and release valve)
	Automatic controlled sterilization cycle.
	2 modes sterilization (121°c - 134°c)
	Exhaust system.
	Stainless steel basket.
	Double wall case.
5	**Accessories, spares and consumables**
	Spare heating element- 2 set

	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 , Power supply , Humidity, etc. for Sudan.
	Power supply: 220-240V/ 50 Hz AC Single phase with appropriate plug .The power cable must be minimum 3 Meter
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.
	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.
8	**Warranty**
8.1	Comprehensive warranty for 2 years.
9	**Maintenance Service During Warranty Period**
9.1	During warranty period supplier must ensure corrective/breakdown maintenance whenever required.
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.
11.2	User (Operating) manual in English
11.3	Service (Technical / Maintenance) manual in English
11.4	List of important spare parts and accessories with their part numbers and costing.
11.5	Certificate of calibration and inspection from factory.

3

Autoclave (Small)18L

No.	Item Specifications
1	**Description of Function**
1.1	Autoclaves are required for sterilizing an object in high temperature and high pressure steam.

2	**Operational Requirements**
2.1	Microprocessor based electrically heated steam sterilizer
3	**System Configuration**
3.1	Microprocessor based Autoclave with complete accessories.
4	**Technical Specifications**
	capacity: approx. 18 L.
	Stainless steel.
	Digital controlled temperature and pressure system.
	Steam sterilization, up to 135° C
	Digital temperature and pressure gauges.
	Safety devices : over heat (low water cut-off switch , safety valve and release valve)
	Exhaust system.
	Stainless steel basket.
	Double wall case.
5	**Accessories, spares and consumables**
	Spare heating element- 2 set
	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 , Power supply , Humidity, etc. for Sudan.
	Power supply: 220-240V/ 50 Hz AC Single phase with appropriate plug .The power cable must be minimum 3 Meter.
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.
	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.
8	**Warranty**

8.1	Comprehensive warranty for 2 years.
9	**Maintenance Service During Warranty Period**
9.1	During warranty period supplier must ensure corrective/breakdown maintenance whenever required.
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.
11.2	User (Operating) manual in English.
11.3	Service (Technical / Maintenance) manual in English.
11.4	List of important spare parts and accessories with their part numbers and costing.
11.5	Certificate of calibration and inspection from factory.

4

Autoclave 150 L

No.	Item Specifications
1	**Description of Function**
1.1	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. 150 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:**
	□ Sterilizer chamber SS 316
	□ Door SS 316
	□ Jacket Stainless Steel
	□ Loading carriage SS 316
	□ Door Gasket : Silicon or better

	□ Insulation: fibre glass resin bonded wool or better
	□ Insulation cover: SS sheets
4.3	Operating temperature 121 0C – 138 0C 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.
4.1	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	**Accessories, spares and consumables**
5.1	Accessories:
	□ 3 dressing drums – (seamless stainless steel construction, suitable to fit into the autoclave).
	□ 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	**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.
6.2	Power supply: 380-440 V (3 Phase), 50Hz fitted with appropriate plug.
7	**Standards and Safety Requirements**
7.1	Must submit ISO 9001 or 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.
8	**User Training**
8.1	Must provide user training (including how to use and maintain the equipment).
9	**Warranty**
9.1	Comprehensive warranty for two years.
10	**Maintenance Service During Warranty Period**
10.1	During the warranty period supplier must ensure corrective/breakdown maintenance whenever required.
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 number and costing.
11.4	Certificate of calibration and inspection from factory.

5

Blood Bank Refrigerator

No.	Item Specifications
1	**Description of Function**
1.1	Blood Bank Refrigerator is used to store blood bags under controlled temperature.
2	**Operational Requirements**
2.1	System required with weekly chart recorder and digital display.
3	**System Configuration**
3.1	Blood Bank Refrigerator with weekly chart recorder, digital display and with complete accessories.
4	**Technical Specifications**
4.1	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.
4.2	Capacity must accommodate 150 blood bags and size will be approximately 250 litres.
4.3	Blood Bank Refrigerator shall have integrated temperature monitoring system with microprocessor controls.
4.5	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.
4.6	The blood bank refrigerator shall also have an inbuilt circular chart recorder for 7 days recording of temperature on circular chart paper.
4.7	The internal automatic temperature alarm system shall work if a temperature falls below 2 oC & exceeds beyond 6 oC.
4.8	The internal temperature alarm system shall also have a battery backup of minimum 3-4 hours.
4.9	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.
4.1	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.
4.11	Blood Bank Refrigerator shall confirm to noise level of less than 85 dBA as per IEC 61010.
4.12	Internal cabinet lighting to be provided with lamp illumination whenever door opens.
4.13	Shall come with roll out steel trays for proper storage of blood bags.
4.14	Blood bank refrigerator shall have in built servo controlled voltage stabilizer of suitable rating.
4.15	Shall have adjustments for uneven bases. The adjustments must be easy to use like rotating a screw at the legs in the base.
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.
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.
6.2	Power supply: 220-240V/ 50 Hz AC Single phase with appropriate plug .The power cable must be minimum 3 Meter

6.3	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
7	**Standards and Safety Requirements**
7.1	Must submit ISO 9001 or ISO13485:2003/AC:2007 AND
7.2	Must comply with WHO/UNICEF Specification Reference: BTS/RF.1 and DIN 58371.
7.3	Test and inspections as per WHO Procedure reference: Laboratory Test Procedure: Standard Test Procedure: BTS/Proc. / 3.
7.4	Shall meet IEC 60335-1and -2-24 General requirements of electrical safety.
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**
10.1	During the warranty period supplier must ensure planned preventive maintenance (PPM) and corrective/breakdown maintenance whenever required.
11	**Installation and Commissioning**
11.1	The supplier must accomplish proper commissioning of the item onsite.
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 number and costing.
12.4	Certificate of calibration and inspection from factory.

6

Centrifuge

No.	Item Specifications
1	**Description of Function**

1.1	Centrifuges are required in the laboratory to separate various components of Blood for analysis.
2	**Operational Requirements**
2.1	Aerodynamic compact construction for vibration free performance.
3	**System Configuration**
3.1	Centrifuge with complete accessories, adaptors.
4	**Technical Specifications**
	Volume of tube: 15 ml.
	Rotor Type: Fixed OR swing-out to take 6x15ml - 12x15ml tubes
	Speed Range: 4000 - 6000 rpm (or higher)
	Drive Motor: Brushless motor.
	Digital display and control for speed and time.
	Stainless Steel Chamber.
	LID Lock.
	Line voltage: 220 ± 20 % 50 Hz.
5	**Accessories, spares and consumables**
	Aerosol-resistant caps for buckets / lid for rotor
	Adapters for 15 ml tubes
	UPS/voltage regulator
	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 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	**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	Must comply with IEC/TR 61010-3-020 :Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 3-020: Conformity verification report for IEC 61010-2-020:1992 Particular requirements for laboratory centrifuges"
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**
10.1	During the warranty period supplier must ensure corrective/breakdown maintenance whenever required.
11	**Installation and Commissioning**
11.1	Supplier must accomplish proper installation and commissioning of the equipment on site.
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.

7

Colorimeter

No.	Item Specifications
1	**Description of Function**
1.1	General purpose colorimeter use in clinical laboratory.
2	**Operational Requirements**
2.1	Microprocessor controlled system.
3	**System Configuration**
3.1	Colorimeter with complete accessories.
4	**Technical Specifications**
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 photocell.

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	**Accessories, spares and consumables**
	□ Square and round cuvette minimum volume 1ml.
	□ Cuvettes: 10 nos.
	□ Lamp: 02 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	**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.
6.2	Power supply: 220-240V/ 50 Hz AC Single phase with appropriate plug .The power cable must be minimum 3 Meter
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	Must comply with IEC 61010 Safety requirements for electrical equipment for measurement, control, and laboratory use
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**
10.1	During the warranty period supplier must ensure corrective/breakdown maintenance whenever required.
11	**Installation and Commissioning**
11.1	Supplier must accomplish proper installation and commissioning of the equipment on site.
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.

8

Colposcopy

No.	Item Specifications
1	Standard
2	CE or USFDA or TUV approved certificate.
3	**Warranty**
3.1	Comprehensive warranty for 2 years from acceptance.

9

Community Health Worker Kit

No.	Item Specifications
	Content of the following items:
1	Bag - Qty. 1
2	Bandage - Qty. 5
3	Boiler - Qty. 1
4	Clinical record sheet - Qty. 1
5	Cotton wool - Qty. 5
6	Dissecting set - Qty. 1
7	Education flip chart - Qty. 1
8	Gauze swabs - Qty. 5
9	Kidney dish - Qty. 1
10	MUAC strip - Qty. 2
11	OSR preparation set - Qty. 1
12	Plaster surgical - Qty. 2
13	Plastic sheet - Qty. 2
14	Puncher - Qty. 1
15	Referral form - Qty. 2
16	Sphygmomanometer - Qty. 1

17	Stapler - Qty. 1
18	Stethoscope - Qty. 1
19	Tap adhesive - Qty. 5
20	Thermometer - Qty. 1
21	Timer - Qty. 1
22	Vaccine carrier - Qty. 1
23	Wash bowl - Qty. 1
24	**Warranty:**
24.1	Comprehensive warranty for 2 years from acceptance.

10

Conventional X-Ray

No.	Item Specifications
1	**Description of Function**
1.1	A general purpose X-ray machine for routine X-ray examinations at healthcare facilities.
2	**Operational Requirements**
2.1	It shall be suitable to be used for adult and paediatric patients in general Radiography examination.
3	**System Configuration**
3.1	X-ray Generator,1 unit
3.2	X-Ray tube & tube support system, 1 unit
3.3	Radiographic patient table, fixed height1 unit
3.4	Floor mounted bucky stand, 1 unit
4	**Technical Specifications**
I	**X-ray Generator:**
	Bidder shall indicate brand and model information here and provide technical data document for X-ray generator offered
4.1	Microprocessor based, high frequency inverter generator, the generator shall have at least 50kHz.
4.2	Generator Output: not less than 50 kW (500mA at 100kV)
4.3	Radiographic voltage: 40 kV to 150kV, in 1kV step.
4.4	Radiographic current: 10 to 500mA

4.5	Exposure time: 0.001sec (1msec) - 10sec
4.6	Anatomical Programmable Radiographic mode shall be available.
4.7	Manual & automatic exposure control and automatic brightness control shall be available.
4.8	Shall come with overload protection device.
4.9	Power supply: 3 phase, 380 - 415V 50/60Hz
II	**X-Ray Tube:**
4.10	X-ray tube rotating: +/-120°.
4.11	Large focus not more than 1.2 mm.
4.12	Small focus not more than 0.6 mm.
4.13	Maximum tube voltage 150 KV. Maximum tube output shall match with the generator output of not less than 50 KW.
4.14	Filtration: min 2.5mm Al equivalent.
4.15	Cooling method passive or forced air and/or oil cooling.
4.16	Anode rotating speed: More than 3000 rpm.
4.17	Anode heat capacity shall not be less than 300 KHU.
III	**Radiography Patient Table:**
4.18	Radiography table shall be fixed height, 4-way floating top type with foot switch control.
4.19	Come with grid and cassette tray, with grid ratio: not less than 10:1. Grid line number: 40 line/cm. Focus distance: 115cm.
4.20	Cassette size: accept all sizes from cassette 5” x 7” cm to 14” x 17” type.
4.21	Radiography table shall be fixed height of about 60cm.
4.22	Table top to film distance: approx. 6cm.
4.23	Table top transverse movement : approx. ±14cm.
4.24	Table longitudinal movement : approx. ± 29cm.
4.25	Table top dimension: approx. 2000 mm x 800 mm.
4.26	Shall come with a three-field AEC.
4.27	Table movement arrested by electromagnetic brakes.
IV	**Floor Mounted Bucky Stand:**
4.28	Vertical travel: from 460-1700mm or in the range.
4.29	Moving Grid with Grid ratio not less than 10:1. Grid line number: 40 lines/cm.

4.30	Shall come with Automatic Exposure Control for vertical bucky exposures.
4.31	Cassette size: accept all sizes from 5”x7” to 14”x17”.
4.32	Movement arrested by electromagnetic brakes.
V	**Floor Mounted Tube Stand:**
4.33	Longitudinal travel: approx. 1750mm.
4.34	Vertical travel: from 630 -1850mm or in the range.
4.35	Movement arrested by electromagnetic brakes.
4.36	Rotation of tube arm around vertical axis: 1800; lockable at 00 to +/- 900.
VI	**Collimator:**
4.37	Manually adjustable.
4.38	Manually selectable filters.
4.39	Light localizer with timer controlled light.
4.40	Built-in light switch should be provided.
4.41	Turning angle should be min +/- 45 degree.
4.42	Halogen lamp.
VII	**Control Console:**
4.43	Digital Display.
4.44	Minimum 3 Point Exposure Technique.
4.45	Status display, error display.
4.46	Shall have area dose product determination and display.
4.47	Shall come with radiography remote control in control room.
5	**Accessories, Spare Parts and Consumables**
5.1	Accessories:
	□ Lead apron, light weight with Lead equivalence 2mm- 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.
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.

6.2	Power supply: 380-415VAC 3 phase 50Hz fitted with appropriate plug for X-ray generator fitted with appropriate plug for other units. The power cable must be at least 3 metres in length.
7	**Standards & Safety Requirements**
7.1	Must submit ISO 13485:2003/AC: 2007 AND
7.2	CE (93/42 EEC Directives) or USFDA approved product certificate.
7.3	Shall meet:
	□ IEC 60601-1-3 - Part 1: General Requirements for safety - Collateral Standard: General Requirements for Radiation Protection in Diagnostic X-Ray Equipment.
	□ IEC 60601-2-7 - Part 2-7: Particular Requirements for the Safety of High-Voltage Generators of Diagnostic X-Ray Generators.
8	**User Training**
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	**Warranty**
9.1	Comprehensive warranty for 2 years from acceptance.
10	**Maintenance Service During Warranty Period**
10.1	During warranty period supplier must ensure preventive maintenance & corrective/breakdown maintenance whenever required.
11	**Installation and Commissioning**
11.1	The bidder must arrange for the equipment to be installed 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.

Couch

No.	Item Specifications
1	**Description of Function**
1.1	Examination couch for use of health checkup and treatment of patients.
2	**Operational Requirements**
2.1	An examination couch with upholstered top in two pieces. Adjustable headrest on gas spring.
3	**System Configuration**
3.1	Examination couch with mattress.
4	**Technical Specifications**
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	**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, 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 Climate, Temperature,Humidity, etc. for Sudan.
7	**Warranty**
7.1	Comprehensive warranty for 2 years after acceptance.
8	**Maintenance Service During Warranty Period**
8.1	During the warranty period supplier must ensure corrective/breakdown maintenance whenever required.

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Delivery Bed

No.	Item Specifications
1	**Description of Function**
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	**Operational Requirements**
2.1	Manually operated delivery bed.
3	**System Configuration**
3.1	Delivery Bed with complete attachments and accessories.
4	**Technical Specifications**
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.
4.1	Must have sliding stainless steel bowl at perennial part of table.
4.11	It must have catheter 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	Dimensions (approx.):
	□ Length: 7 feet
	□ Width: 3 feet
5	**Accessories, spares and consumables**
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	**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	**Warranty**
7.1	Comprehensive warranty for 2 years after acceptance.
8	**Maintenance Service During Warranty Period**
8.1	During the warranty period supplier must ensure corrective/breakdown maintenance whenever required.

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Dental Unit

No.	Item Specifications
1	**Description of Function**
1.1	A Dental chair for Dental treatment
2	**Operational Requirements**
2.1	It shall operate on AC power supply.
3	**System Configuration**
3.1	Delivery Bed 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
3.1	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.
4	**Technical Specifications**
4.1	Patient type: adult & paediatric & deformity.
4.2	Main unit standard configuration as follow:
4.3	**Patient chair:**
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 then 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	**Dentist element:**

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	**Assistant element:**
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	**Water unit:**
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 1.5L
4.35	**Operating light:**
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.
	Bidder shall indicate brand and model/ part number information here and provide catalogue of each piece of item offered here.
4.49	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.
	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 5 pieces of amalgam carvers, double-ended, made of stainless steel, one size each from small, medium up to large size.
	Bidder shall indicate brand and model/ part number information here and provide catalogue of each piece of item offered here.
4.51	Come with one set of 5 pieces of burnishers, double-ended, made of stainless steel, one size each of different type.
	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 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.
	Air compressor must be oil less & noise less.
4.53	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	**Accessories, Spare Parts 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	Power supply: 220 – 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metres in length.

6.2	Environment:
	□ Temperature:10-45 degree C
	□ 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	**Standards & 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.
8	**User Training**
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	**Warranty**
9.1	The warranty period for this item shall be 24 months after acceptance of the Goods
10	**Maintenance Service During Warranty Period**
10.1	Preventive and corrective maintenance services during warranty period shall be included.
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 number and costing.
12.4	Certificate of calibration and inspection from factory.

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Examination Lamp

No.	Item Specifications
1	**Description of Function**

1.1	Examination light/lamp use in hospital for general examination & minor surgical procedure in wards and in treatment rooms etc.
2	**Operational Requirements**
2.1	Shall operate on mains electric supply.
3	**System Configuration**
3.1	Examination lamp with all standard accessories.
3.1	Patient chair, 1 unit
4	**Technical Specifications**
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.
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.
5	**Accessories, spares and consumables**
5.1	Accessories:
	□ 1 x spare set of fuses.
	□ 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).
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.
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.
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**
10.1	During the warranty period supplier must ensure corrective/breakdown maintenance whenever required.

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Examination Screen (Wing)

No.	Specifications
1	**Description of Function**
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	**Operational Requirements**
2.1	Epoxy powder coated or Better , three fold patient screen.
3	**System Configuration**
3.1	Patient Screen with light blue curtain and fully swivels twin wheel castors.
4	**Technical Specifications**
4.1	Three fold ward screen approx. total size 2450 w x 1650 h mm in three sections.
4.2	Mild steel tubular construction with epoxy powder coated or better treated in three 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	**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. The conditions include Climate, Temperature, Humidity, etc.
7	**Warranty**
7.1	Comprehensive warranty for 2 years after acceptance.

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Fetal Scope (Pinard)

No.	Specifications
1	**Technical Specifications**
1.1	Made of aluminum.
1.2	Should be monaural.
1.3	Length : approx 15 cm
2	**Warranty**
2.1	Comprehensive warranty for 2 years after acceptance.

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Gynecological Set

No.	Specifications
1	**Technical Specifications**
1.1	TC MAYO-LEXER DISS.SCISSORS 21CM STR. X1
1.2	GROSS-MAIER SPONGE FCPS.265MM STR.RATCHE x2
1.3	FOERSTER SPONGE FORCEPS 25CM STR.SERR. x2
1.4	DISSECTING FORCEPS 15CM x1

1.5	DISSECTING FORCEPS 25CM x2
1.6	TISSUE FORCEPS 15CM 1X2 TEETH x1
1.7	CRILE HEMOSTATIC FORCEPS 145MMCVD. X2
1.8	PROBE D/E 20CM 1.5MM DIAM. X2
1.9	CUSCO VAGINAL SPECULUM 75X17MM VIRGIN x2
1.10	CUSCO SPECULUM NO.1 90X22/25MM SWISS PAT x2
1.11	CUSCO SPECULUM NO.2 100X25/27MM SWISS PA x4
1.12	CUSCO SPECULUM NO.3 110X27/30MM SWISS PA x2
1.13	KRISTELLER SPECULUM SET 75X27MM x1
1.14	KRISTELLER VAGINAL SPEC.SET 110X27MM x1
1.15	KRISTELLER VAGINAL SPEC.SET 110X30MM x1
1.16	SIMON VAGINAL RETRACTOR 28CM 115X27MM x2
1.17	BOZEMANN UTERINE DRESSING FCPS.26CM CVD. X2
2	**Operating Environment**
2.1	The system offered shall be designed to store and to operate normally under the conditions include Climate, Temperature, Humidity, etc.
3	**Standards and Safety Requirements**
3.1	The manufacturer must have ISO certification for quality of the products.
4	**User Training**
4.1	Not applicable
5	**Warranty**
5.1	Warranty for 2 years.
6	**Maintenance Service During Warranty Period**
6.1	Standard warranty conditions are applicable.

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Hemoglobin Meter

No.	Item Specifications
1	**Technical Specifications**
1.1	Portable device used for quantitative determination of hemoglobin in capillary, venous or arterial blood.

1.2	Should have the following features:
1.3	Compact, lightweight, easy to use.
1.4	Dual power supply, battery and AC adapter.
1.5	Sample type: whole blood
1.6	Sample size one drop (approximately 12 μL)
1.7	Measuring range 0 - 25 g/dl
1.8	Accuracy: CV ± 1.5 % or better
1.9	Indicator Large LCD screen.
1.10	Build-in quality control feature for verification of the analyzer
1.11	Low battery indicator.
1.12	Accessories: AC adaptor, test strips or cuvettes, quality control strip or cuvette.
1.13	Construction: Hand held
2	**Operating Environment**
2.1	The product offered shall be designed to be stored and to operate normally under Power Supply, Climate, Temperature,Humidity, etc. for Sudan.
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 or TUV 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	**Maintenance Service during Warranty Period**
6.1	During warranty period supplier must ensure corrective/breakdown maintenance whenever required.

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Ice Bag

No.	Item Specifications
1	**Description of Function**
1.1	Ice-packs are used for the transport of vaccines and other biological specimens and thus ensure

2	**Operational Requirements**
2.1	Ice-pack or water-pack frozen to a temperature between -5°C and -20°C before use.
3	**System Configuration**
3.1	0.4 litre Ice-pack with screw cap.
4	**Technical Specifications**
4.1	Capacity: 0.4 litres
4.2	Water content: 0.35 to 0.4 litres
4.3	External dimensions: 163 x 94 x 34 mm, +/- 2 mm.
4.4	Ice-pack walls to be reinforced in order to prevent swelling.
4.5	It shall come with removable cap, with internal water seal to prevent leakage.
4.6	It shall have filling line indicated on one side.
4.7	It shall have 2 holes for keeping vaccine vials.
5	**Accessories, spares and consumables**
5.1	Not applicable.
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	Shall meet UNICEF/WHO Standard E005/IP01-VP.2.
7.2	Bidder must provide the WHO PQS prequalified certificate.
7.3	The system shall be tested as per WHO Standard Test procedures as per E4/PROC/1.
8	**User Training**
8.1	Not applicable.
9	**Warranty**
9.1	Warranty for 2 year after acceptance.
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	Manufacturer's certification of compliance of test procedures as per WHO Standards Test Procedures.
12.2	Inspection Certificate from manufacturer to be complying with WHO specification as specified above.
12.3	Manual(s):
	Manual(s) with clear descriptions for users. The manual(s) shall be provided in the English language.
12.4	Packing:
	Labels bearing handling instructions shall be highly visible and printed clearly on the outer packing.

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Instrument Trolley

No.	Item Specifications
1	**Description of Function**
1.1	It is an instrument trolley for laying out surgical instruments in the operation theatre.
2	**Operational Requirements**
2.1	Stainless steel instrument trolley with swivel castors.
3	**System Configuration**
3.1	Instrument trolley with two shelves, railings, SS bowl, four swivels castors.
4	**Technical Specifications**
4.1	It shall be constructed fully with 304 grade stainless steel sheet and tube or better.
4.2	Overall size: approximately 860 H x 460 W x 760 L mm
4.3	It shall be have 2 tiers of grade 304 stainless steel shelves, top approx. at 880mm and lower shelf at 400mm.
4.4	On three sides of shelves 20 mm upright lips/rail. Fourth side to have turned down edge
4.5	Shall be mobile on 4 x 50mm diameter (approx.) robust 360 deg. swivel castors with non-marking grey tyres and with at least 2 diagonal castors shall have brakes
5	**Accessories, spares and consumables**
5.1	**Accessories:**
	□ SS bowl 1no.
6	**Operating Environment**
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	**Warranty**

7.1	Warranty for 2 year after acceptance.

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Kidney Dish (Med)

No.	Item Specifications
1	**Description of Function**
1.1	To use in medical and surgical wards to receive soiled dressings and other medical waste.
2	**Operational Requirements**
2.1	Basin, kidney shaped, stainless steel
3	**System Configuration**
3.1	Basin, Kidney shaped, Stainless Steel
4	**Technical Specifications**
4.1	Container, kidney shaped kidney dish, stainless steel, smooth surface.
4.2	Material: Austenitic stainless steel. Austenitic stainless steel composition: 18 to 20% chromium, 8 to 10% nickel.
4.3	Dimensions:
	approximately 250 mm.
	Thickness: 0.8mm.
4.4	Sterilizeable.
5	**Accessories, spares and consumables**
5.1	Not applicable.
6	**Operating Environment**
6.1	The system offered shall be designed to store and to operate normally under the conditions include Climate, Temperature, Humidity, etc.
7	**Standards and Safety Requirements**
7.1	The manufacturer must have ISO certification for quality of the products.
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.

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Kidney Dish (Small)

No.	Item Specifications
1	**Description of Function**
1.1	To use in medical and surgical wards to receive soiled dressings and other medical waste.
2	**Operational Requirements**
2.1	Basin, kidney shaped, stainless steel
3	**System Configuration**
3.1	Basin, Kidney shaped, Stainless Steel
4	**Technical Specifications**
4.1	Container, kidney shaped kidney dish, stainless steel, smooth surface.
4.2	Material: Austenitic stainless steel. Austenitic stainless steel composition: 18 to 20% chromium, 8 to 10% nickel.
4.3	Dimensions:
	approximately 200 mm.
	Thickness: 0.8mm.
4.4	Sterilizeable.
5	**Accessories, spares and consumables**
5.1	Not applicable.
6	**Operating Environment**
6.1	The system offered shall be designed to store and to operate normally under the conditions include Climate, Temperature, Humidity, etc.
7	**Standards and Safety Requirements**
7.1	The manufacturer must have ISO certification for quality of the products.
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.

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Major Surgical Set

No.	Item Specifications
1	**Technical Specifications**
	Strilization Box
	FOERSTER SPONGE FORCEPS 25CM STR. SERR.
	BACKHAUS TOWEL FORCEPS 130MM
	SCALPEL HANDLE NO. 3
	SCALPEL HANDLE NO. 4
	SCALPEL HANDLE NO. 7
	TC-EDGE MAYO DISSECT. SCISSORS 17CM STR.
	TC-EDGE MAYO DISSECT. SCISSORS 17CM CVD.
	TC-EDGE METZENBAUM SCISSORS 18CM CVD.
	SCURGICAL SCISSORS 145MM STR.SH-BL.
	TC UNIVERSAL WIRE CUTTING SCS.12CM ANG.
	DISSECTING FORCEPS 14,5CM
	DISSECTING FORCEPS 20CM
	TISSUE FORSEPS 14,5CM 1X2 TEETH
	TISSUE FORSEPS 20CM 1X2 TEETH
	ALLIS TISSUE FORCEPS 15CM 5X6 TEETH
	BABCOCK TISSUE FORCEPS 16CM
	HALSTED MOSQUITO FORCEPS 12,5CM STR.
	HALSTED MOSQUITO FORCEPS 12,5CM CVD.
	RANKIN-CRILE HEMOSTATIC FCPS. 16CM STR.
	RANKIN-CRILE HEMOSTATIC FCPS. 16CM CVD.
	ROCHESTER-PEAN HEMOSTATIC FCPS. 16CM CVD.

	ROCHESTER-OCHSNER FORCEPS 16CM STR. 1X2 T
	RICHARDSON RETRACTOR 24CM 28X20MM
	RICHARDSON RETRACTOR 24CM 36X28MM
	RICHARDSON RETRACTOR 24CM 44X38CM
	DEAVER RETRACTOR 300X50MM
	VOLKMANN RETRACTOR 21,5CM 4 BLUNT PRONGS
	VOLKMANN RETRACTOR 21,5CM 6 BLUNT PRONGS
	CUSHING VEIN RETRACTOR 20CM 9X12MM
	US ARMY D/E RETRACTOR 21CM SET OF 2
	RIBBON RETRAKTOR 330X25MM
	RIBBON RETRAKTOR 330X40MM
	BALFOUR ABDOM.RETRACTOR 250MM SPREAD
	GROOVED DIRECTOR 14,5CM
	PROBE WITH EYE 13CM
	DESCHAMPS LIGATURE NEEDLE 21CM RIGHT BL.
	DESCHAMPS LIGATURE NEEDLE 21CM LEFT BL.
	YANKAUER SUCTION TUBE 28CM SS WITH EXTRA OLIVE
	TC MAYO HEGAR NEEDLE HOLDER 16CM G2500
	TC MAYO HEGAR NEEDLE HOLDER 18CM; 0,5MM
2	**Operating Environment**
2.1	The system offered shall be designed to store and to operate normally under the conditions include Climate, Temperature, Humidity, etc. for Sudan
3	**Standards and Safety Requirements**
3.1	The manufacturer must have ISO certification for quality of the products.
4	**User Training**
4.1	Not applicable
5	**Warranty**
5.1	Warranty for 2 years.
6	**Maintenance Service During Warranty Period**
6.1	Standard warranty conditions are applicable.

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Medical Bed With Mattress

No.	Item Specifications
1	**Description of Function**
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.
2	**Operational Requirements**
2.1	The patient bed shall be made of solid steel construction with anti-corrosive and antirust treated baked hard epoxy powder coating
3	**System Configuration**
3.1	Hospital Bed epoxy powder coated
4	**Technical Specifications**
4.1	Bed base shall be anti-corrosive and antirust 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	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 antirust treated epoxy powder coated or 304 grade stainless steel IV rod.
4.5	Shall have provisions to fix urinary bag on both sides.
4.6	All 4 legs of the locker shall be capped with heavy duty rubber footings.
4.7	Bedhead and foot-end panel (head and foot bows) shall be made of either between 4-6 anti-corrosive and antirust 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/m3 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	**Mattress Cover:**
	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.
5	**System Configuration 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 system offered shall be designed to store and to operate normally under the conditions. The conditions include Climate, Temperature, Humidity, etc.
7	**Warranty**
7.1	Warranty for 2 years.

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Microscope

No.	Item Specifications
1	**Description of Function**
1.1	Compoun d microscope consists of two or more than two magnifying lenses. One can view individual cells, even living ones. It has high magnification
2	**Operational Requirements**

2.1	System co mplete with illumination system is required.
3	**System Configuration**
3.1	Binocular Microscope Compound with complete accessories
4	**Technical Specifications**
4.1	Body :Bin ocular, 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 4 0x 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 and spring loaded type.
	Suitable prominent marking must be provided on 100x for easy identification.
4.6	Unbreaka ble containers to be provided for storing the objectives. All objectives must be wide field, achromatic and par focal.
4.7	Making f or the Objectives : Each objective must be engraved with the following information:-
	□ Name of the manufacturer
	□ Magnification and numerical aperture, for example, 10x/0.25
	□ 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 vermier 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 build-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 build-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.
	□ All metallic parts must be corrosion-proof, acid-proof and stain-proof
	□ 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.
	□ One no. of anti-static cleaning brush must be provided with each Microscope for cleaning purpose.
	□ Each Microscope must be supplied with Blue filters. The Blue filter must be packed in the box and not fixed on the Microscopes.
5	**Accessories, spares and consumables**
5.1	Accessories:
	□ 100x oil immersion objective – one.
	□ Halogen bulb, (6/12volts, 20w) – 6 Nos.
	□ 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	**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.
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	**Standards and Safety Requirements**
7.1	Must sub mit ISO13485:2003/AC:2007 for Medical Devices AND
7.2	CE or US FDA 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**
10.1	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.

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Midwifery Kit

No.	Item Specifications
1	**Technical Specifications**
1	**VMW kit container:**
	Aluminum container with a handle on cover

	Capacity: enough to contain the items listed below (Item No 2-28)
	Length: 30 to 32 cm
	Width: 23 to 25 cm
	Depth: 16 to 18cm
2	**Stainless container with cover**
	Size: enough space to place scissors and forceps below
	Approximate Size:
	Length 22-25cm
	Width 10-12cm
	Depth 5-7cm
	Material: stainless steel
3	**Surgical Scissors x 2**
	Length: 16 to 17cm
	Material: stainless steel
	Straight, Blunt
	For medical use
4	**Artery Forceps x 2**
	Length: 16 to 17cm
	Indented part should be more than 4 cm to hold umbilical cord.
	Material: stainless steel
	Straight
	For medical use
5	**Handling forceps (Cheatle Forceps)**
	Length: 27 to 29cm
	Curved
	Material: stainless steel
	For medical use
6	**Kidney dish**
	Length: 24 to 26cm
	Material: stainless steel

7	**Stainless bowl**
	Diameter: 14 to 16cm
	Material: stainless steel
	For medical use
8	**Sprit lamp**
	Diameter: 5 to 7cm
	Material: stainless steel
9	**Thermometer x 2**
	Auxiliary
	1 x Clinical mercury thermometer & 1 x Digital
10	**Fetal Scope**
	(Aluminum Pinard Stethoscope)
11	**Weight scale for baby**
	Colored type
	Capacity: up to 5kg
	Measure every 50g
	Spring
	For newborn baby and infant
12	**Trousers for weight scale**
	Size to fit for newborn baby
	Length: 28 to 30cm
	Width:33 to 35cm
13	**Mucus Sucking tube**
	For newborn baby
	Size: 12Fr-14Fr
	Capacity: 25ml
	Transparent graduated chamber
	Smooth outer surface finish of the catheter
14	**Urine catheter**
	Size: 16-18Fr

	Re-usable
	Material: Rubber
15	**Sphygmomanometer**
	Aneroid
16	**Stethoscope (single)**
	Binaural
	Diaphragm
17	**Tape measure**
	Length: 100 to 150cm
	Vinyl-coated
18	**Urine test tube**
	Material: Glass
	Length: 10cm
	Diameter: 1 to 1.5cm
19	**Handle for urine test tube**
	Size to hold urine test tube for urine test
20	**Dropper**
	Capacity: 1ml
	Material: Plastic
21	**Plastic Sheet**
22	**Plastic Apron**
23	**brush**
24	**Nail clipper**
25	**Umbilical cord clamp box of 50 Pcs**
26	**baby blanket**
27	**LED Torch**
28	**Nail clipper**
2	**Operating Environment**
2.1	The system offered shall be designed to store and to operate normally under the conditions include Climate, Temperature, Humidity, etc. for Sudan

3	**Standards and Safety Requirements**
3.1	The manufacturer must have ISO certification for quality of the products.
4	**User Training**
4.1	Not applicable
5	**Warranty**
5.1	Warranty for 2 years.
6	**Maintenance Service During Warranty Period**
6.1	Standard warranty conditions are applicable.

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Minor Surgical Set

No.	Item Specifications
1	**Technical Specifications**
	Strilization Box
	surgical knife handle
	needle holder straight (mayo) 17.5
	straight artery forceps ,pean 16
	curved artery forceps, pean 16
	dissecting forceps
	curved oper. Scissors , blunt point (mayo) 17 cm
	surgical scissors , straight , blunt 14.5 cm
	sharp uterine curette 26 cm x 9 mm sims
	blunt uterine curette 26 cm x 8 mm (sims)
	kideny basin 475 ml (16oz) stainless steal 12" x5 x 2-3/8
	bowl,solution,stainless steel, 8 liters.
	gauze scissors
	dressing tray
	surgical towels
	handing forceps
2	**Operating Environment**

2.1	The system offered shall be designed to store and to operate normally under the conditions include Climate, Temperature, Humidity, etc.
3	**Standards and Safety Requirements**
3.1	The manufacturer must have ISO certification for quality of the products.
4	**User Training**
4.1	Not applicable
5	**Warranty**
5.1	Warranty for 2 years.
6	**Maintenance Service During Warranty Period**
6.1	Standard warranty conditions are applicable.

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Nebulizer Heavy Duty

No.	Item Specifications
1	**Description of Function**
1.1	Nebuliser 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.
2	**Operational Requirements**
2.1	Heavy duty compact Nebuliser is required.
3	**System Configuration**
3.1	Nebuliser, complete unit with all standard accessories.
4	**Technical Specifications**
4.1	Compact, lightweight, low noise.
4.2	Durable long life compressor. Suitable for heavy duty/ institutional (hospital) use, 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 app.15 L/min.
4.9	24 hours continuous work for hospital use.
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.
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.
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 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	**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**
10.1	During warranty period supplier must ensure corrective/breakdown maintenance whenever required.
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 number and costing.
11.4	Certificate of calibration and inspection from factory.

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Infant Ventilator

No.	Item Specifications

1	**Description of Function**
1.1	Only Paediatric/Infant Ventilators provide artificial respiration support to infants and neonates in ICU/Wards & not to be used for Adult.
2	**Operational Requirements**
2.1	□ The Infant Paediatric ventilator must be easy to operate and must incorporate safety alarms and backup ventilation.
	□ Microprocessor Controlled integrated suitable for neonate and child ventilation.
3	**System Configuration**
3.1	Ventilator-Paediatric & Infant with Built in Medical Air Compressor and with complete accessories or Turbine.
4	**Technical Specifications**
4.1	Must have not less than 10 inch colour Digital screen for monitoring of the ventilation parameters, curves and loops
4.2	Automatic compliance & Leakage compensation for circuit and ET tube
4.3	Must have the facilities for following setting for neonate to child:
	□ Tidal Volume
	□ Flow Pattern
	□ Inspiration Plateau
	□ Pressure ramp
	□ SIMV Rate
	□ CPAP/PEEP
	□ Pressure Support
	□ FiO2
	□ Pause Time
	□ Inspiration trigger sensitivity to flow & pressure
	□ Base Flow
	□ Sensitivity for cycling to expiration
4.4	Must have the capability of monitoring of the following parameters:
	□ Airway Pressure
	□ Expired tidal Volume

	□ Minute Volume
	□ Spontaneous Minute Volume
	□ Total Frequency
	□ Fio2
	□ Auto PEEP
	□ Rapid Shallow Breathing Index
	□ Plateau Pressure
	□ Inspiratory & Expiratory Resistance
	□ Static Compliance
	□ Imposed Work of Breathing
	□ Peak, Plateau and mean airway pressure
4.5	Must have the Alarms for all the measured and monitored parameters.
4.6	□ Must have the following Modes of ventilations:
	□ Volume controlled
	□ Pressure controlled
	□ Pressure support
	□ SIMV (Pressure Control and volume control) with pressure support.
	□ CPAP/PEEP (0 – 50 CM H20)
	□ Auto mode /Auto flow preferable
	□ PRVC
	□ Biphasic preferable
	□ High frequency ventilation
4.7	Sensors must be automatically calibrated every time it is switched on
4.8	Must have the ability to calculate:
	□ Intrinsic Peep
	□ Occlusion Pressure
	□ Negative Inspiratory force
4.9	If Medical Air Compressor:
	□ Imported Built in Medical Air compressor
	□ Snap fit with the Ventilator module to provide an oil free Medical air .

	□ Peak output flow must be minimum 160 LPM.
	□ Air quality must comply with ISO compressed air purity class.
	□ Medical Air Compressor must automatically activate in the event of wall air supply loss.
	□ Replacement of internal filters must be performed without removing the compressor
	□ Must have washable air filter.
5	**Accessories, spares and consumables**
5.1	**Accessories:**
	□ Humidifier -Servo controlled with digital monitoring of inspired gas temperature complete with heating wire-01 no.
	□ Nebulizer compatible with ventilator-01
	□ Medical Air Compressor-01 no.
	□ Air Hose-01 no.
	□ Oxygen Hose-01 no.
	□ Paediatric autoclaveable/reusable silicon breathing circuit-02 nos.
	□ Infant autoclaveable/reusable silicone breathing circuit-02 nos.
	□ Filter paper for humidifier for 100 uses
	□ Non corrosive trolley and hinged arm: 01no.
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 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	**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	Certified to be compliant with ANS/IEC60601.2.12-01 Medical Electrical Equipment—Part 2-12; Particular Requirements for the Safety of Lung Ventilators—Critical Care Ventilators.
7.4	Must meet IEC 529 Level 3 (IP3X) (spraying water) for enclosure protection , water ingress.

7.5	Certified to be compliant with ISO-7767 for Oxygen monitoring.
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.
10	**Maintenance Service During Warranty Period**
10.1	During the warranty period supplier must ensure planned preventive maintenance (PPM) along with corrective/breakdown maintenance whenever required.
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.

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Operation Lamp

No.	Item Specifications
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: 1 no.
4.3	Light head shall not be greater than 760mm diameter.
4.4	Number of bulb: 1 main bulb, halogen 24V 150W or Better with 1 backup bulb with auto-switching or multi-bulbs light head not more than 4 bulbs of halogen 12V 50W.

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.
4.11	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 - 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	Sterilizeable 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	**Satellite Light, 1 unit.**
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: 1 main bulb, halogen 24V 150W or Better with 1 backup bulb with auto-switching or multi-bulbs light head not more than 3 bulbs of halogen 12V 50W.
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 certificated showing the compliance of this requirement with TSF.

4.30	Shall have 99% heat filtrating.
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	Sterilizeable 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
	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:
	□ Spare halogen bulbs for main light & satellite light: 01 set each.
	□ 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**
10.1	During the 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.

Operating Table

No.	Item Specifications
1	**Description of Function**
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.
	□ Muster supports: pair with clamps.
	□ Knee crutches: pair with damps.
	□ X-ray cassette tray.
	□ Kidney bridge.
	□ SS bowl with clamps.
	□ Infusion rod with clamp.
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 or TUV 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**
10.1	During the warranty period supplier must ensure corrective/breakdown maintenance whenever required.
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.

Orthopedic Table with Traction

No.	Item Specifications
1	**Description of Function**
1.1	Mechanical Fracture table to use in orthopaedic surgical procedures.
2	**Operational Requirements**
2.1	Watson Jones type design fracture table.
3	**System Configuration**
3.1	Fracture Table with all attachments.
4	**Technical Specifications**
4.1	The table must confirm to Watson Jones type design.
4.2	**Dimensions:**
	Approx.(+/- 10%): 762mm height, 1829mm length, 762mm breadth, with leg size 76x76 mm & cross bar 76x25mm.
4.3	Material: Mild steel
4.4	The table shall have epoxy powder coated washable paint finish or Better.
4.5	The table must be provided with all necessary attachments.
	Bidder shall specify the details of attachments.
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.
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.

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Oxygen Concentrator

No.	Item Specifications
1	**Description of Function**
1.1	Oxygen concentrator produces oxygen from ambient air.
2	**Operational Requirements**
2.1	Integrated Oxygen sensing device (OSD) measures concentration at flow meter entrance.
3	**System Configuration**
3.1	Oxygen Concentrator set complete with Flow Splitter.
4	**Technical Specifications**
I	**Oxygen Concentrator**
4.1	Output flow: max 5 LPM (Litre per minute).
4.2	Flow meter range: 1 to 5 LPM.
4.3	Output pressure: 60 kPa.
4.4	Oxygen concentration: 95% +/- 3% at 1-3 LPM, 92% +/- 3% at 4 LPM, 90% +/- 3% at 5LPM.
4.5	Time to reach 95% the specified performance: 5 minutes.
4.6	Four-step filtering (coarse, pre, inlet and bacterial) of air-intake.
4.7	All filters replaceable, coarse filter washable/reusable.
4.8	Continuous monitoring, with visual and audible alert on:
	□ Low and high output pressure
	□ Low oxygen concentration
	□ Oxygen monitor: amber light on the front illuminates when oxygen concentrator is below 85%. If concentration remains below 85% for more than 15 minutes, an audible alarm sounds.
	□ Power failure
	□ Battery test.

4.9	Temperature operating range: 20 to 60 OC.
4.1	Sound level produced: 40 to 50 dB(A).
4.11	Shall have 4 antistatic swivel casters, 2 with brakes and with integrated handle allows for easy moving and positioning.
II	**Flow Splitter for Oxygen Concentrator**
4.12	Five way split of oxygen flow provided by an oxygen concentrator.
4.13	Each flow can be adjusted individually via its flow meter, range: 0.125 to 2 LPM (Litre per minute).
4.14	The output nozzle can either be fit with tubing or left blank.
4.15	Input pressure: approx. 50 to 350 kPa.
4.16	Flow splitter allows precise distribution of the oxygen output of a concentrator towards 2, 3, 4 or 5 patients, i.e. neonates and infants.
5	**Accessories, spares and consumables**
5.1	**Accessories:**
	□ 2 x Adult cannula, with 2m tubing.
	□ 4 x Infant/Paediatric cannula, with 2m tubing.
	□ 4 x New-born cannula, with 2m tubing.
	□ 3 x Connector for above.
	□ 4 x Humidifiers.
	□ 4 x 50' tubing.
	□ 4 x tubing adapter kit.
	□ 6 x Spare coarse filters.
	□ 3 x Spare pre-filters.
	□ 3 x Spare inlet-filters.
	□ 3 x Spare bacterial-filters.
5.2	All standard accessories/consumables/parts required for the proper operation of the above item shall be included in the offer.
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.

6.2	Power supply: 220-240VAC, 50Hz fitted with appropriate plug. The power cable must be minimum 3 metres long.
	Power consumption, approx.: 500 W.
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 or TUV approved product certificate.
8	**User Training**
8.1	Must provide user training.
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	**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 number and costing.
11.4	Certificate of calibration and inspection from factory.

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Patient Trolley

No.	Item Specifications
1	**Description of Function**
1.1	A trolley for transportation of a patient in the hospital.
2	**Operational Requirements**
2.1	It shall be constructed fully with anti-corrosive and antirust treated epoxy powder coated steel sheet and tube or better.
3	**System Configuration**
3.1	Patient trolley with handles and four swivels castors.
4	**Technical Specifications**
4.1	Overall size: approximately 2030 L x 560 W x 820 H mm
4.2	Welded tubular frame with box type pattern construction.

4.3	Dished shaped top, push handles to be fitted at both ends. The dished shaped top surface shall be smooth and corrosive and rust resistance.
4.4	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. All four wheels MUST be fully 360 deg. swivels. Fixed direction wheels are NOT acceptable.
4.5	To be supplied complete with patient transfer board. Smooth board in either heavy duty mild steel or Aluminium Approx. size 1500 l x 500 w mm. All edges shall be rounded /curved finished. Surface to be smooth to permit easy sliding of patient onto trolley.
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.
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	**Warranty**
7.1	Comprehensive warranty for 2 years after acceptance.

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Pediatric Scale

No.	Item Specifications
1	**Description of Function**
1.1	Infant Weighing Scale (Pan Type) for Neonatal use and it must be mechanically operated
2	**Operational Requirements**
2.1	Pan type baby weighing scale. Suspension, trouser or hanging types as well as electronic or battery operated scales are not acceptable.
3	**System Configuration**
3.1	Infant weighing scale (Pan type), complete unit.
4	**Technical Specifications**
4.1	Large pan, approx. 450mm long and 300mm wide.
4.2	Pan to have flat base with lips on sides only (NOT on ends). Lip to be approx.80mm height

4.3	Pan preferably of Acrylic or Moulded Engineering Plastic. Metal having easy clean surface is also acceptable.
4.4	Scale to weigh 0 to 20 Kg in increments of 50g
4.5	Dial type or Danish yard-arm balance types acceptable
4.6	To have Tare/Zero adjustment system
5	**Accessories, spares and consumables**
5.1	Shall supply with all accessories for smooth operation of the system.
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	Manufacturer must have ISO certification for quality standards.
8	**User Training**
8.1	Not applicable.
9	**Warranty**
9.1	Comprehensive warranty for 2 years after acceptance.
10	**Maintenance Service During Warranty Period**
10.1	Standard warranty conditions are applicable.
11	**Installation, Inspections and Commissioning**
11.1	Must supply preassembled unit, ready to use.
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.

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Sims vaginal speculum

No.	Item Specifications
1	**Description of Function**

1.1	To retrac t backwards the posterior wall of the vagina to visualise the vaginal walls and cervix of the uterus.
2	**Operational Requirements**
2.1	Stainless steel, reusable Sim’s vaginal speculum, double ended.
3	**System Configuration**
3.1	Sim’s vaginal speculum of three different sizes.
4	**Technical Specifications**
4.1	Approx. Dimensions:
	□ Large: 72x34/80x38mm.
	□ Medium: 70x32/75x35mm.
	□ Small: 65x26/72x30mm.
4.2	Material: High grade fully stainless steel, corrosion resistance.
4.3	Maximum opening of blade 45 degrees (each).
4.4	Handle thickness approx. 2.5mm.
4.5	Workmanship: All surfaces shall be free from burrs, pits, cracks. Edges shall be smoothly rounded off & shall not be sharp.
4.6	It shall be autoclaveable/sterilizeable.
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 Climate, Temperature,Humidity, etc. for Sudan.
7	**Standards and Safety Requirements**
7.1	Must sub mit ISO 9001 or ISO13485:2003/AC:2007 for Medical Devices AND
7.2	CE (93/4 2 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	Warranty for 2 years after acceptance.

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.

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Spectrophotometer

No.	Item Specifications
1	**Description of Function**
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	**Operational Requirements**
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	**System Configuration**
3.1	UV-visible Spectrophotometer, Dual Beam with complete accessories.
4	**Technical Specifications**
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, %T, log Abs. units and concentration
4.19	Must Abscise 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	**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 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	**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	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	**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 from acceptance.
10	**Maintenance Service During Warranty Period**
10.1	During the warranty period supplier must ensure planned preventive maintenance (PPM) and 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 number and costing.
12.4	Certificate of calibration and inspection from factory.

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Sphygmomanometer

No.	Item Specifications
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	**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	Not applicable.
9	**Warranty**
9.1	Comprehensive warranty for 2 years from acceptance.
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.

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Stethoscope

No.	Item Specifications
1	**Description of Function**
1.1	The stethoscope is used for listening to the beating heart of a human, or the lungs. It is also used for listening to the flow of the blood in the surrounding area of the heart.
2	**Operational Requirements**
2.1	Dual type stethoscope - Physician's stethoscope.
3	**System Configuration**

3.1	□ Stethoscope, dual cup/bell
	□ Tubes
4	**Technical Specifications**
4.1	Dual, cup/bell and diaphragm head
4.2	Head and ear tube assembly to be made of non-ferrous metal,
4.3	Tubes to be synthetic material and ear tubes to have shaped plastic cushion ends.
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.
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 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

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Suction Machine

No.	Item Specifications
1	**Description of Function**
1.1	To extract fluid from the body during surgery or emergency treatment.

2	**Operational Requirements**
2.1	Shall operate on mains AC supply .
3	**System Configuration**
3.1	The system consists of:
	□ Suction machine with 2 Jar.
	□ Suction tubing.
	□ Two bottles.
4	**Technical Specifications**
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 oC, 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 autoclaveable.
4.7	On/Off Switch and power indicator must be available.
4.8	Shall provide foot switch.
4.9	**Body material:**
	Base, top & panel made of rust proof and corrosion resistant moulded ABS.
5	**Accessories, spares and consumables**
5.1	**Accessories:**
	□ Spare bottle: 02 nos.
	□ Lids: 02 nos.
	□ Rubber Seals: 02 nos.
	□ Blades: 02 nos.

	□ Suction tubing set at least 5 metres: 02 nos.
	□ Spare fuse: 01 set.
	□ 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.
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.
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 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	**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**
10.1	During warranty period supplier must ensure corrective/breakdown maintenance whenever required.
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.

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Auto CPAP

No.	Item Specifications
1	Should be an auto adjusting CPAP with pressures ranging from 4 to 20 cmH2O

2	Unit should be light weight (less than 1.5 Kg) and noise less than 30 dBA
3	The unit should have an automatic altitude setting.
4	The unit should have an Automatic mode & manual mode of selection.
5	Should have an Ramp Time Automatic of 5 - 45 minutes
6	Should have a backlit LCD display for easy viewing
7	Should be able to change the settings with easy to use rotary control dial
8	The unit should have comfort feature A-Flex which adjusts air pressure based on patient need on every inhalation & exhalation
9	Unit should have C-flex/C-Flex+ mode when unit is running as manual CPAP.
10	The unit should have System one resistance control for optimized pressure delivery, no matter which mask is used
11	Mask fit and seal monitoring should be capable to check the seal of the mask.
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.
13	Should have Memory for recording the usage & compliance data .
14	The unit should have 2 years warranty
15	CE or USFDA or TUV approved certificate.
16	MASK: Should be able to select between medium and small size.
17	Mask should be provided with angled exhalation micro ports.
18	Should have blue gel with silicon membrane to create an effective self adjustment seal.
19	The mask should have silicone spring facility to enable patient to move in any direction.
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.
21	Tubing connection to be at the top of the humidifier unit.
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.
23	Power supply: 220 – 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metre in length.
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**
10.1	During warranty period supplier must ensure corrective/breakdown maintenance whenever required.
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.

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Tongue Depressor (Box of 100 Pcs)

No.	Item Specifications
1	**Description of Function**
1.1	A tongue depressor is used to depress the tongue to allow for examination of the mouth and throat.
2	**Operational Requirements**
2.1	Tongue depressor, wooden disposable.
3	**System Configuration**
3.1	Tongue Depressor, disposable.
4	**Technical Specifications**
4.1	Wooden tongue depressor, with rounded extremities.
4.2	Size: approx. 16 x 140mm.
4.3	Thickness: approximately 2mm.
4.4	Single use.
4.5	sterile.
4.6	Packaging: Shall supply one box of 100 wooden tongue depressors.
5	**Accessories, spares and consumables**
5.1	Not applicable,.
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 sub mit ISO 9001 or ISO13485:2003/AC:2007 for Medical Devices AND
7.2	CE or U SFDA approved product certificate.
8	**Warranty**
8.1	Warranty for 2 years after acceptance.
9	**Maintenance Service during Warranty Period**
9.1	Standard warranty conditions are applicable.
10	**Installation and Commissioning**
10.1	Must supply preassembled unit, ready to use.

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Torch (Diagnostic Penlight)

No.	Item Specifications
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 sub mit ISO 9001 or ISO13485:2003/AC:2007 for Medical Devices AND
4.2	CE or U SFDA 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.

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Vaccination Carrier

No.	Item Specifications
1	**Description of Function**
1.1	Cold Box/Vaccine Carrier is essential for safe transportation of sensitive vaccines from the place of manufacturing to the place of field storage and final carriage to the place of immunization. Thus, CFC-free cold boxes/vaccine carrier ensure a pre-determined safe temperature range (-3 to + 8 0C) for a particular period known as cold life of the product. The cold life period varies according to the product classifications made by WHO i.e. for large equipment like cold boxes, the cold life is high whereas for small equipment like vaccine carriers the cold life requirement is less.
2	**Operational Requirements**
2.1	To carry vaccine, for small one-day immunization outreach sessions.
3	**System Configuration**
3.1	The system consists of:
	□ Vaccine Carrier-large
	□ CFC free, PUF insulation
4	**Technical Specifications**
4.1	Vaccine carrier:
	□ Vaccine storage capacity 2 litres
	□ Cold life 40 hours or more
4.2	Cold life without openings: 40 hrs. at +43°C.
4.3	Weight fully loaded must be less than 7kg.
4.4	Weight empty (with empty ice pack) must be less than 3kg.
4.5	External Surface Material: Polyethylene
4.6	Internal Lining Material: Polyethylene or Polystyrene
4.7	Insulation Material: Polyurethane
4.8	Insulation Thickness: 35mm or more

4.9	Lid type & fixings: Removable
4.1	Shall provide with one set of 0.3 or 0.4 litre or 0.6 litre ice packs.
5	**Accessories, spares and consumables**
5.1	Shall provide extra set of ice packs.
6	**Operating Environment**
6.1	Cold life minimum 40 hours at 43°C without openings.
7	**Standards and Safety Requirements**
7.1	Shall meet UNICEF/WHO Standard E4/VC2.
	Bidder shall provide the WHO PQS report.
7.2	The system shall be tested as per WHO Standard Test procedures as per E4/PROC/1.
8	**User Training**
8.1	Not applicable.
9	**Warranty**
9.1	Warranty for 2 years after acceptance.
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	Manufacturer's certification of compliance of test procedures as per WHO Standards Test Procedures.
12.2	Inspection Certificate from manufacturer to be complying with WHO specification as specified above.
12.3	Manual(s):
	Manual(s) with clear descriptions for users. The manual(s) shall be provided in the English language.
12.4	Packing:
	Labels bearing handling instructions shall be highly visible and printed clearly on the outer packing.

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X-Ray Viewing Box - Single

No.	Item Specifications
1	**Description of Function**
1.1	View box used for viewing the images of X-ray, CT/MRI at healthcare facilities.

2	**Operational Requirements**
2.1	Single film LED view box, operates on mains electric supply.
3	**System Configuration**
3.1	LED View Box (Single Film), complete unit.
	□ Vaccine Carrier-large
	□ CFC free, PUF insulation
4	**Technical Specifications**
4.1	Ultra slim design.
4.2	LED backlit and shall have separate on/off function with separate rotary continuous adjustable brightness control at the bottom of panel for convenient operation.
4.3	It shall have fully electronic continuous brightness control with adjustment range approx. up to 90%.
4.4	Shall have no lag period in intensity modulation.
4.5	Front sheet shall be made of polycarbonate or acrylic with antiglare.
4.6	Shall have sturdy film clamping mechanism with automatic sensor induced on/off system.
4.7	Illumination: High bright white LEDs.
4.8	It shall have homogeneous illumination and shall have luminance of more than 1200 cd/m2.
4.9	LED light source shall have at least 20000 hours of operation.
4.1	Shall be able to hold one full large size CT/MR films at a time with film has maximum size of 43cmX 35cm.
5	**System Configuration 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.
6	**Operating Environment**
6.1	The product offered shall be designed to be stored and to operate normally under 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 ISO 9001 or ISO 13485:2003/AC:2007 AND
7.2	CE or USFDA approved product certificate.
8	**User Training**

8.1	Not applicable.
9	**Warranty**
9.1	Warranty for 2 years after acceptance.
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 (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.

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Solar Vaccine Refrigerator

No.	Item Specifications
1	**Description of Function**
1.1	This equipment is used primarily in areas without any electricity or where there is less than 8 hours of reliable electricity over a typical day.
2	**Operational Requirements**
2.1	The battery solar powered refrigerator and freezer will work during the day directly from the solar panel, while during nights operating from storage battery.
3	**System Configuration**
3.1	The system consists of :
	□ Solar PV Panels.
	□ Components for mounting the PV system.
	□ Earth Connection.
4	**Technical Specifications**
	□ Battery & Charge Regulators.
	□ Combined chest type Ice-lined Vaccine Refrigerator and Freezer.
4	**Technical Specifications**
I	**Solar PV Panels**

4.1	Technology:
	Based on Polycrystalline silicon solar cells.
4.2	Power Rating:
	□ 500 to 540 Watt peak.
	□ In modules of 100 to 135 Wp.
	Solar Array Peak Power, in combination with the supplied battery capacity, must be guaranteed to power the refrigerator and freezer reliably during the months of minimal solar radiation and the months of maximum temperature respectively.
4.3	Panel Surface:
	Panels to be covered by anti-reflecting glass.
4.4	Panel frame:
	Aluminium with stainless steel/bronze screws for fixing.
II	**Components for mounting the PV system**
4.5	Panel Mounting Support Structure:
	Metallic frame preferably slotted anodized aluminium or stainless steel or steel angles with stainless steel screws and self-locking washers for mounting the solar panel on the rooftop or ground. Frame must allow adjustment to incline the panels towards the sun‘s path during mounting. Array cables must be weather shielded in case of rooftop installations or of direct burial type, in case of ground installations.
4.6	Array structures shall be designed to withstand loads of more than 200 Kg/m2 and shall be supplied with fixings for either ground or rooves mounting. Protection against the effect of lightning will be provided to protect the battery charge regulator and other components.
4.7	Electrical Mounting Accessories:
	Electrical cables sufficient (16 to 20 meters long or as per requirements) to carry the panel currents to the system and battery without loss.
	Additional cables for connecting the Charge regulator to system and battery.
4.8	Earth Connection:
	One complete earth connection kit.
4.9	Quality Standard:
	Must comply with WHO/UNICEF E3/ PV01.
4.10	Protection against theft:

	Must have provision to anti-theft mechanism.
III	**Battery & Charge Regulators**
4.11	Type of Battery:
	Maintenance free Sealed or Flooded / Gel or Tubular Lead Acid type - Deep discharge, and shall have low self-discharge.
4.12	Total Battery Capacity:
	280 Ah X 4 batteries or (420-500) Ah X 2 batteries of 6 Volt.
4.13	Autonomy on fully charged battery:
	Minimum 5 days without sun (autonomous days) to run the refrigerator (without icepack freezing) under the prevailing temperature conditions.
4.14	Battery set housing:
	Plastic box with locking facility.
4.15	Miscellaneous Additional cables, plugs, connectors, fuses and other materials for complete mounting of system.
	Battery safety kit equipment for protection of eye, hand, clothing etc.
4.16	Charge regulator/ controller:
	Charge controller, as recommended 6V, 30A with LCD display of parameters like battery voltage, array amps status, load amps draw and system performance.
	Lightning surge protection shall be provided.
	They must be precisely set to meet the charge and temperature requirements of the selected battery They shall disconnect the load when the battery has reached a state of charge which can be repeated a minimum of 1000 cycles.
	The battery charge regulator must meet the WHO designed specifications and Bidders shall submit the documentary evidence of compliance
IV	**Combined chest type Ice-lined Vaccine Refrigerator and Freezer:**
4.17	Capacity:
	Refrigerator:
	□ Net: 30 to 45 litres.
	□ Gross: 75 to 85 litres.
	Freezer:

	□ Net: 20 to 25litres.
	□ Gross: 30 to 40 litres.
4.18	Temperature Control / Holdover Time:
	The refrigerator shall without energy and without being opened hold a temperature in the range of +2 oC to +8oC for a period as per WHO PQS requirements and preferably higher hours in a continuous external temperature of +43 oC.
	Bidder shall provide details of holdover time of their product.
4.19	Refrigerants:
	The refrigerators& freezer shall utilize CFC (chlorofluorocarbon) free refrigerants preferably R134A.
4.2	Insulation:
	Minimum 100 mm polyurethane foam.
4.21	Corrosion Resistance:
	Internal and external cabinet, lid and frame shall be protected against corrosion to DIN 8985.
5	**Accessories, spares and consumables**
5.1	Accessories:
	□ Lock with key or combination lock on door.
	□ External reading thermometer.
	□ Vaccine storage baskets.
	□ Icepack storage baskets.
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	Must be suitable for hot zones, up to 43 0C.
7	**Standards and Safety Requirements**
7.1	Must submit ISO 9001 or ISO13485:2003/AC:2007 AND
7.2	Shall meet UNICEF/WHO standard E003 preferably WHO PQS certified product.
8	**User Training**
8.1	Must provide user training (including how to use and maintain the equipment).
9	**Warranty**

9.1	The minimum period of the comprehensive warranty shall be 10 years for the solar array, 5 years for the batteries and 2 years for the other components after acceptance.
10	**Maintenance Service During Warranty Period**
10.1	During the warranty period supplier must ensure preventive maintenance along with 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.