Medical Equipment - Technical Specifications

1 **ICU Ventilator**

Manufacturer: **Origin:** **Model:**

No.	Item Specifications	Compliance	Fill your Specifications
1	**Description of Function**		
1.1	ICU ventilator provides artificial respiratory support to the critical patients in the intensive care units.		
2	**Operational Requirements**		
2.1	Microprocessor Controlled ventilator with integrated facility for ventilation monitoring suitable for pediatric to adult ventilation.		
3	**System Configurations**		
3.1	ICU Ventilator for Pediatric to Adult, complete unit with air compressor or Internal Turbine and all standard accessories.		
4	**Technical Specifications**		
4.1	Imported hinged arm holder for holding the circuit.		
4.2	Colour TFT screen, 12 Inch or more.		
4.3	Facility to measure and display:		
	3 Waves: Pressure & Time, Volume & Time and Flow & Time.		
	3 Loops: P-V, F-V, P-F with facility of saving of 3 loops for reference.		
	Graphic display to have automatic scaling facility for waves.		
	Status indicator for ventilator mode, battery life, patient data, alarm settings, clock etc.		
4.4	Trending facility for 72 hours with minimum 5 minutes resolution for recent 24 hours.		
4.5	Automatic compliance & leakage compensation for circuit and ET tube.		
4.6	**Must have following settings :**		
	Tidal Volume up to 2000ml.		
	Pressure (insp.).		
	Pressure Ramp.		
	Flow Pattern.		
	Respiratory rate up to 100 breaths per minute.		
	SIMV Respiratory Rate up to 40 breaths per minute.		
	CPAP/PEEP: PEEP 50cmH2O.		
	Pressure Support.		
	FIO2.		
	Pause Time.		
	Pressure & Flow Trigger: Pressure Trigger 0-20 cmH2O below PEEP, Trigger Flow 0-100%.		
	Inspiratory rise time:-0-20% of breath cycle time.		
	I:E Ratio: 1:10 to 4:1		
4.7	**Monitoring of the following parameters:**		
	Airway Pressure (Peak & Mean).		
	Tidal volume (Inspired & Expired).		
	Minute volume (Inspired and Expired).		
	Spontaneous Minute Volume.		
	Total frequency.		
	FIO2 dynamic.		
	Intrinsic PEEP and PEEPi volume.		
	Plateau pressure.		
	Resistance & Compliance.		
	Use selector alarms for all measured & monitored parameters.		
4.8	**Modes of ventilation:**		
	Volume controlled.		
	Pressure controlled.		
	Pressure support.		
	SIMV (pressure control and volume control) with pressure support.		
	CPAP/PEEP.		
	Inverse ratio ventilation.		
	Advanced mode like pressure controlled volume guaranteed.		
	Non Invasive ventilation.		
	APRV or equivalent.		
	PRVC or equivalent.		
4.9	Shall have apnoea /backup ventilation		
4.10	Expiratory block must be autoclaveable and no routine calibration is required.		
4.11	Shall have the ability to calculate / procedure:		
	Intrinsic PEEP & Intrinsic PEEP Volume.		
	Occlusion Pressure.		
	Spontaneous breathing trial.		

	⍰ Facility to calculate lower and upper inflection point.		
4.12	Nebulizer with capability to deliver particle size of < 3 micron & to be used in both Off and On line		
4.13	Shall have automatic patient detection facility.		
4.14	**Medical Air Compressor or Turbine**		
	⍰ Imported standalone medical air compressor or internal Turbine.		
	⍰ Snap fit with the ventilator module to provide an oil free medical air for compressor.		
	⍰ Peak output flow shall 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.		
4.15	**Reusable Face Mask & Nasal Mask:**		
	⍰ Reusable face & nasal mask with textured dual flap silicone cushion flap for easy fit.		
	⍰ Removable forehead support and pad to match the angle of patient's forehead.		
	⍰ Stability selector for easy fit and angle.		
	⍰ Ball & Socket headgear attachments.		
	⍰ Must be autoclaveable.		
4.16	Shall have battery backup for minimum 1 hour.		
4.17	RS 232C interface for communications with networked devices.		
5	**Accessories, spares and consumables**		
5.1	Adult and Paediatric reusable, autoclaveable silicon breathing circuits: 02 set each		
5.2	Reusable Masks (Small, Medium, and Large): 02 set each.		
5.3	Connecting hose with regulator/ flow meter or probe for connection to Pin index oxygen cylinder and BOC type oxygen wall outlet, 3 meter length: 01 set.		
5.4	Humidifier: Servo controlled with digital monitoring of inspired gas temperature complete with heating wire: 01 no.		
5.5	Filter paper for humidifier for 100 uses.		
5.6	O2 cell with O-ring.		
5.7	Silicone test lung adult and child size: 01 set each		
5.8	Nipple connector 15-10 mm.		
5.9	Flow sensors: 05 nos.		
5.10	Inspiration bacterial filter, able to filter 99.97% of all 0.3 microns particles: 05 nos.		
5.11	Expiration bacterial filter, able to filter 99.97% of all 0.3 microns particles: 05 nos.		
5.12	Non corrosive imported trolley with wheels & brakes and hinged arm: 01 no.		
5.13	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.		
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 preventive maintenance and 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.		

2 **Oxygen Cylinder Regulator**

Manufacturer: **Origin:** **Model:**

No.	Item Specifications	Compliance	Fill your Specifications
1	**Operational Requirements**		
1.1	Regulator for Oxygen cylinder		
1.2	Fixed Pressure Type.		
1.3	Suitable for Anesthesia and Ventilator machine		
1.4	British Standard		
2	**Operating Environment**		

2.1	The product offered shall be designed to be stored and to operate normally under the conditions of Sudan. The conditions include Climate, Temperature, Humidity, etc.		
3	**Standards and Safety Requirements**		
3.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND		
3.2	CE (93/42 EEC Directives) or USFDA approved product certificate.		
4	**User Training**		
4.1	Must provide user training (including how to use and maintain the equipment).		
5	**Warranty**		
5.1	Comprehensive warranty for 2 years after acceptance.		
6	**Documentation**		
6.1	User (Operating) manual in English.		
6.2	Service (Technical / Maintenance) manual in English.		

3 **Portable Ventilator**

Manufacturer: **Origin:** **Model:**

No.	Item Specifications	Compliance	Fill your Specifications
1	**Description of Function**		
1.1	Unit to be used for adult, child and infant ventilation during cardiopulmonary resuscitation and for ventilation during transportation when necessary.		
2	**Operational Requirements**		
2.1	To have frequency control 4 to 100 breaths per minute,		
2.2	Tidal volume control 20 - 1500 ml,		
2.3	Inflation pressure monitor 0 to 100 cm H2O,		
2.4	Air mix control zero to 70% air mixture,		
2.5	Adjustable relief pressure with audible alarm 20 to 80 cm H2O		
2.6	Add on PEEP facility 0 to 10 or 20 cm H2O.		
2.7	To be supplied with a sling to enable the user to carry the unit easily and a patient circuit 1.25m		
2.8	long 15mm single bore silicone hose		
2.9	Autoclavable		
2.10	With built in cpmpressor / turbine		
3	**Operating Environment**		
3.1	The product offered shall be designed to be stored and to operate normally under Power Supply, Climate, Temperature,Humidity, etc. for Sudan.		
3.2	Power supply: 220 – 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metre in length.		
4	**Standards and Safety Requirements**		
4.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND		
4.2	CE (93/42 EEC Directives) or USFDA or TUV approved product certificate.		
5	**User Training**		
5.1	Must provide user training (including how to use and maintain the equipment).		
6	**Warranty**		
6.1	Comprehensive warranty for 2 years after acceptance.		
7	**Maintenance Service During Warranty Period**		
7.1	During the warranty period supplier must ensure preventive maintenance and corrective/breakdown maintenance whenever required.		
8	**Documentation**		
8.1	User (Operating) manual in English.		
8.2	Service (Technical / Maintenance) manual in English.		
8.3	List of important spare parts and accessories with their part numbers and costing.		

4 **Auto CPAP**

Manufacturer: **Origin:** **Model:**

No.	Item Specifications	Compliance	Fill your Specifications
1	**Description of Functions**		
1.1	Should be an auto adjusting CPAP with pressures ranging from 4 to 20 cmH2O		
1.2	Unit should be light weight (less than 1.5 Kg) and noise less than 30 dBA		
1.3	The unit should have an automatic altitude setting.		
1.4	The unit should have an Automatic mode & manual mode of selection.		
1.5	Should have an Ramp Time Automatic of 5 - 45 minutes		
1.6	Should have a backlit LCD display for easy viewing		
1.7	Should be able to change the settings with easy to use rotary control dial		
1.8	The unit should have comfort feature A-Flex which adjusts air pressure based on patient need on every inhalation & exhalation		
1.9	Unit should have C-flex/C-Flex+ mode when unit is running as manual CPAP.		
1.10	The unit should have System one resistance control for optimized pressure delivery, no matter which mask is used		
1.11	Mask fit and seal monitoring should be capable to check the seal of the mask.		

1.12	Should have advanced event detection algorithm which detects and records CA, OA,CSR, RERA, Hypopnea, Vibratory snore, Large leak & Flow limitation for helping the physicians in opting for alternate therapy.		
1.13	Should have Memory for recording the usage & compliance data .		
1.14	The unit should have 2 years warranty		
1.15	CE or USFDA or TUV approved certificate.		
1.16	MASK: Should be able to select between medium and small size.		
1.17	Mask should be provided with angled exhalation micro ports.		
1.18	Should have blue gel with silicon membrane to create an effective self adjustment seal.		
1.19	The mask should have silicone spring facility to enable patient to move in any direction.		
1.20	HUMIDIFIER also should be supplied along with the System and should be of dry box technology such that it takes the room humidity into account while humidifying.		
1.21	Tubing connection to be at the top of the humidifier unit.		
1.22	Should have sensors both inside and outside the machine to allow it to accurately make changes in humidity and prevent condensation from forming inside the tube.		
1.23	Power supply: 220 – 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metre in length.		
2	**User Training**		
2.1	Must provide user training (including how to use and maintain the equipment).		
3	**Warranty**		
3.1	Comprehensive warranty for 2 years after acceptance.		
4	**Maintenance Service During Warranty Period**		
4.1	During warranty period supplier must ensure corrective/breakdown maintenance whenever required.		
5	**Documentation**		
5.1	User (Operating) manual in English.		
5.2	Service (Technical / Maintenance) manual in English.		
5.3	List of important spare parts and accessories with their part numbers and costing.		

5 **BIPAP (Bi-level Positive Airway Pressure)**

Manufacturer: **Origin:** **Model:**

No.	Item Specifications	Compliance	Fill your Specifications
1	**Description of Function**		
1.1	BIPAP stands for Bi-level Positive Airway Pressure. It is a breathing apparatus that helps people get more air into their lungs.		
2	**Operational Requirements**		
2.1	Integrated display screen shall display easy-to-read real time graphics in waveform or bar scale format the measured and calculated parameters.		
3	**System Configuration**		
3.1	BIPAP (Bi-level Positive Airway Pressure), complete unit with all standard accessories.		
4	**Technical Specifications**		
4.1	Machine shall be based on the solenoid valve technology and shall offer preferably auto track sensitivity and adjustable rise time.		
4.2	IPAP: approx. 4 to 30cmH2O.		
4.3	EPAP: approx. 4 to 25cmH2O.		
4.4	Breath rate: approx.0 to 30BPM with spontaneous for time mode.		
4.5	Timed inspiration: approx. 0.5 to 3.0s.		
4.6	Rise time: approx. 100 to 600ms.		
4.7	Shall have facility for upgrades.		
5	**Accessories, spares and consumables**		
5.1	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer. Bidders must specify the quantity of every item included in their offer (including items not specified above).		
6	**Operating Environment**		
6.1	The product offered shall be designed to be stored and to operate normally under the conditions of Sudan. The conditions include Power Supply, Climate, Temperature, Humidity, etc.		
6.2	Power supply: 220 – 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metre in length.		
7	**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 warranty period supplier must ensure corrective/breakdown maintenance whenever required.		
11	**Installation and Commissioning**		

11.1	Supplier must accomplish proper commissioning of equipment 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 numbers and costing.		

6 **Oxygen Concentrator**

Manufacturer: **Origin:** **Model:**

No.	Item Specifications	Compliance	Fill your 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.		
4.10	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.		

7 **Patient Monitor**

Manufacturer: **Origin:** **Model:**

No.	Item Specifications	Compliance	Fill your Specifications
1	**Description of Function**		
1.1	NIBP/Vital Sign Monitor is used to continuously monitor the vital parameters including NIBP of critically ill patients.		
2	**Operational Requirements**		
2.1	Capability of storage of patient data and printing of patient reports.		
2.2	Capability to integrate with the HIS and transfer the data through LAN / Wireless LAN to any other monitoring room / doctor's desk. Must be HL-7 compatible for transmitting and receiving data to/from LAN/HIS		
3	**System Configuration**		
3.1	NIBP/Vital Signs Monitor with complete accessories.		
4	**Technical Specifications**		
4.1	Monitoring parameters;- ECG, respiration,NIBP,SPO2 and temperature		
4.2	Digital and 6 waves / traces display on minimum 9 inches TFT/LCD Display Screen.		
4.3	Monitor must have audible and visual alarms capability. Alarms must have three distinct audible alarm tones to distinguish alarm levels as under. Also monitor must permit automatic viewing of alarming parameter waveform and numeric from any bedside in alarm as and when connected in a network.		
4.4	Must include hemodynamic calculations and vital sign and graphic trends. Trends must be automatically stored for at least 24 hours in at least one minute intervals.		
4.5	Numeric monitored data shall be viewable and recordable in a patient chart type format in at least 1, 5, 15, 60 minutes intervals.		
4.6	Convenient handle for carrying the same		
4.7	Able to fix with bed/trolley.		
4.8	Inbuilt rechargeable battery for minimum 3 hours of operation.		
5	**Accessories, spares and consumables**		
5.1	**Accessories:**		
	Patient cable -01 no.		
	Adult Cuff – 01 no.		
	Paediatric Cuff -01 no.		
	Adult Probe SPO2 -02 nos.		
	Paediatric Probe SPO2 -02 nos.		
	Skin Temp Probe -02 nos.		
	Wall Mount or Trolley -01 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	Shall meet IEC-60601-1-2:2001 General Requirements of Safety for Electromagnetic Compatibility or must comply with 89/366/EEC; EMC directive.		
7.4	Shall meet the safety requirements as per IEC 60601-2-27:1994—Medical electrical equipment—Part 2: Particular requirements for the safety of electrocardiographic monitoring equipment.		
8	**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	**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.		

8 **Defibrillator**

Manufacturer: **Origin:** **Model:**

No.	Item Specifications	Compliance	Fill your Specifications
1	**Description of Functions**		
1.1	To be used in emergency & critical care departments to meets various resuscitation and monitoring needs.		
2	**Operational Requirements**		
2.1	It shall operate on AC power supply and internal battery.		
3	**System Configurations**		
3.1	Defibrillator with complete accessories.		
4	**Technical Specifications**		
4.1	**Defibrillation function:**		
4.2	It shall be a manual defibrillator for external defibrillation		
4.3	Able to perform synchronized defibrillation and non-invasive pacing therapy.		
4.4	Defibrillation energy selection:		
4.5	External monophasic: 50 - 360J		
4.6	External biphasic: 50 - 200J		
4.7	External Paediatric /neonatal: 2 - 20J		
4.8	System shall be user friendly, lightweight and easily transportable.		
4.9	Waveform shape: biphasic.		
4.10	The defibrillator paddles shall be easily interchangeable among adult, child, infant and internal paddles. It shall come with at least adult and paediatric paddles.		
4.11	Can be used for neonatal/paediatric and adult defibrillation.		
4.12	The unit shall be able to perform defibrillation and monitoring by using disposable electrodes.		
4.13	Shall have an electrode contact-quality indicator to minimize the risk of ineffective defibrillation.		
4.14	Recharge time shall not be held longer than 10 seconds before discharge.		
4.15	Energy charge & discharge and other selection/control buttons shall be available at the paddle handles.		
4.16	**ECG monitoring function:**		
4.17	Shall have a 3-leads ECG, Lead I, II & III, monitoring capability protected from defibrillation by mean of ECG electrodes and through-the-paddles monitoring		
4.18	With heart rate display and alarms		
4.19	With Lead-fault indicator		
4.20	Shall have an integrated thermal printer/ recorder with paper speed of 25mm/sec		
4.21	**General function:**		
4.22	Shall have LCD that displaying at least dual ECG channel, HR, battery status, shock indicator and various data. Bidder to specify size of LCD screen and the no. of waveforms which can be displayed.		
4.23	Shall have audio and visual alarms. (Please indicate in the next column type of alarms available)		
4.24	Shall have HR limit and shockable rhythms alarms		
4.25	Shall have a rechargeable battery when it is fully charged it shall deliver approximately 40 - 50 discharges or 2 hours of continuous ECG monitoring. Bidder to specify the type of battery used and number of discharge and monitoring hour.		
4.26	Must have an electrode contact-quality indicator to minimize the risk of ineffective defibrillation.		
4.27	The unit shall be portable and come with a carrying bag able to keep all required accessories and consumables.		
4.28	Please indicate the weight in kilogram (KG) of the unit included all accessories and carrying case. It shall be within 8kg		
5	**Accessories, Spare Parts and Consumables**		
5.1	**Accessories:**		
	Rechargeable battery, 1 piece on the unit		
	Thermal paper x 2 rolls/sets		
	Power cord x 1 set		
	3 wire ECG cable x 1 set for ECG monitoring		
	Disposable ECG electrodes, 50 pieces		
	Carry Bag/case x 1 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 Power Supply, Climate, Temperature,Humidity, etc. for Sudan.		
6.2	Power supply: 220 – 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metres in length.		
7	**Standards & 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	Comply to AHA & ACLS requirements or equivalent		
7.4	Electrical safety conforms to standards for electrical safety IEC-60601-1 General Requirements and IEC-60601-2-25 Safety of Electrocardiograms.		
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.		
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.		

9 **Pulse Oximeter**

Manufacturer: **Origin:** **Model:**

No.	Item Specifications	Compliance	Fill your Specifications
1	**Description of Function**		
1.1	A pulse Oxymeter is a medical device that indirectly measures the amount of oxygen in a patient's blood (as opposed to measuring oxygen saturation directly through a blood sample) and changes in blood volume in the skin, producing a photoplethysmography.		
2	**Operational Requirements**		
2.1	Suitable for all types of patient range, adult, paediatric and infant and shall operate on AC mains as well as from internal rechargeable battery.		
3	**System Configuration**		
3.1	Pulse Oxymeter, complete unit with all standard accessories.		
4	**Technical Specifications**		
4.1	It shall be portable unit.		
4.2	Display- LCD, backlight illuminated.		
4.3	Parameters and waveform displayed- SpO2, pulse rate, system status, plethysmogram, menus for user settings.		
4.4	SPO2 range: 70-100 %.		
4.5	Accuracy of SPO2: 3%.		
4.6	Pulse rate range must be 30-240 bpm.		
4.7	Audio-visual alarms: High/low SpO2 and pulse rate, sensor off, sensor failure, low battery.		
4.8	Shall have alarm override facility.		
4.9	It must be suitable to operate in the presence of potentially flammable anaesthetic gases, and it shall not cause fire or explosion during operations.		
4.1	RS 232C interface for data communication.		
4.11	Shall have integrated printer.		
4.12	Inbuilt rechargeable battery and shall have battery back-up for at least 4 hours. Battery charger along with AC adaptor to be provided if integrated charger is not there.		
5	**Accessories, spares and consumables**		
5.1	**Accessories:**		
	Reusable adult SpO2 sensor with cable: 02 nos.		
	Reusable paediatric SpO2 sensors: 01 no.		
	Reusable infant SpO2 sensor: 01 no.		
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 preventive maintenance and 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.		

10 **Suction Machine**

Manufacturer: **Origin:** **Model:**

No.	Item Specifications	Compliance	Fill your 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 **I.V Stand**

Manufacturer: **Origin:** **Model:**

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

12 **Instrument Trolley**

Manufacturer: **Origin:** **Model:**

No.	Item Specifications	Compliance	Fill your 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.		

13 **Infrared Thermal detector**

Manufacturer: **Origin:** **Model:**

No.	Item Specifications	Compliance	Fill your Specifications
1	**Technical Specifications**		
1.1	Pistol design		
1.2	Backlit LCD display		
1.3	Measurement range 32.0°C to 42.5°C		
1.4	Alarm: Adjustable visual and audio alerts when temperature exceeds programmed limit		
1.5	Optimum measurement distance> 15cm		
1.6	Response: max 1 sec		
1.7	Memory: at least 20 readings		
1.8	Should operate from a rechargeable battery with at least 2 hrs. Operating time		
1.9	Must be supplied with a charger		
1.1	Must be supplied with a carrying case		
1.11	Must be supplied with user/instruction manual		
1.12	Should have FDA, CE, TUV, BIS or similar quality standard approved product.		
1.13	Accuracy +/- 1 Degree Celsius		
1.14	Infrared Type Equipped With Single Dot Laser Pointing System		
2	**Operating Environment**		

2.1	The product offered shall be designed to be stored and to operate normally under the conditions. The conditions include Climate, Temperature, Humidity, etc.		
3	**Warranty**		
3.1	Warranty for 2 year after acceptance.		

14 **Infusion Pump**

Manufacturer: **Origin:** **Model:**

No.	Item Specifications	Compliance	Fill your Specifications
1	**Description of Function**		
1.1	A microprocessor controlled infusion pump unit is needed to include but not limited to the following features:		
1.2	Flat hygienic touch screen.		
1.3	Syringe loading sensor – with KVO (keep vein open)		
1.4	Self calibrated, self diagnosis capability		
1.5	Volume range from 1 –999 ml/hr or better in 1 ml increment		
1.6	High accuracy rate< /- 2%		
1.7	Audio visual indicators		
1.8	Multi types A/V alarms to include occlusion, door open, low battery, empty, etc...		
1.9	Open system using standard IV lines		
1.10	Air in line/ fluid detector		
1.11	Built in rechargeable battery, at least two hours operation		
1.12	Clamp pole		
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.		
2.2	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.		
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 preventive maintenance and 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.		

15 **Syringe Pump**

Manufacturer: **Origin:** **Model:**

No.	Item Specifications	Compliance	Fill your Specifications
1	**Description of Function**		
1.1	The Syringe Infusion Pump provides uniform flow of fluid by precisely driving the plunger of a syringe down its barrel. It provides accurate and continuous flow rate for precise delivery of I.V. medication in critical medical care.		
2	**Operational Requirements**		
2.1	The syringe pump must be programmable, user friendly, safe to use and must have battery backup and comprehensive alarm system. This must be able to integrate in the HIS.		
3	**System Configuration**		
3.1	Syringe infusion pump with battery backup alarm and with complete accessories.		
4	**Technical Specifications**		
4.1	Flow rate programmable from 0.1 to 200 ml/hr. or more in steps of 0.1 ml/hr. with user selectable flow set rate option. SAVE last infusion rate even when the AC power is switched OFF.		
4.2	Bolus rate must be programmable to 400 – 500 ml/hr. or more with infused volume display. Reminder audio after every 0.5 ml delivered bolus. SAVE last Bolus rate even when the AC power is switched OFF.		
4.3	Display of Drug Name with a provision of memorizing 10~15 names by the operator		
4.4	Keep Vein Open (KVO) must be available 1.0 ml/hr. or set rate if lower than 1.0 ml. User must have choice to disable KVO whenever desired.		
4.5	Selectable Occlusion pressure trigger levels selectable from 300/500/900 mmHg		
4.6	Must Work on commonly available 20, 50/60 ml Syringes with accuracy of minimum of +/-2% or better.		
4.7	Automatic detection of syringe size & proper fixing. Must provide alarm for wrong loading of syringe such as flanges out of slot; disengaged plunger, unsecured barrel etc.		
4.8	Anti-bolus system to reduce pressure on sudden release of occlusion		

4.9	Must have comprehensive alarm package including: Occlusion limit exceed alarm ,Near end of infusion pre-alarm & alarm, Volume limit pre-alarm & alarm, KVO rate flow, Low battery pre-alarm and alarm, AC power failure, Drive disengaged and preventive maintenance.		
4.10	Rechargeable Battery having at least 5~6 hour backup for about 5ml/hr. flow rate with 50ml syringes. Larger battery life and indication of residual life will be preferred.		
5	**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.		
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	Certified for meting IEC60601-2-24:Particular requirements for the safety of infusion pumps and controllers		
7.4	Must meet IEC 529 Level 3 (IP3X) (spraying water) for enclosure protection, water ingress.		
8	**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 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.		

16 **Mobile Digital X-ray**

Manufacturer: **Origin:** **Model:**

No.	Item Specifications	Compliance	Fill your Specifications
1	**Description of Function**		
	Compact, easily transportable, digital mobile radiographic unit with articulated/telescopic arm, suitable for bedside X-Ray for ward patients, intensive care units and operation theatres.		
2	**Operational Requirements**		
	The unit should be a digital system with flat panel detector and must include the following:		
	Power line connection :		
	The unit should operate in single- phase power supply and should have overload protection. Plug in facility to any standard will outlet with automatic adaptation to line voltage 200 to 240 Volts 1.5 Amp plug.		
	Ergonomics:		
	The unit should have small foot print. The height of the column stand should not be more than 150cm for easy transportation in the lift etc. And areas with small height doors. The Equipment should be light weight, not more than 160 kg. It must have an articulated or telescopic arm for maximum positioning flexibility in any patient position.		
	The cables should be concealed in the arm system. The exposure release switch should be detachable with a cord of at least 5 meters. Extractable measurable tape should be available.		
	The Generator:		
	Must be microprocessor controlled high frequency.		
	Output 30 KW or more at Nominal power Rating.		
	Display it should have a digital display of mAs and KV and an electronic timer.		
	KV range: 40 KV to 125 KV or more		
	Max. Current : 400 mA or more		
	mAs it should be capable of delivering up to 300 mAs in different steps		
	Shortest exposure time: Should be 1 ms or less.		
	X-ray Tube:		
	Output should match the output of the generator		
	It must have a rotating anode with at least 3000rpm or more.		
	It should have dual focus. Large Focus: 1.3 mm and small Focus 0.6 mm or better		
	Anode heat storage capacity should be more than 100KHU.		
	Multi-leaf collimation rotatable+/-90 degrees with off/on timer should be supplied with the system.		
	Flat panel detector		
	The flat panel detector should be of the size 14 x17 inch or more.		
	Detector should have DQE of 65% at 0 lp/s or more.		

	The Detector pixel matrix should be 2k x 2k or more.		
	Pixel size/pitch should be 160µm or less.		
	The machine should have a detector storage compartment.		
	The image viewing time after exposure should not be more than 5 sec.		
	Weight of the detector should not be > 5 kg.		
	The Detector should be designed and calibrated for General Radiography Purposes and must be fully integrated with the mobile unit including the controls.		
	The Detector should have a long chord to easily reach the patient for bedside x-rays		
	Battery:		
	The machine should be able to run on mains as well as on battery supply.		
	Please specify number of exposures which can be done on battery		
	The battery should also provide power for the motor to move the machine.		
	The battery should be able to be charged from a normal 15A, 220-240V single phase socket in less than 6 hours		
	Inbuilt Console:		
	The machine should have an integrated/inbuilt console with a TFT touch screen		
	The console should enable to view the image, and provide post processing features, using touch screen.		
	The post processing features should include zoom, contrast and brightness, adjustment, panning annotate, mark and reporting.		
	Storage of image with a memory of at least 3000 images.		
	The touch screen size should be 15 inches or more.		
	Connectivity:		
	The machine should be fully network ready and it should be possible to transfer images and patient data from and to hospital network using LAN connectivity or wireless LAN.		
	Accessories:		
	grid of 10:1 ratio of appropriate size preferably 17"x17"should be supplied		
	Breaking System:		
	The Unit should have effective breaking system for parking		
2	**User Training:**		
2.1	The Supplier shall conduct user training for this equipment to enable operators to use the equipment properly. The training shall include the use of all operational functions of the equipment, as well as routine checks and maintenance expected by users.		
3	**Warranty**		
3.1	Comprehensive warranty for 2 years from acceptance.		
4	**Maintenance Service During Warranty Period**		
4.1	During warranty period supplier must ensure preventive maintenance & corrective/breakdown maintenance whenever required.		
5	**Installation and Commissioning**		
5.1	The equipment to be installed by certified or qualified personnel; any prerequisites for installation to be communicated to the purchaser in advance, in detail.		
6	**Documentation**		
6.1	User (Operating) manual in English.		
6.2	Service (Technical / Maintenance) manual in English.		
6.3	List of important spare parts and accessories with their part numbers and costing.		

17 **Computed Radiography system (CR)**

Manufacturer: **Origin:** **Model:**

No.	Item Specifications	Compliance	Fill your Specifications
1	**Technical Specifications**		
	Specifications for State of the art Latest Generation Computed Radiography (CR) system for high resolution Digital radiography		
2	**Features**		
	Technical Requirements – CR system configuration shall include:		
	Imaging plates (IP)		
	Image reader system		
	CR workstations		
	RIS interface		
	Remote ID and Preview stations		
	Accessories and consumables		
	Laser Imager		
	CR Compatible imaging standard plates minimum 2 different sizes plates (mention the sizes)		
	Image reader shall meet the Functional requirements :		
	Various image – processing protocols available for the respective regions of body		
	IP processing rate should be 60 plates / hour.		
	Mechanism for Re-routing the newly acquired images to the preconfigured CR work station		
	Capability of retrieving (Service Intervention) at least last 10 scanned images, as part of contingency plan.		
	Capability for quick check of the image and exam data of at least the last 4 Imaging Plates		
	scanned at the X-ray room.		

	Protocol for verifying the connectivity status of configured image destinations.		
	Spatial resolution of the digital image shall preferably be 2k x 2k x 12 bits for optional resolution.		
	Identification and Preview		
3	**System Functional Requirements:**		
	a) Capability of interfacing to HL7, Proprietary, DICOM Work list or user defined Windows/Linux based interface protocols to HIS/RIS.		
	b) Please specify whether you have tested interfacing with HL7 – DICOM Bridge.		
	c) Mechanism for retrieving Demographics of at least last 10 patients identified on a particular Identification Terminal.		
	d) Customizable Graphic User Interface (GUI) in Identification station with facility of selecting DICOM print & storage destination.		
	e) Indication of Over Exposure on the preview module.		
	f) Mechanism for User release from Preview terminal in case of Auto - routing Images to Pre-defined DICOM Destinations.		
	g) Customizable Graphic User Interface (GUI) for Preview terminal.		
	h) Solution for storing patient demographic data for multiple exams in RIS/non RIS environment.		
	i) It should be possible to put a custom configurable data field in the demographic information of the patient linked with the image.		
4	System should include the following **Software applications:**		
	Please list all the optional software(s) which are available with you for enhancing the		
	workflow and service in the Digital Radiology environment for the following:		
	Advanced Processing Software		
	Application Software		
	Connecting Software		
	Visual Output Software		
	Quality Monitoring Software.		
	The system should include the following SW applications as standard:		
	Full Leg/Full spine image processing.		
	Quality control software		
	Software, which enables to see in the preview terminal the deviation from normal exposure and with the details of the deviation on the CR workstation.		
	Software masking of the collimation areas.		
	Special attention should be placed on pediatric applications.		
	Software for storing images on any DICOM 3 (or newer versions) compliant stations.		
	Software for printing on any DICOM printer		
5	**CR Workstation**		
	System configuration requirements:		
	Accept images from CR Reader without any loss of data		
	Capable of Archiving & Printing selected images to a standard DICOM destination.		
	Storing images in the local disk for pre-defined period.		
	Mechanism for accepting New images when the local disk is full		
	Should include min 21" antiglare flicker free TFT/LCD color monitor		
	Should include min 21" Monochrome antiglare flicker free Medical Grade TFT/LCD .		
	Monitor with at least 2k x 2k resolution		
	CD/DVD Burner		
	80 GB or more on board storage		
6	**System Functional requirements:**		
	Support DICOM work list or user defined Windows based interface to HIS/RIS.		
	Mechanism for retrieving Demographics of atleast last 10 patient identified on that Terminal.		
	Customizable Graphic User Interface with facility of selecting DICOM print & storage destination.		
	Indication of Over Exposure on the preview module.		
	Mechanism for User release in case of Auto-routing Images to Pre-defined DICOM Destinations.		
	Functional requirement for CR workstations:		
	Built in routine for using predefined image processing parameters for image quality enhancement.		
	Mechanism for storing the Patient image based on name, date, exam, etc.		
	Capability of storing user defined image processing parameters.		
	Capability of overwriting predefined image parameter with user-defined parameters & storing these two images separately.		
	Correcting typographically in Patient Demographic module, in case the RIS connection was down and annually data entry was done.		
	Capability of changing W/1, Flipping, Rotating, Zooming, Collimating Annotating incoming image.		
	Auto-routing incoming image to predefined DICOM Store (SCP storage) or Print Destination (SCP Print Destination)		
	Mechanism for printing Multiple Images in one film, with the possibility of slide and True Size printing.		
	Capability of storing to CD		
	Systems should be able to converse with other DICOM systems – such as MR work station / CT		
	workstation / DSA lab / DR work station.		
	Laser Imager System Configuration requirements: Print Images CR Workstation		
	Capable of Printing Images in DICOM 3.9 format		
	Mechanism to print images 14x17, 11x14, 8x10 film sizes simultaneously.		
	Resolution should be 500 dpi or more.		

	Capable of handling mammography plates.		
7	**Functional requirement for Laser Imager:**		
	a) Capable of Printing images in High quality		
	b) Mechanism for printing images in 14x17, 14x11, 10x8 film sizes.		
	c) Mechanism for Printing Multiple Images in one film, with the possibility of slide printing.		
	Laser Paper Printer (Optional)		
	Provision for Distributed CR System should be present. Please quote separately for additional		
	workstation image reader preview stations and image planes (Optional)		
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 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.		

18 **ECG Machine**

Manufacturer: **Origin:** **Model:**

No.	Item Specifications	Compliance	Fill your Specifications
1	**Description of Function**		
1.1	ECG Machine is primary equipment to record ECG Signal in various configurations.		
2	**Operational Requirements**		
2.1	Microprocessor controlled digital 3 channel ECG machine suitable for adult, paediatric and neonate applications.		
3	**System Configuration**		
3.1	3 channel ECG machine with complete accessories.		
4	**Technical Specifications**		
4.1	3 channel ECG machine with simultaneous acquisition of 12 standard leads: aVR, aVL, aVF, I, II, III and V1-6 pre-cordials.		
4.2	Internal memory for storage of up to 50 ECGs.		
4.3	Splash-resistant alphanumeric keyboard with function keys.		
4.4	With zeroing reset, auto-base-line correction (0.5Hz) and 1mV test/calibration signal.		
4.5	Filter setting for line-frequency (50 or 60Hz) and tremor.		
4.6	Continuous check on the quality of electrodes connection, audio visual alert on loss of signal.		
4.7	Appropriately protected for operation during defibrillation.		
4.8	Alphanumeric colour LCD display, approximately: 4".		
	Display shows ECG-curves, heart rate, patient name and ID, time, age, sex, speed and filter setting.		
4.9	ECG machine shall have 3 modes of operation – Automatic, Manual & Rhythm.		
4.10	Shall have measurements and analysis programs.		
4.11	Measurements: QRS rate, PR interval, QRS duration, QT/QTC, P/QRT/T axes, RV5/SV1.		
4.12	Shall have interpretation and waveform analysis.		
4.13	Shall have maintenance free digital thermal array printer.		
4.14	Printer shall be able to print ECG report and must have on/off selection.		
4.15	Shall have ECG lead annotation facility.		
4.16	Paper speed, user adjustable: 25 and 50mm/sec.		
4.17	CMRR shall be > 100dB.		
4.18	Sensitivity, automatic or user selectable: 5, 10 and 20mm/mV.		
4.19	Rechargeable battery & charger integrated in the device.		
4.20	Battery autonomy, approximately 2 hours.		
4.21	The unit shall be compact, light in weight, easy to carry.		
5	**Accessories, spares and consumables**		
5.1	**Accessories:**		
	Reusable Patient cable with reusable electrodes for adult & paediatric- 2 set.		
	Reusable patient cable with reusable electrodes for neonate & infant- 1 set.		
	Extremity clamp electrodes, reusable- 4 nos.		
	Recording paper rolls- 12 rolls		
	Bottles of electrode gel, approximately 350ml- 2 nos.		
	Spare rechargeable battery pack- 1 no.		

	⍰ Set of spare fuses- 1 set		
	⍰ Plastic protective dustcover- 1 no.		
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: 220–240V AC, 50Hz fitted with appropriate plug type D round 3 pins. 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 Requirements and IEC-60601-2-25 Safety of Electrocardiograms.		
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 preventive maintenance and 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.		

19 **ENT Diagnostic Set**

Manufacturer: **Origin:** **Model:**

No.	Item Specifications	Compliance	Fill your Specifications
1	Auroscope head with 3 standard specula, Nasal speculum, Laryngeal stem to take tongue depressor, Laryngeal or post nasal mirror		
2	Antrum sheath.		
3	Large handle and two spare lamps.		
4	Head Mirror		
5	All to be supplied complete in plastic covered case.		
6	**Operating Environment**		
6.1	The product offered shall be designed to be stored and to operate normally under Climate, Temperature,Humidity, etc. for Sudan.		
7	**Standards and Safety Requirements**		
7.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND		
7.2	CE (93/42 EEC Directives) or USFDA approved product certificate.		
8	**User Training**		
8.1	Must provide user training (including how to use and maintain the equipment).		
9	**Warranty**		
9.1	Comprehensive warranty for 2 years after acceptance.		

20 **Drug Trolley**

Manufacturer: **Origin:** **Model:**

No.	Item Specifications	Compliance	Fill your Specifications
1	**Frame work made of Stainless Steel/ABS. All SS components should be of 304 grade quality.**		
1.1	Side dust basket		
2	**Multiple drawers (minimum 6) with telescopic channels, below the platform**		
2.1	Minimum 6 small boxes to keep drugs at eye level.		
3	**Minimum one shelf to keep additional items.**		
3.1	Provided with atraumatic corner buffers & rails		
4	**Provision for hanging one IV fluid bottle.**		
4.1	Noiseless four castor wheels of minimum 3" dia., two wheels with brakes		
5	**Size: Approx 900 mm X 450 mm X 60 mm(HxWxL)**		
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.		

21 **ICU bed 5 movements with Mattress**

Manufacturer: **Origin:** **Model:**

No.	Item Specifications	Compliance	Fill your Specifications
1	**Description of Function**		
1.1	ICU Beds are required in the Intensive Care for comfort of the patient and to facilitate comfortable transfer to and fro emergency/OT/Wards etc. It is also required to carry out point of care procedures including radiological procedures at the bedside.		
2	**Operational Requirements**		
2.1	The system should be electrically operatable and adjustable for heights, trendelenburg etc.		
	It should also be having radiotransluscent top		
3	**System Configuration**		
3.1	Electrically and pneumatically operated ICU bed with mattress.		
4	**Technical Specifications**		
4.1	Should have four section mattress base		
4.2	Should have X-Ray translucent back section made up of high pressure laminate.		
4.3	Should have X-Ray cassette holder underneath the back section & should allow insertion of X-Ray cassette from either side of the bed.		
4.4	Base frame & support frame should be made up of steel for long life & prevention from rusting.		
4.5	**Should have step less electrical adjustment for the following :-**		
	Height : 450-840 mm		
	Back section : 0- 50 degrees		
	Leg Section : 0-30 degrees		
4.6	Should have step less pneumatic adjustment for Trendelenburg (25° approx.), antitrendelenburg (15° approx.)		
4.7	Should have a manual quick release mechanism for back section adjustment during emergency situation		
4.8	Should be equipped with four articulated half-length tuck away side rails		
4.9	Should be equipped with large castors (diameter 150 mm) with central braking and steering facility.		
4.10	Mattress of the Bed should be made up of high density foam with Anti-Microbial agent incorporated into all components that assists in Prohibiting growth of bacteria & fungi and easy to clean.		
4.11	Mattress should be fully Radiolucent for ease in performing portable X-Rays.		
4.12	Should have bumpers at all four corners and place for fixing accessories		
4.13	**Dimensions of bed (approx.) :**		
	Length : 2200 -2290 mm		
	Width : 850 -1020mm		
	Mattress Size : appropriate as per bed size		
5	**Accessories, spares and consumables**		
5.1	**Accessories:**		
	· ICU Bed Mainframe -01		
	· Bed Ends, detachable : 01 pair		
	· Articulated half-length tuck away side rails : 04 Nos.		
	· IV Rods: 01 No.		
	· Mattress 12 cm Thick : 01 No.		
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	Resettable overcurrent breaker shall be fitted for protection		
7	**Standards and Safety Requirements**		
7.1	The unit offered shall be certified to meeting the relevant quality and safety requirements of TUV, CE mark (MDD), USFDA, IEC,Radiation safety, safety of pressurised equipment and any other relevant quality and safety standards .		
7.2	Manufacturer must have ISO certification for quality standards.		
7.3	Certified to be compliant with IEC 60601-2-38 Medical Electrical Equipment part 2-38 Particular requirements for safety of Electrically Operated Hospital Beds.		
8	**User Training**		
8.1	On site operational training till the familiarity of the system and satisfaction of end user shall be provided.		
9	**Warranty**		
9.1	Comprehensive warranty for 2 years.		
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	Log book with instruction for daily, weekly, monthly and quarterly maintenance checklist.		

22 **Manual Patient Bed 2 Movements With Mattress**

Manufacturer: **Origin:** **Model:**

No.	Item Specifications	Compliance	Fill your 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 3 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	It shall mobile on 4 x 200mm robust swivelling castors with non-marking grey tyres and with at least 2 diagonal castors shall have locking/brake mechanism.		
4.7	Bedhead and foot-end panel (head and foot bows) shall be made of either between 4-6 anti-corrosive and 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.		

23

Bed Side Cabinet

Manufacturer: **Origin:** **Model:**

No.	Item Specifications	Compliance	Fill your Specifications
1	**Technical Specifications**		
1.1	Over all approx. size: 40 cms x 40 cms x 82 cms H.		
1.2	Body consisting of 2 sides and back, is made from one piece of 20 G ms CRCA sheet. Fitted with laminated top with raised edges on four sides and pressed with PVC foil.		
1.3	Drawer front and cabinet door also made from laminated material and pressed with PVC foil.		
1.4	PVC foil used is of scratch-resistant and UV-rays resistant of 400microns thick. One drawer 90mm H x 355 mm W x 380mmD approx fitted with very smooth slides, is provided below the top.		
1.5	Under the drawer is an open storage space and below it is a closed-door cabinet.		
1.6	Door of the cabinet box is pivoted at top and bottom. Base of the drawer is fitted with castors of wheel dia 50 mm, all without brake.		
1.7	Two buffers shall be provided at rear side of the locker box.		
1.8	All MS parts are passed through 8 tank Pre-treated & powder coated process. SS parts finished with Matt Polish.		
1.9	Bed Side Cabinet colour should match with Bed .		
2	**System Configuration Accessories, spares and consumables**		

2.1	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.		
3	**Operating Environment**		
3.1	The system offered shall be designed to store and to operate normally under the conditions. The conditions include Climate, Temperature, Humidity, etc.		
4	**Warranty**		
4.1	Warranty for 2 years.		

24 **Blood Gas Analyzer**

Manufacturer: **Origin:** **Model:**

No.	Item Specifications	Compliance	Fill your Specifications
1	**Technical Specifications**		
1.1	Automated analyzer		
1.2	Compact system for measuring pH, pCO2, pO2, -HCO3 in blood		
1.3	Fast and accurate result of test made available in about 60 seconds.		
1.4	May have provision of modular platform for further up gradation to include glucose, lactate & hemoglobin.		
1.5	Built in printer		
1.6	Barcode reader for reagents and other consumables, patient ID and quality control data		
1.7	Automatic aspiration from syringe or capillary Sample size: approximate 250ul – 50ul		
1.8	Easy-to follow computer assisted guidance for operator		
1.9	Sample type: whole blood, serum, plasma		
1.1	All parameters must be measured from a single sample		
1.11	Approximate time for analysis: around 2 minutes		
1.12	Automatic calibration, programmable 1 and 2 point calibration; in case of non-automatic calibration,		
1.13	Please provide the calibration kit.		
1.14	Data storage: approximate 500 patients		
1.15	Ambient temperature:18 - 30 °C		
1.16	Reagents and waste level detection by software		
1.17	Save mode		
1.18	**Measurable parameters (approximate measurable ranges):**		
	ph 6.5 - 7.8		
	pCO2 10 - I50 mmHg		
	pO2 10 - 700 mm Hg		
	Gluc 20 - 500 mg/dl or better		
	tHb 5 - 25 g/dL and/or Hct 15-60%		
	ctHb mmol/l 0.5 – 16.5		
	sO2 0 – 100%		
	fO2Hb 0 – 100%		
	fCOHb 0 – 100%		
	fMetHb 0 – 100%		
	fhHb 0 – 100% optionally		
1.19	**Calculated parameters (approximate calculated ranges):**		
	HCO3 0 - 100mmol/L		
	BE-30 - 30 mmol/L		
	tCO2 0 - 100mmol/L		
	pH(T) 6.5 - 7.8		
	RI 0-10		
	O2SAT 15-100%		
	Connection to PC at least RS 232		
	Self diagnosis system		
	No maintenance required for the electrodes		
1.2	**Consumables:**		
	Consumables fluids, gases and electrodes for 2 year (with a usage rate of min 10 tests/day)		
1.21	**sensor cards (box)**		
	Must submit ISO13485:2003/AC:2007 for Medical Devices ANDCE or US FDA approved product certificate.		
2	**Standards and Safety Requirements**		
2.1	Must submit ISO13485:2003/AC:2007 for Medical Devices AND		
2.2	CE (93/42 EEC Directives) or USFDA approved product certificate.		
2.3	Electrical safety conforms to standards for electrical safety IEC-60601-1 General Requirements and IEC-60601-2-25 Safety of Electrocardiograms.		
3	**User Training**		
3.1	Must provide user training (including how to use and maintain the equipment).		

4	**Warranty**		
4.1	Comprehensive warranty for 2 years after acceptance.		
5	**Maintenance Service During Warranty Period**		
5.1	During the warranty period supplier must ensure preventive maintenance and corrective/breakdown maintenance whenever required.		
6	**Documentation**		
6.1	User (Operating) manual in English.		
6.2	Service (Technical / Maintenance) manual in English.		
6.3	List of important spare parts and accessories with their part numbers and costing.		

25 **Consumables for ABG**

Manufacturer: **Origin:** **Model:**

No.	Item Specifications	Compliance	Fill your Specifications
1	**Technical Specifications**		
	Consumables fluids, gases and electrodes for Blood Gas Analyzer		

26 **Stretcher With Trolley (Patient Trolley)**

No.	Item Specifications		Fill your Specification
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.		

27 **Air Purification Machine**

Manufacturer: **Origin:** **Model:**

No.	Item Specifications	Compliance	Fill your Specifications
1	**Description of Function**		
1.1	for protection of patients, visitors and hospital staff in relation to the risk of infections spread through airborne contamination.		
2	**Technical Specifications**		
2.1	mobile for rapid		
2.2	cleaned by high particulate air filters		
2.3	HEPA / ULPA		
3	**Accessories, spares and consumables**		
3.1	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer.		
4	**Operating Environment**		
4.1	The product offered shall be designed to be stored and to operate normally under Power Supply, Climate, Temperature,Humidity, etc. for Sudan.		
4.2	Power supply: 220 – 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metre in length.		
4.3	Resettable overcurrent breaker shall be fitted for protection		
5	**User Training**		
5.1	On site operational training till the familiarity of the system and satisfaction of end user shall be provided.		
6	**Warranty**		
6.1	Comprehensive warranty for 2 years.		
7	**Maintenance Service During Warranty Period**		

7.1	During the warranty period supplier must ensure corrective/breakdown maintenance whenever required.		
8	**Documentation**		
8.1	User (Operating) manual in English		
8.2	Service (Technical / Maintenance) manual in English		
8.3	List of important spare parts and accessories with their part numbers and costing.		
8.4	Log book with instruction for daily, weekly, monthly and quarterly maintenance checklist.		

28 **Human Sanitization Chamber**

Manufacturer: **Origin:** **Model:**

No.	Item Specifications	Compliance	Fill your Specifications
1	**Description of Function**		
1.1	for effective against virus traces on the person's skin or clothing.		
2	**Technical Specifications**		
2.1	complete unit with all standard accessories.		
3	**Accessories, spares and consumables**		
3.1	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer.		
4	**Operating Environment**		
4.1	The product offered shall be designed to be stored and to operate normally under Power Supply, Climate, Temperature,Humidity, etc. for Sudan.		
4.2	Power supply: 220 – 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metre in length.		
4.3	Resettable overcurrent breaker shall be fitted for protection		
5	**User Training**		
5.1	On site operational training till the familiarity of the system and satisfaction of end user shall be provided.		
6	**Warranty**		
6.1	Comprehensive warranty for 2 years.		
7	**Maintenance Service During Warranty Period**		
7.1	During the warranty period supplier must ensure corrective/breakdown maintenance whenever required.		
8	**Documentation**		
8.1	User (Operating) manual in English		
8.2	Service (Technical / Maintenance) manual in English		
8.3	List of important spare parts and accessories with their part numbers and costing.		
8.4	Log book with instruction for daily, weekly, monthly and quarterly maintenance checklist.		

29 **Hydrogen Peroxide Sterlization Machine**

Manufacturer: **Origin:** **Model:**

No.	Item Specifications	Compliance	Fill your Specifications
1	**Description of Function**		
1.1	Hydrogen peroxide sterilization, also known as hydrogen peroxide gas sterilization, is a low temperature sterilization process commonly used to sterilize heat-sensitive devices. A hydrogen peroxide sterilization cycle typically requires less time than alternative forms of sterilization, such as ethylene oxide sterilization. A hydrogen peroxide sterilization process involves H2O2 vapor filling the sterilizer chamber, contacting and sterilizing exposed device surfaces.		
1.2	Once the sterilization cycle has completed, the vapor is vacuumed from the chamber and converted to water and oxygen.		
2	**Technical Specifications**		
2.1	complete unit with all standard accessories.		
3	**Accessories, spares and consumables**		
3.1	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer.		
4	**Operating Environment**		
4.1	The product offered shall be designed to be stored and to operate normally under Power Supply, Climate, Temperature,Humidity, etc. for Sudan.		
4.2	Power supply: 220 – 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metre in length.		
4.3	Resettable overcurrent breaker shall be fitted for protection		
5	**User Training**		
5.1	On site operational training till the familiarity of the system and satisfaction of end user shall be provided.		
6	**Warranty**		
6.1	Comprehensive warranty for 2 years.		
7	**Maintenance Service During Warranty Period**		
7.1	During the warranty period supplier must ensure corrective/breakdown maintenance whenever required.		
8	**Documentation**		
8.1	User (Operating) manual in English		
8.2	Service (Technical / Maintenance) manual in English		
8.3	List of important spare parts and accessories with their part numbers and costing.		

8.4	Log book with instruction for daily, weekly, monthly and quarterly maintenance checklist.		

30 **Disposable tubing and patient interfaces for Adult with Accessories For CPAP**

Manufacturer: **Origin:** **Model:**

No.	Item Specifications	Compliance	Fill your Specifications
1	**Technical Specifications**		
	Standard		

31 **Disposable tubing and patient interfaces for Adult with Accessories For BiPAP**

Manufacturer: **Origin:** **Model:**

No.	Item Specifications	Compliance	Fill your Specifications
1	**Technical Specifications**		
	Standard		

32 **Disposable tubing and patient interfaces for Adult with Accessories For Ventilator**

Manufacturer: **Origin:** **Model:**

No.	Item Specifications	Compliance	Fill your Specifications
1	**Technical Specifications**		
	Standard		

33 **Medical Oxygen cylinder**

Manufacturer: **Origin:** **Model:**

No.	Item Specifications	Compliance	Fill your Specifications
	Supply of Oxygen Bulk Cylinder		
1	The cylinder shall be fitted with valve & valve guard having following broad specifications:		
1.1	Capacity Minimum: 6 Cubic meter Gas capacity.		
1.2	46.7 liters Water capacity		
1.3	Minimum Wall thickness = 5.2 mm.		
1.4	Working pressure at 15°C = 150 kgf/cm².		
1.5	Test pressure = 250 kgf/cm².		
1.6	Nominal Tare Weight = 51.00 kg with Necking.		
1.7	Neck Threading: Standard		
1.8	Purity: ≥ 99%		