LOT 6 - CRITICAL CARE

S/No.	LOT NO.	EXPECTED EQUIPMENT	QTY	Estimated Units Price	Estimated Total Price
		CRITICAL CARE UNIT (BED REQUIREMENT)			
1.	9-1	Patient monitor	10		
2.	9-2	Ventilators	12		
3.	9-3	Neonatal Ventilators	3		
4.	9-4	Patient bed	10		
5.	9-5	Stethoscope	10		
6.	9-6	Autoclavable laryngoscopes	5		
7.	9-7	Bair Hugger	2		
8.	9-8	Bed side Chatting computers (Paperless ICU)	0		
9.	9-9	Blood Sugar Machines	4		
10.	9-10	Blood warmers	0		
11.	9-12	Pacemakers	2		
12.	9-13	CRRT Machines/CPFA	2		
13.	9-14	Drug Fridges	1		
14.	9-15	Food Fridge	1		
15.	9-16	Endoscopic laryngoscope	1		
16.	9-17	Non-Invasive ventilators	1		
17.	9-18	MRI Compatible Pumps	2		
18.	9-19	Diagnostic set	2		
19.	9-20	Plasma sterilizer	1		
20.	9-21	Pneumatic Pumps	2		
21.	9-22	Portable Examination lamp	2		
22.	9-23	Defibrillator	1		
23.	9-24	Transport monitors	1		
24.	9-25	Transport ventilators	1		
25.	9-26	Syringe pumps	30		
26.	9-27	Infusion pumps	20		

S/No.	LOT NO.	EXPECTED EQUIPMENT	QTY	Estimated Units Price	Estimated Total Price
27.	9-28	Feeding pumps	10		
28.	9-29	12 lead ECG machine	1		
29.	9-30	Endoscopy Machine	0		
30.	9-31	Mobile X-ray	1		
31.	9-32	Portable suction units	2		
32.	9-33	Central monitoring system (Set based on the total number of beds to be installed)	1		
33.	9-34	Emergency Trolley	1		
34.	9-35	CPAP machine	0		
35.	9-36	Ripple mattress (To be included with the bed)	0		
36.	9-37	Transport resuscitation kit	0		
		ICU LAB			
37.	9-38	Blood Gas Analyzer	1		

LOT 9: CRITICAL CARE UNIT

LOT 9-1 Patient monitor

Item Code No.	Department	Section	Item Description
LOT 9-1	Intensive Care Unit	Critical Care	Patient Monitor

1. General Description

Portable Bedside monitor suitable for use in ICU. Should be capable of continuous measuring/ monitoring of the following parameters in adults, neonatal and pediatric.

- SpO_2
- Temperature
- Blood pressure
- ECG
- Respiration
- CO_2
- Pulse Rate

2. Composition

2.1.	Main unit				

3. Performance Specifications

3.1. Main Unit

Portable Bed side monitors	
Type	Roll stand Mounted type, complete with internal rechargeable battery
Application	Can be used as a both bedside monitor and a transport monitor
Parameter & waveforms	SpO2, Pulse rate, ECG, NIBP, IBP, Respiration, CO2 and temperature
SpO_2, with reusable sensor	0 - 100% ± 3%
Pulse Rate	30-300 bpm ± 1%
Temperature	$0\text{-}50^0C$ ± 0.1%
NIBP	Mean 10- 300mmHg ± 5 mmHg
IBP X2	Mean 00 – 300mm Hg ± 1 mmHg
ECG	5 lead, standard configuration
CO_2	0 to 99 mmHg ± 4 mmHg
Display	Minimum 12.0 inches color touch screen/scroll type

Item Code No.	Department	Section	Item Description
LOT 9-1	Intensive Care Unit	Critical Care	Patient Monitor

	6 to 8 waveforms with large font	
Networking	Wireless and wired connection to the central work station	
Storage	Capable of storing patient data and transferring to the central workstation for viewing or printing.	
Audio and visual alarm Printer	For all parameter. Inbuilt Thermal Printer	
Alarm setting limits	Adjustable by user	
Low battery indicator	Audio and visual alarm	
Power Requirement	Rechargeable internal battery, that can last at least 3 hours when fully charged	
Wireless networking	Latest technology.	

4.	Accessories	The following accessories will be provided as startup kits.
4.1.	ECG connection lead and reusable electrodes	2 Set
4.2.	SpO_2 connection cable and sensor (finger probe), reusable	2 Sets
4.3.	Adult cuff	3 Sets
4.4.	Peadiatric cuff	2 Sets
	Temperature connection cable and probe (reusable)	2 Sets
4.5.	Recording paper	20 Boxes
5.	Quality standards	
5.1.	Manufacturing standards	IEC 60601-1, ISO 9001, ISO 13485
5.2.	Conformity to standards	Directive 2004 / 108 / EC, CE and FDA marked
6.	Local back up service	
6.1.	Available	Should be available locally
6.2.	Capacity to service equipment	Agent shall have adequate facilities, spare parts, consumables and qualified and skilled technical staff
7.	Delivery point	

Item Code No.	Department	Section	Item Description		
LOT 9-1	Intensive Care Unit	Critical Care	Patient Monitor		
7.1.	See Schedule	For inspection and testing			
7.2.	Nil				
8.	Pre installation requirements				
	Nil				
9.	Installation and testing				
	Complete installation and setup of the machine as per manufacturer's instructions				
10.	Training				
10.1.	User Training	On site user training on operation and daily up keep			
10.2.	Maintenance training	Onsite maintenance training on preventive maintenance			
11.	Technical documentations				
11.1.	User manuals	2 Sets			
11.2.	Service Manual	1 Set			
11.3.	Drawings	Nil			
12.	Commissioning				
12.1.	Testing and commissioning of the machine to the satisfaction of the user.				
13.	Warranty				
13.1.	Equipment	Minimum of one year after commissioning on all parts.			
13.2.	Equipment System	Nil			

LOT 9-2 Ventilators

Item Code No.	Department	Section	Item Description		
LOT 9-2	Intensive Care Unit	Critical Care Unit	Ventilators		
1. General Description					
Advanced microprocessor-based ventilator for ICU, mobile on trolley, proof of model on current production, for use in adult, peadiatric, and neonates					
2. Composition					
2.1.	Main unit				
3. Performance Specifications					

Item Code No.	Department	Section	Item Description
LOT 9-2	Intensive Care Unit	Critical Care Unit	Ventilators

3.1.	Main Unit	
3.1.1.	Ventilation mode	CMV, PEEP, CPAP, PSV, SIMVand NIV
3.1.2.		Supports, invasive and non-invasive ventilation, Nasal CPAP, ASV
3.1.3.	Ventilation rate CMV	up to 100 bpm
3.1.4.	Inspiratory flow	5-80 lpm
3.1.5.	Tidal Volume	5-2000 ml
3.1.6.	I/E ratio	5:1- 1:5
3.1.7.	Inspiration time	0.3-5.0 sec
3.1.8.	Trigger sensitivity	Flow/pressure
3.1.9.	PEEP/CPAP	1 to 40 cmH_20
3.1.10.	Oxygen Concentrations	21-100%
3.1.11.	Alarms	Upper and lower airway pressure, Gas supply pressure, system error, (audio and visible)
3.1.12.	Nebulizer	In CMV, SIMV mode
3.1.13.	Display	LCD colour screen, Display respiratory parameters
3.1.14.	Connectivity	Serial port RS 232, Ethernet, Wi-Fi, etc.
3.1.15.	Batter back up	Provided, rechargeable
3.1.16.	Back up time	4 hrs. approximately
3.2.	Components	
3.2.1.	Trolley	Mobile on castors with brakes
3.2.2.	Tubing support arm	1 pc
3.2.3.	Breathing circuit set (reusable)	1 pc
3.2.4.	Bacteria filter	2 sets
3.2.5.	O_2 pressure hose	1pc
3.2.6.	Air pressure hose	1 pc
3.2.7.	Cylinder support	1 pc
3.2.8.	Test bag	1 pc
3.2.9.	Laryngeal mask	1 pc

Item Code No.	Department	Section	Item Description
LOT 9-2	Intensive Care Unit	Critical Care Unit	Ventilators
3.2.10.	Air way, 3 type	1 Set	
3.3.	Humidifier	Heated humidifier 1 pc	
3.4.	Trends	At least 24 hrs.	
3.5.	Medical air supply	Should have a Gas delivery system by soundless inbuilt compressor /external integrated compressor with the unit	
4.	Physical characteristics		
4.1.	Main unit	Mounted on mobile cart	
5.	Operating environment		
5.1.	Power Requirements	240V, A/c 50 Hz, Single phase	
5.2.	Ambient temperature	10^{o} C to 40^{o} C	
5.3.	Relative humidity	20% to 90%	
6.	Accessories		
6.1.	Automatic Voltage Regulator (AVR)		
6.1.1.	Capacity	Over VA of the main Unit	
6.1.2.	Input	Ac 240V, 50Hz, Single phase ± 15%	
6.1.3.	Output	Ac 240V, 50Hz, Single Phase ± 2.5 %	
7.	Consumables/Reagents		
7.1.	Nil		
8.	Quality standards		
8.1.	Manufacturing standards	IEC 60601-1, ISO 9001 and ISO 13485	
8.2.	Conformity to standards	CE and FDA marked	
9.	Local back up service		
9.1.	Available	Should be available locally	
9.2.	Capacity to service equipment	Agent shall have adequate facilities, spare parts, and qualified and skilled technical staff	
10.	Delivery point		
10.1.	See Schedule	For inspection, testing and installation	
11.	Pre installation requirements		

Item Code No.	Department	Section	Item Description		
LOT 9-2	Intensive Care Unit	Critical Care Unit	Ventilators		
	Nil				
12.	Installation and testing				
	Complete installation and setup of the machine as per manufacturer's instructions				
13.	Training				
13.1.	User Training	On site user training on operation and daily upkeep			
13.2.	Maintenance training	Onsite maintenance training on preventive maintenance			
14.	Technical documentations				
14.1.	User manuals	2 Sets			
14.2.	Service Manual	1 Set			
14.3.	Drawings	Nil			
15.	Commissioning				
15.1.	Testing and commissioning of the machine to the satisfaction of the user.				
16.	Warranty				
16.1.	Equipment	Minimum of one year after commissioning on all parts.			
16.2.	Equipment System	Nil			

LOT 9-3 Neonatal Ventilators

Item Code No.	Department	Section	Item Description		
LOT 9-3	Intensive Care Unit	Critical Care Unit	Neonatal Ventilator		
1. General Description					
Neonatal ventilator for neonate, mobile on trolley, model on current production					
2. Composition					
2.1.	Main unit UPS				
3. Performance Specifications					
3.1.	Main Unit 3.1.1. Advanced microprocessor based continuous flow – pressure limited time cycled ventilator for very low body weight infants (premature, newborn) up to maximum 15 kg.				

Item Code No.	Department	Section	Item Description
LOT 9-3	Intensive Care Unit	Critical Care Unit	Neonatal Ventilator

3.1.2. The neonatal ventilator should have the following ventilation modes: IMV, Assist Control, SIMV, CPAP, and PSV. Volume Guarantee should possible in Assist Control and SIMV.

3.1.3. Monitor with LCD/TFT (12" or higher size) graphical display for real time simultaneous display of two waveforms. Should display minimum 3 graphs and 2 loops and may not simultaneously.

3.1.4. Should have settings for

a. Peak Inspiratory Pressure : 0 – 50 cmH2O
b. PEEP : 0 – 20 cmH2O
c. Fraction of inspired oxygen : 21 – 100%
d. Inspiratory Time : 0.1 – 3 sec
e. Expiratory Time : 0.2 – 25 sec
f. Inspiratory flow : 1 – 30Lpm
g. Base flow : 1 – 20 lpm
h. Volume guarantee : 2 - 100ml
i. Respiratory Rate : 0 - 100 bpm
j. Tidal volume range : 2 - 100 ml

3.1.5. Should have real time monitoring for:

a. Pressure – Peak, Plateau, Mean, PEEP
b. Expired Tidal Volume (Monitored), Expired Minute Volume, leakage in %.
c. Frequency/Rate – Set (Inspiratory), Spontaneous MV in %, total, I.E ratio
d. FiO2, Pressure and Flow wave forms and loops

3.1.6. Should have an internal battery (maintenance free) with minimum one hour operating time for ventilator.

3.1.7. Should have automatic compliance and leak compensation for circuits and ET tubes.

3.1.8. Should have expiratory valve for easy sterilization.

3.1.9. Should have automatic alarm settings.

3.1.10. It should have trending of measured parameters – 12Hrs

3.1.11. MV alarm can be manually adjusted along with audio and visual alarms for:

a. High/low pressure
b. High/low Minute Volume/Tidal Volume
c. Apnea alarm
d. Compressor failure
e. Failure of Sensor's
f. Tube obstruction
g. Power failure
h. Ventilator failure

3.1.12. Standard accessories (for each equipment)

a. Modular corrosion free Original Trolley

Item Code No.	Department	Section	Item Description
LOT 9-3	Intensive Care Unit	Critical Care Unit	Neonatal Ventilator

b. Silicon patient circuit with Y piece sensor for neonates – 2 Set start
c. Servo controlled humidifier with heated wire type and reusable chamber.
d. Temperature probe & adaptor - 2 no's start
e. Flow sensor - 10 no's start
f. Inbuilt Nebulizer
g. Original Hinged arm for rail (support for patient circuit)
h. Test lung for each patient circuit. - 1 no
i. Servo heated Humidifier with Temp Display - 1no
j. Hose for O2 connection - 5 mts
k. Hose for compressed air - 5 mts
l. Hose plug for O2 and air - 2 on each
m. Oxygen conversion kit with 5m Hose - 1no
n. Nasal mask and prongs(three different size) -3 each
o. Expiratory Valve per ventilator - 2 Nos. start

3.1.13. Should have a Gas delivery system by soundless inbuilt compressor /external integrated compressor with the unit. In case of compressor failure it should also be operable with compressed air/oxygen supply of 45 to 60 psi.
3.1.14. Replacement guarantee should be provided for flow sensors and oxygen sensor for the entire 3 years warranty period and also the rate offered for CMC should include the replacement guarantee for flow sensors and oxygen sensor.
3.1.15. Trolley/ Cart mounting for easy transport.
3.1.16. Should work with input 240Vac 50 Hz supply.
3.1.17. Equipment should have inbuilt battery backup for at least 30 minutes backup.
3.1.18. Should have safety certificate from a competent authority CE / FDA (US) Copy of the certificate / test report shall be produced along with the technical bid.

Documentation

3.1.19. Certificate of Calibration and inspection from the factory
3.1.20. List of Equipment available for providing calibration and routine maintenance support as per manufacturer documentation in service / technical manual.
3.1.21. List of important spare parts and accessories with their part number and costing
3.1.22. Log book with instruction for daily, weekly, monthly and quarterly maintenance checklist. The job description of the hospital technician and company service engineer should be clearly spelt out

Item Code No.	Department	Section	Item Description
LOT 9-3	Intensive Care Unit	Critical Care Unit	Neonatal Ventilator
	3.1.23. Service manual in English 3.1.24. User manual in English		

LOT 9-4 **Patient bed**

Item Code No.	Department	Section	Item Description
LOT 9-4	Intensive Care Unit	Critical Care Unit	Patient Bed

1. General Description

Electrical and Manual operated ICU bed complete with adjustable backrest, knee rest, trendelenberg/ reverse trendelenberg, waterproof mattress and ripple mattress.

2. Composition

2.1.	Main unit				

Physical Specifications

Main Unit

2.2. Operational Requirements

2.2.1. The system should be electrically and manually operated and adjustable for heights, trendelenburg etc. It should also be having radiotransluscent top for carrying out X-Ray at the bedside

2.3. Technical Specifications

2.3.1. Should have four section mattress base

2.3.2. Should be able to handle weight of up to 200Kg

2.3.3. Should have X-Ray translucent back section made up of high pressure laminate.

2.3.4. Should have X-Ray cassette holder underneath the back section & should allow insertion of X-Ray cassette from either side of the bed.

2.3.5. Base frame & support frame should be made up of steel for long life & prevention from rusting.

2.3.6. Should have stepless electrical adjustment for the following :-

- Height : 450-840 mm
- Back section : 0- 50 degrees
- Leg Section : 0-30 degrees

2.3.7. Should have stepless pneumatic adjustment for Trendelenburg (20-25° approx.), reverse-trendelenburg (10-15° approx.)

2.3.8. Should have a manual quick release mechanism for back section adjustment during emergency situation

2.3.9. Should be equipped with four articulated half-length tuck away side rails

2.3.10. Should be equipped with large castors (diameter 150 mm) with central braking and steering facility.

Item Code No.	Department	Section	Item Description
LOT 9-4	Intensive Care Unit	Critical Care Unit	Patient Bed

2.3.11. 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.
2.3.12. Mattress should be fully Radiolucent for ease in performing portable X-Rays.
2.3.13. Should have bumpers at all four corners and place for fixing accessories
2.3.14. Dimensions of bed :

- Length : 2100 -2290 mm
- Width : 850 -1020mm
- Mattress Size : appropriate as per bed size

2.4. System Configuration Accessories, spares and consumables
2.4.1. I.C.U Bed Mainframe -01
2.4.2. Bed Ends, detachable : 01 pair
2.4.3. Articulated half-length tuck away side rails: 04 Nos.
2.4.4. IV Rods: 01 No.
2.4.5. Mattress 12 cm Thick: 01 No.
2.5. Environmental factors
2.5.1. Shall meet IEC-60601-1-2:2001(Or Equivalent BIS) General Requirements of Safety for Electromagnetic Compatibility.
2.5.2. The unit shall be capable of being stored continuously in ambient temperature of 15 -50 0C and relative humidity of 20-90%
2.5.3. The unit shall be capable of operating continuously in ambient temperature of 10 -40 0C and relative humidity of 20-90%
2.6. Power Supply
2.6.1. Power input to be 220-240VAC, 50Hz as appropriate fitted with BS plug
2.6.2. Resettable overcurrent breaker shall be fitted for protection
2.7. Standards, Safety and Training
2.7.1. Electrical safety conforms to standards for electrical safety IEC-60601 / IS-13450
2.7.2. Manufacturer should have ISO certification for quality standards.
2.7.3. Electric Shock Protection level-Class-B
2.7.4. Electric current Protection- Class -1
2.7.5. Certified to be compliant with IEC 60601-2-38 Medical Electrical Equipment part 2-38 Particular requirements for safety of Electrically Operated Hospital Beds
2.7.6. Service manual in English
2.7.7. User manual in English

3.	Quality Standards				
3.1.	Manufacturing standards	ISO 9001 and 60601, ISO 13485			
3.2.	Conformity to standards	CE or FDA Appproved, IP X4 electrical protection standard			
4.	Delivery point				
4.1.	See Schedule	Delivery point			

Item Code No.	Department	Section	Item Description		
LOT 9-4	Intensive Care Unit	Critical Care Unit	Patient Bed		
5.	Warranty				
5.1.	Equipment	Minimum of one year after delivery			
5.2.	Equipment System	Nil			

LOT 9-5 Stethoscope

Item Code No.	Department	Section	Item Description
LOT 9-5	Intensive Care Unit	Critical Care Unit	Cardiac stethoscope, adult
1. General Description			
Dual Stethoscope (Adult) : - Dual sided chest-piece. - Diaphragm for best auscultation. - Provided with Non-Chill retaining ring and bell ring. - Chrome plated internal spring binaural. It Should be CE marked.			

LOT 9-6 Autoclavable Laryngoscopes

Item Code No.	Department	Section	Item Description		
LOT 9-6	Intensive Care Unit	Critical Care Unit	Laryngoscope with blade, adult & Paediatric		
1. General Description					
Laryngoscope with blade for adult & Paeds					
2. Composition					
2.1.	Main unit Handle with battery Blades Casing				
3. Performance Specifications					
3.1. Main Unit					

3.1.1. Should supply 4 different size standard blades and one handle for adult and paediatric separately and one short stubby handle 3.1.2. Should be stainless Steel matt finished. 3.1.3. Should provide curved blades for both adult and paediatric. 3.1.4. An extra-large blade should be supplied along with each scope. 3.1.5. Should be provided with battery 3.1.6. Should provide spare bulb – 6 no's as part of start-up kit 3.1.7. Should provide casing						
4.	Quality standards					
4.1.	Manufacturing standards	ISO 9001 , ISO 13485				
4.2.	Conformity to standards	CE and FDA marked				
5.	Delivery point					
5.1.	See Schedule	For inspection and testing				
5.2.	Nil					
6.	Warranty					
6.1.	Equipment	Minimum of one year after commissioning on all parts.				
6.2.	Equipment System	Nil				

LOT 9-7 Bair Hugger

Item Code No.	Department	Section	Item Description
LOT 9-7	Intensive Care Unit	Critical Care Unit	Bair Hugger

1. General Description						
2. Composition						
3.	Main unit					
3.1. Should have the facility for Forced Air warming. 3.2. Should have Two Air flow setting for the air flow 48cfm / 32cfm for adult and infant patient in same machine. 3.3. Should have single Hose for all type/Size of Blankets. 3.4. Should have at-least 3 temperature control sensor 3.5. Should have over temperature sensor at the end of the Hose. 3.6. Should have Digital Hour Meter 3.7. Should have microprocessor control system to allow a multi-staged Heater. 3.8. Three heater elements to eliminate flicker of OR lighting. 3.9. Should have Temp. Range – Ambient to 43°C + 1.5°C Max. 3.10. Should have High Efficiency Air Filter of 0.2 Micro size. 3.11. The weight of Equipment should be less than 8.0 kg. 3.12. Should distribute even temperature across the blankets and patient.						

Item Code No.	Department	Section	Item Description
LOT 9-7	Intensive Care Unit	Critical Care Unit	Bair Hugger

3.13. Blanket should not be more than 160 gm. weight.
3.14. Should have safe warming to void tissue damaging.
3.15. Should have Facility to use Blood / Fluid and Patient warmer at the same time.
3.16. Should ensure even temperature from head to toe.
3.17. The equipment should have easy attachment to IV pole, Bedrail or Freestanding.
3.18. Should have service facility locally.
3.19. Meet Regulatory standard for leakage current.
3.20. The products should be (F.D.A.) and/or CE approved.

Blankets:

I.	Adult Full Body Blankets:	25
II.	Paediatric Full Body Blankets	25
III.	Adult Under-Body Blanket	25
IV.	Paediatric Under-Body Blankets	25
V.	Large Paediatric Under-Body Blankets	25

LOT 9-9 Blood Sugar Machines

Item Code No.	Department	Section	Item Description
LOT 9-9	Intensive Care Unit	Critical Care Unit	Blood Sugar Machines

1. General Description

2. Composition

2.1.	Main unit				

GLUCOMETER WITH

STRIPS Product
Eligibility Criteria:

- Product should be CE as per IVD (Invitro Diagnostic Device) or USFDA Certified.
- Manufacturer should be ISO 13485 certified for quality standards.
- Test strips should be certified by the Kenya Laboratory Technologists and Technicians Board.

3. **Technical Specifications**

3.1. Small, portable and user-friendly device is required. Blood should not go into the Glucometer while measurement.
3.2. It should be able to measure whole blood in capillary mode.
3.3. Measurement range: 30 to 600 in mg/dl.

Item Code No.	Department	Section	Item Description
LOT 9-9	Intensive Care Unit	Critical Care Unit	Blood Sugar Machines

3.4. Accuracy should be as per International Standard ISO 15197: 2013 (Requirements for Blood- glucose monitoring systems for self-testing in managing diabetes mellitus). Supporting certificate or test reports from the National Institutes of Biologicals (NIB) must be furnished of last 2years with the technical bid.
3.5. Reproducibility/Precision: ± 5%
3.6. Display should be 40mm ± 5 mm or better measured diagonally.
3.7. It should be battery operated electronic system and the battery life should be for at least 500 tests.
3.8. Self-life of strips: Minimum 6 months at the time of delivery to consignee.
3.9. Packing of strips should not be more than 50 strips in a pack.
3.10. Strips should work for minimum 3 months after opening of strips pack.
3.11. Operating temperature for both device and test strip should be 100C to 400C.
3.12. Control solution for checking reliability of strips will be supplied free of cost as & when required.
3.13. Ready availability of reagent test strips, battery & other consumables across BIHAR for at least 5 years.
3.14. **A complete user operational guide shall have to be supplied along with each machine, printed in Hindi and English language.**
3.15. **A lancet applicator/ lancet holder shall have to be supplied along with each machine.**

Scope of supply:

a) Glucometer: 1no.
b) Standard batteries: 1Set
c) Carrying case: 1no.
d) Control solution/Control Strips
e) Glucose test strips: As per Order
f) Auto disables lancets: As per order
g) **A lancet applicator/ lancet holder**

4.

LOT 9-10 Blood Warmers

Item Code No.	Department	Section	Item Description
LOT 9-10	Intensive Care Unit	Critical Care Unit	Blood Warmers

1. General Description

1.1. Delivers blood and intravenous fluid to the patient at norm thermic temperature at wide range of flow rates from gravity flow rates to 50-5,000 ml/hr.

2. Composition

2.1.	Main unit				

Item Code No.	Department	Section	Item Description
LOT 9-10	Intensive Care Unit	Critical Care Unit	Blood Warmers

2.1.1. Should be able to warm fluid/blood to a temperature range of 37-40 degree C
2.1.2. Should be able to maintain or warm fluid/blood at a flow rate of 2.5 L/min
2.1.3. Should have a digital temperature display of fluid
2.1.4. Should have inbuilt water tank/ dry in line heating system to warm the infused fluid/blood
2.1.5. Should have a warm water column or heated sleeve up to the patient end to maintain the temperature up to the point of entry into the vein
2.1.6. Alarms for disconnections, less water and over temperature
2.1.7. At least 350 disposable tubing sets for fluid/blood along with each unit, the cost of which should be included in the financial bid
2.1.8. Should be useful for both in adult and Pediatric patients

2.2. Operational Requirements:
2.2.1. The Blood Warming and Infusion Set should be user friendly, safe to use

2.3. Standards, Safety and Training:
2.3.1. Should be FDA or CE approved product.
2.3.2. Electrical safety conforms to standards for electrical safety IEC-60601-1 General Requirements. (or equivalent Standard)
2.3.3. Manufacturer/Supplier should have ISO certification for quality standards.
2.3.4. Certified for meting IEC60601-2-24: Particular requirements for the safety of infusion pumps and controllers
2.3.5. Should meet IEC 529 Level 3 and 4 (IP3X)(spraying and splashing water) for enclosure protection, water ingress.
2.3.6. Electrical Safety Classification Class I/II, Type CF and Internally powered equipment.

2.4. Power Supply:
2.4.1. Power input to be 220-240VAC, 50Hz fitted with BS UK plug

2.5. Documentation:
2.5.1. User Manual and Service manual in English must be provided, both soft and hard copies.

2.6. Installation, Commissioning and Testing,
2.6.1. The equipment and all accessories should be transported, installed, tested and commissioned at EAKI project site.

2.7. Warranty and After Sales Service:
2.7.1. The Equipment including all accessories including bought out items should be under WARRANTY for a period of at least TWO YEARS after successful commissioning.
2.7.2. Comprehensive maintenance contract rates for 5 YEARS after warranty must be quoted separately and these would be taken into consideration while comparing price bids.

Item Code No.	Department	Section	Item Description
LOT 9-10	Intensive Care Unit	Critical Care Unit	Blood Warmers

2.7.3. All spare parts and consumables should be available with supplier or principals for a period of at least 10 years.

2.7.4. Should have local service facility. The service provider should have the necessary equipment recommended by the manufacturer to carry out preventive maintenance test as per guidelines provided in the service/maintenance manual.

2.8. Other tender conditions

2.8.1. Suppliers should have been in the market for at least 3 years and should have a satisfied userbase for this equipment.

2.8.2. All Essential Spare parts / Consumables rates to be given separately which may be frozen for next 10 Years.

2.8.3. Suppliers should have made a large number of installations, within the last five years, in the country in reputed institutions and preferably in Government Hospitals with a proven track record of excellent after sales support for this system.

2.8.4. List of references to be enclosed.

LOT 9-11 Pacemakers

Item Code No.	Department	Section	Item Description
LOT 9-11	**Intensive Care Unit**	**Critical Care Unit**	**Pacemaker**
1. General Description			
Temporary pace maker, externally type, Single chamber for synchronous and asynchronous pacing			
2. Composition			
2.1.	Main unit		
3. Performance Specifications			
3.1. Main Unit 3.1.1. Should be a Single Chamber Pacemaker (Temporary) for bradycardia treatment before, during or after a surgery. 3.1.2. Stimulation burst and permanent stimulation should be available for high pacing rate. 3.1.3. Should be compact & easy-to-operate device, particularly suitable for emergency treatments. 3.1.4. Safety features, including automatic lead and battery check. 3.1.5. Should have continuous monitoring of the battery voltage. 3.1.6. Should have transparent cover for parameter protection. 3.1.7. Should have shock and water-resistant housing. 3.1.8. Should have back up pacing during battery change. 3.1.9. Should have Modes AOO, AAI, VOO, VVI 3.1.10. Should have pacing rate 40-180 ppm. 3.1.11. Should have fast pacing (Burst rate) of 80-200 ppm. 3.1.12. Should have Pulse Amplitude of 0.1-17V 3.1.13. Should have sensitivity 1.0-20mV 3.1.14. Should have minimum battery backup > 200 hours. 3.1.15. Should be supplied with at least 2 patient cables 3.1.16. Should have safety certificate from a competent authority CE and FDA marked with valid detailed electrical and functional safety test report			

LOT 9-12 CRRT Machines/CPFA

Item Code No.	Department	Section	Item Description
LOT 9-12	Intensive Care Unit	Patient Area	CRRT Machines/CPFA
1. General Description			
The machine is dedicated to the fully automated practice of a complete range of continuous renal replacement and fluid management therapies.			

Item Code No.	Department	Section	Item Description
LOT 9-12	Intensive Care Unit	Patient Area	CRRT Machines/CPFA

2. Composition

2.1.	Main unit				

3. Description of the medical supply unit design type

3.1. The machine is a fully automatic integrated unit, and able to perform the following therapies:

- 3.1.1. S.C.U.F - Slow Continuous Ultra Filtration.
- 3.1.2. C.V.V.H - Continuous Veno-Venous Hemofiltration
- 3.1.3. C.V.V.H.D - Continuous Veno-Venous Hemodialysis
- 3.1.4. C.V.V.H.D.F - Continuous Veno-Venous Hemodiafiltration
- 3.1.5. T.P.E - Theraputic Plasma Exchange
- 3.1.6. H.P. – Hemoperfusion
- 3.1.7. Sepsis treatment using Oxiris membranes
- 3.1.8. Compatibility with MARS monitor for Liver dialysis

3.2. The machine is user friendly and has automated functions which include:

- 3.2.1. A large 12 inches color TFT-LCD touch screen and smart software for easy operator guidance.
- 3.2.2. Step-by-step instructions with graphical instructions on screen for easy setup.
- 3.2.3. Self-testing of alarms and functions after priming and every 2 hours to ensure the patient's safety
- 3.2.4. Rapid and automatic priming procedure in 5 minutes
- 3.2.5. Continuous and precise fluid balance management using 4 dedicated (independent) weighing devices monitoring Pre-Blood pump, Replacement pump, Dialysate pump and Effluent pump.
- 3.2.6. Recording of patients' treatment history up to 90 hours. Storage of 500 events
- 3.2.7. Total filtrate volume, replacement solution volume, dialysate volume, pre-blood solution volume and elapsed time are shown and updated on treatment history screen in an orderly fashion for ease of recording and patient safety.
- 3.2.8. Continuous information of all parameters displayed on one screen including graphical display of pressure monitoring such as filter differential pressure and TMP (trans-membrane pressure).
- 3.2.9. Each fluid weighing scale should be able to accommodate up to 11L of fluid at one time in order to reduce workload of nurses. (A total of max 44L with 4 independent fluid weighing scales.)
- 3.2.10. System comes with the following :
  Option for easy **changeover from one modality to another without interrupting the treatment**.
  Option for **Regional Citrate Anticoagulation for all therapies**
  Option for **simultaneous delivery of Pre and Post** filter replacement solution in CVVH and CVVHDF
  Option for **recirculation mode**

Item Code No.	Department	Section	Item Description
LOT 9-12	Intensive Care Unit	Patient Area	CRRT Machines/CPFA

Option to **enable Oxiris filter for Sepsis treatment**
Option to enable low weight HF20 set for **crrt treatment of babies > 8 Kg weight**
Option to **change syringe size**
Option to **upgrade software.**

3.2.11. **Pre-connected** filter together with the tubing set (the choice of membrane of the filter used with this system should be made from Acrylonitrile69 (AN69) which has been proven to remove inflammatory molecules e.g. IL-6 effectively)

3.2.12. Should operate with a **low extracorporeal blood volume** which is equal or less than 152ml (93ml for Paediatric) in order to improve patient tolerance without affecting patient's haemodynamic stability and limited blood loss.

3.2.13. Built-in dosage calculator.
Able to provide additional tool to support operator on the dosage prescription and display dialysis dose delivered at end of therapy.
This helps in easy management **with built-in calculator aid** in providing up-to-date details on treatment efficiency.

3.3. TECHNICAL REQUIREMENTS:

3.3.1. The system should be equipped with at least five (5) separate pumps for the following functions:

- Blood Pump;
- Dialysate pump;
- Effluent pump;
- Replacement pump;
- Pre- blood infusion pump

- Allows total circuit hemodilution with infusion point very close to the patient access.
- PBP hemodilution can be set to a fixed ratio between the speed of blood pump & speed of PBP additional pump & monitoring required.
- Allows regional anticoagulation protocol e.g. Citrate which has been proven to prolong the filter's life span

3.3.2. Equipped with four (4) independent weighing scales which allows the user to use different composition of fluids for each scale in order to ensure precision and accuracy in delivering the fluids :

- Pre-Blood pump Scale;
- Replacement Scale;
- Dialysate Scale;
- Effluent Scale.

3.3.3. Equipped with five (5) independent pressure sensors :

- Pre Filter pressure sensor;
- Effluent pressure sensor;
- Blood access pressure sensor;
- Blood return pressure sensor;

Item Code No.	Department	Section	Item Description
LOT 9-12	Intensive Care Unit	Patient Area	CRRT Machines/CPFA

- Fifth pressure sensor port for future therapy e.g. Couple filtration.

3.3.4. Equipped with 2 pinch valves for the pre and post dilution capability using the same treatment set.

3.3.5. For CVVHDF modalities, machine should have the flexibility to use lactate based dialysate solution and bicarbonate solution simultaneously.

3.3.6. Alarms (audio and visual) and safety system includes:
Bag change information;
Access pressure alarms;

Filter clotting alarms;
Return pressure alarms;

Air detector alarm;
Blood leak detector alarm;

Bar code reader

- Recognition of set type and traceability number.
- Automatic setting of the set parameters range.

Deaeration chamber.

- Unique air management system.
- Low volume (7ml) air bubble trap with semi automatic levelling.
- No air-blood interface.

Discharger ring.

- To minimize electrostatic interference on cardiac monitor.

3.3.7. Equipped with the capabilities for connectivity and information technology: computer interface which allows for remote troubleshooting;

3.3.8. Ethernet connection with ICU network* ;

3.3.9. PCMCIA slot with data card to store treatment data that can be downloaded into PC.

3.3.10. Flow Rate (With clinical paper proven that the delivered and prescribed setting is always lower than 2%)

3.3.11. Blood pump flow rate ranges between 10ml to 450ml/min with accuracy of ±10% of the set rate.

3.3.12. Replacement solution flow rate ranges between 0 ml to 8000ml/hr*.

3.3.13. Dialysate flow rate ranges between 0 ml to 8000 ml/hr*.

3.3.14. Pre-blood infusion pump flow rate between 0 ml to 8000 ml/hr*.

3.3.15. Filtrate or Effluent flow rate ranges between 0 ml to 10,000 ml/hr.
Replacement + Dialysate + PBP + Pt Fluid Removal. ≤ 10,000 ml/ hour.

3.3.16. Pressure monitoring range:

3.3.16.1. Access line: (-) 250 mmHg to (+) 300mmHg.

3.3.16.2. Return line: (-) 50 mmHg to (+) 350mmHg

3.3.16.3. Pre filter line: (-) 50mmHg to (+) 450 mmHg

3.3.16.4. Effluent line: (-) 350 mmHg to (+) 400 mmHg.

Item Code No.	Department	Section	Item Description
LOT 9-12	Intensive Care Unit	Patient Area	CRRT Machines/CPFA

3.3.17. The system should include(integrated) infusion pump for continuous or bolus anticoagulation.

Continuous delivery rate range :
0 or 0.1 to 5.0 ml/hr for 10 ml syringe
0 or 0.5 to 5.0 ml/hr for 20 ml syringe
0 or 0.5 to 10.0 ml/hr for 30 ml syringe
0 or 2.0 to 20.0 ml/hr for 50 ml syringe

Bolus delivery volume range :
0 or 0.5 ml to 5.0 ml for 10 ml and 20 ml syringes
0 or 1.0 to 5.0 ml for 30 ml syringe
0 or 2.0 to 9.9 ml for 50 ml syringe

3.3.18. Syringe type for heparin pump is calibrated with 10ml to 50ml.
3.3.19. Optional blood warmer (can also be used as fluid warmer)

3.4. TRAINING:
3.4.1. Onsite training on operation and simple maintenance of equipment.
3.4.2. Factory Training for the biomeds

3.5. Operating environment
Power Requirements Power input 220-240 VAC, 50HZ fitted with BS plug
Internal back up batteries Provided, rechargeable type
Ambient temperature 10^{o} C to 40^{o} C
Relative humidity 15% to 90%

3.6. Consumables
Provide 50 Start-up Kits for all required consumables.

3.7. Quality standards
Manufacturing standards IEC 60601-1, ISO 9001, ISO 13485
Conformity to standards CE and FDA marked

3.8. Delivery point: EAKI Project.

3.9. Installation and Commissioning
Installation, testing and commissioning of the machine to the satisfaction of the user.

3.10. Warranty

Equipment Minimum of two years after commissioning on all parts.

LOT 9-13 Drug Fridges

Item Code No.	Department	Section	Item Description		
LOT 9-13	Intensive Care Unit	Critical Care Unit	Refrigerator, Drug		
1. General Description					
1.1. Refrigerator, drug.					
2. Composition					
2.1.	Main unit				
3. Performance Specifications					
3.1.	Main Unit				
3.1.1.	Material	Insulated galvanized steel			
3.1.2.	Type	Compressor, electrical			
3.1.3.	Door	Single door, glass type			
3.1.4.	Total net capacity	350 litres			
3.1.5.	Temperatures range	+2^{o}C to + 8^{o}C stable			
3.1.6.	Ambient temperature	10 ^{o} C to 35^{o}C			
3.1.7.	Shelves	Provided, adjustable and extractable			
3.1.8.	Thermometer	Digital, external mounted, with temperature record history			
3.1.9.	Control	Electronic, Microprocessor based			
3.1.10.	Refrigerant	CFC free			
3.1.11.	Alarm	Provided, audible and visible			
3.1.12.	Power	240V, 50 Hz, a.c			
4.	Accessories				
4.1.	Nil				
5.	Quality standards				
5.1.	Manufacturing standards	ISO 9001, ISO 14001, ISO 13485			
5.2.	Conformity to standards	CE and FDA marked.			
6.	Delivery point				

Item Code No.	Department	Section	Item Description
LOT 9-13	Intensive Care Unit	Critical Care Unit	Refrigerator, Drug
6.1.	See Schedule	For inspection and testing	
6.2.	Nil		
7.	Warranty		
7.1.	Equipment	Minimum of one year after commissioning on all parts.	
7.2.	Equipment System	Nil	
8.	Accessories		
8.1.	Automatic Voltage Regulator (AVR)		
8.1.1.	Capacity	Over VA of the main Unit	
8.1.2.	Input	Ac 240V, 50Hz, Single phase ± 15%	
8.1.3.	Output	Ac 240V, 50Hz, Single Phase ± 2.5 %	

LOT 9-14 Food Fridge

Item Code No.	Department	Section	Item Description
LOT 9-14	Intensive Care Unit	Critical Care Unit	Food Fridge
1. General Description			
1.1. Refrigerator, food.			
2. Composition			
2.1.	Main unit		
3. Performance Specifications			
3.1.	Main Unit		
3.1.1.	Material	Insulated galvanized steel	
3.1.2.	Type	Compressor, electrical	
3.1.3.	Door	Two door, freezer and lower compartment	
3.1.4.	Total net capacity	350 litres	

Item Code No.	Department	Section	Item Description
LOT 9-14	Intensive Care Unit	Critical Care Unit	Food Fridge
3.1.5.	Temperatures range	-4^{o}C to + 10^{o}C adjustable	
3.1.6.	Ambient temperature	10 ^{o} C to 35^{o}C	
3.1.7.	Shelves	Provided, adjustable and extractable	
3.1.8.	Thermometer	Digital, external mounted, with temperature record history	
3.1.9.	Control	Electronic, Microprocessor based	
3.1.10.	Refrigerant	CFC free	
3.1.11.	Alarm	Provided, audible and visible	
3.1.12.	Dimensions		
3.1.13.	Power	240V, 50 Hz, a.c	
4.	Accessories		
4.1.	Nil		
5.	Quality standards		
5.1.	Manufacturing standards	ISO 9001, ISO 14001	
5.2.	Conformity to standards	CE marked.	
6.	Delivery point		
6.1.	See Schedule	For inspection and testing	
6.2.	Nil		
7.	Warranty		
7.1.	Equipment	Minimum of one year after commissioning on all parts.	
7.2.	Equipment System	Nil	
8.	Accessories		
8.1.	Automatic Voltage Regulator (AVR)		
8.1.1.	Capacity	Over VA of the main Unit	

Item Code No.	Department	Section	Item Description
LOT 9-14	Intensive Care Unit	Critical Care Unit	Food Fridge
8.1.2.	Input	Ac 240V, 50Hz, Single phase ± 15%	
8.1.3.	Output	Ac 240V, 50Hz, Single Phase ± 2.5 %	

LOT 9-15 Endoscopic Laryngoscope

Item Code No.	Department	Section	Item Description		
LOT 9-15	Intensive Care Unit	Critical Care Unit	Endoscopic Laryngoscope		
1. General Description					
Diagnostic set					
2. Composition					
2.1.	ADULT LARYNGOSCOPES				
2.2.	PEDIATRIC LARYNGOSCOPES				
3. Description of the medical supply unit design type					

3.1. ADULT LARYNGOSCOPES
- 3.1.1. Fiber optic bright white halogen for true tissue color
- 3.1.2. Laryngoscope Handle Type C Battery Handle
- 3.1.3. Single-piece type; lightweight
- 3.1.4. Blades can be converted from lamp to fiber optic illumination
- 3.1.5. Light pathways can be repaired; reduced proximal blade height
- 3.1.6. With Macintosh Halogen Fiber Optic Blade 2
- 3.1.7. With Macintosh Halogen Fiber Optic Blade 3
- 3.1.8. With Macintosh Halogen Fiber Optic Blade 4
- 3.1.9. With Miller Blade 2
- 3.1.10. With Miller Blade 3
- 3.1.11. With Miller Blade 4
- 3.1.12. With laryngoscope case

3.2. PEDIATRIC LARYNGOSCOPES
- 3.2.1. Fiber optic bright white halogen for true tissue color
- 3.2.2. Laryngoscope Handle Type C Battery Handle
- 3.2.3. Single-piece type; lightweight
- 3.2.4. Blades can be converted from lamp to fiber optic illumination
- 3.2.5. Light pathways can be repaired; reduced proximal blade height
- 3.2.6. With six (6) Miller Fiber Optic Blade 00
- 3.2.7. With six (6) Miller Fiber Optic Blade 0

Item Code No.	Department	Section	Item Description
LOT 9-15	Intensive Care Unit	Critical Care Unit	Endoscopic Laryngoscope
3.2.8. With six (6) Miller Fiber Optic Blade 1 3.2.9. With laryngoscope case			

LOT 9-16 Non-Invasive ventilators

Item Code No.	Department	Section	Item Description
LOT 9-16	Intensive Care Unit	Critical Care Unit	Non-invasive Ventilator
1. General Description			
2. Composition			
2.1.	Main unit		
2.2.	2.2.1. **Description of function** ICU ventilator (Neonatal to adult) provide artificial respiratory support both invasive and non-invasively to critical patients 2.2.2. **Operational Requirement** a. Should be microprocessor-controlled ventilator with integrated facility for ventilation monitoring suitable for neonatal, Pediatric and adult ventilation. b. The unit should be compressor based with same make and automatic switch over facility to central air supply. c. Ventilator and compressor should be operable on mains and battery (up to 60 min) 2.2.3. **Technical specification** a. Hinged arm holder for holding the circuit b. Should have colored Touch Screen, 12 Inch or more, should be able to turn and tilt the display monitor c. Should have facility to measure and display i. 3 Scalar waves – Pressure and time, volume and time and flow and time. ii. 2 loops P-V, F-V. iii. Graphic display to have automatic scaling facility for waves iv. Status indicator for ventilator mode, battery life, patient data, alarm setting etc. d. Should have trending facility for 24 hours e. Should have Automatic compliance and leakage compensation for circuit		

Item Code No.	Department	Section	Item Description
LOT 9-16	Intensive Care Unit	Critical Care Unit	Non-invasive Ventilator

f. Should have following settings for all age groups.
   i. idal Volume 5 ml to 2000 ml in volume control
   ii. Pressure (insp) 2 – 80 cmH_20
   iii. Pressure Ramp / Flow patterns
   iv. Respiratory Rate 1 to 150 bpm, Insp. Time 0.1 to 3 sec, I: E Ratio 4:1 to 1:9
   v. Insp. Flow (Resultant) 0.2 to 180 LPM, continuous Flow 0-40 LPM PAP/PEEP 0-35 cmH_2O
   vi. Pressure Support 2-80 cmH_2O
   vii. FiO_2 21 to 100%
   viii. Pause Time 0 to 2 sec
   ix. Flow trigger 0.2 to 9 LPM or Pressure trigger 0.5 to 10 cm H_2O

g. Should have monitoring of the following parameters.
   i. Airway pressure (Peak & Mean)
   ii. Tidal Volume (Inspired & Expired)
   iii. Minute Volume (Expired)
   iv. Spontaneous Minute Volume
   v. Total Frequency
   vi. iO_2 dynamic
   vii. Intrinsic PEEP (or trapped volume)
   viii. Plateau Pressure
   ix. Resistance & Compliance
   x. Use Selector Alarms for all measured & monitored parameters

h. Should have modes of ventilation
   i. Volume controlled
   ii. Pressure controlled – BIPAP with/without pressure support with spontaneous breathing
   iii. SIMV with/without pressure support – VC + PS; PC + PS; PRVC + PS
   iv. CPAP/ PEEP
   v. Non Invasive ventilation in all ventilation modes
   vi. PRVC/ Autoflow/PSV + assured tidal volume
   vii. Bivent
   viii. Volume support
   ix. Apnea / backup ventilation in CPAP/ PSV, SIMV mode
   x. Neonatal mode of ventilation- nasal CPAP with its entire kit (including bonnet, nasal tubing, nasal prongs and nasal mask)

Item Code No.	Department	Section	Item Description
LOT 9-16	Intensive Care Unit	Critical Care Unit	Non-invasive Ventilator

i. Expiratory block should be autoclavable and no routine calibration required.
j. Should have below advanced monitoring
  i. Intrinsic PEEP
  ii. Occlusion Pressure, Max Inspiratory pressure (p1 Max)
  iii. RSBI
  iv. Patient circuit compensation
k. Should have integrated ultrasonic nebulizer with capability to deliver fine particle size of < 3 micron to be used in online.
l. Ventilator should have optional upgradation facility for integrated EtCO2.
m. Replacement of oxygen cells should be free within the period of warranty and CMC.
n. Should have ports for data transfer and software compatible with windows. Should have facility for network connection and should be HL7 compatible.
o. With each ventilator, two sets each of reusable patient interface (masks) for non-invasive ventilation should be provided for infants, children and adolescents (that is total of six patient interfaces for non-invasive ventilation with each ventilator).
p. It should be supplied with 50 nos. of disposable pediatric and adult circuits each with heater wire and chamber and also quote the price separately, to be fixed for next 3 years.

2.2.4. ICU Ventilator with OEM, non-corrosive trolley – 01
2.2.5. Adult, Pediatric reusable silicon patient circuit – 02 each
2.2.6. Expiratory valve/ expiratory cassette – 02 nos. with each ventilator. Reusable flow sensor -10 nos. with each ventilator. Minimum Warranty on expiration cassette/expiratory valve should be 3 years. In case it fails, the company/ supplier should replace it without any charge.
2.2.7. Proximal flow sensor for neonatal use- 05nos
2.2.8. Hinged Support Arm – 1 no
2.2.9. Oxygen Hose – 1 no; Air hose – 2 nos.
2.2.10. Medical Air compressor USFDA and European CE Certified
2.2.11. Reusable Masks (Small, Medium, Large) with each machine – 02 each
2.2.12. Humidifier –Automated, Servo Controlled with digital monitoring of inspired gas temperature, complete with heating wire – 01; with

Item Code No.	Department	Section	Item Description
LOT 9-16	Intensive Care Unit	Critical Care Unit	Non-invasive Ventilator
	reusable infant and pediatric chamber. Should be USFDA and European CE certified product. 2.2.13. **Power and inlet gas pressure requirement** a. Power input to be 220 – 240 VAC, 50 Hz b. Gas input (air and oxygen) – 50-100 psi 2.2.14. **Standards, Safety and Training** a. The ventilator should be US FDA and European CE certified Product. The company should attach USFDA and European CE certificate along with in the technical bid. b. Should have local service facility. The service provider should have the necessary equipment recommended by the manufacturer to carry out preventive maintenance test as per guidelines in the service/ maintenance manual. c. Company should ensure the supply of consumables and spares for the period of warranty and CMC Rates of consumables and accessories should be quoted separately in financial bid.		

LOT 9-17 Diagnostic Set

Item Code No.	Department	Section	Item Description		
LOT 9-17	Intensive Care Unit	Critical Care Unit	Diagnostic Sets		
1. General Description					
Diagnostic set					
2. Composition					
2.1.	ADULT LARYNGOSCOPES				
2.2.	PEDIATRIC LARYNGOSCOPES				
3. Description of the medical supply unit design type					
3.1. ADULT LARYNGOSCOPES 3.1.1. Fiber optic bright white halogen for true tissue color 3.1.2. Laryngoscope Handle Type C Battery Handle 3.1.3. Single-piece type; lightweight 3.1.4. Blades can be converted from lamp to fiber optic illumination 3.1.5. Light pathways can be repaired; reduced proximal blade height 3.1.6. With Macintosh Halogen Fiber Optic Blade 2 3.1.7. With Macintosh Halogen Fiber Optic Blade 3					

Item Code No.	Department	Section	Item Description
LOT 9-17	Intensive Care Unit	Critical Care Unit	Diagnostic Sets

3.1.8. With Macintosh Halogen Fiber Optic Blade 4
3.1.9. With Miller Blade 2
3.1.10. With Miller Blade 3
3.1.11. With Miller Blade 4
3.1.12. With laryngoscope case

3.2. PEDIATRIC LARYNGOSCOPES
3.2.1. Fiber optic bright white halogen for true tissue color
3.2.2. Laryngoscope Handle Type C Battery Handle
3.2.3. Single-piece type; lightweight
3.2.4. Blades can be converted from lamp to fiber optic illumination
3.2.5. Light pathways can be repaired; reduced proximal blade height
3.2.6. With six (6) Miller Fiber Optic Blade 00
3.2.7. With six (6) Miller Fiber Optic Blade 0
3.2.8. With six (6) Miller Fiber Optic Blade 1
3.2.9. With laryngoscope case

LOT 9-18 Plasma Sterilizer

Item Code No.	Department	Section	Item Description
LOT 9-18	Intensive Care Unit	Critical Care Unit	Plasma Sterilizer

1. General Description

Low Temperature based H2O2 Gas plasma sterilizer,

2. Composition

2.1.	Main unit				

3. Description of the medical supply unit design type

3.1. Should provide simple & fast sterilization of surgical instruments at low temperature using H2O2 Gas Plasma technology for effective removal of H2O2 from sterilized items and to compliment the process.
3.2. Should be suitable for sterilization of medical items like rigid endoscopes, lumen & non lumen , metal , non-metal, heat & moisture sensitive instruments
3.3. Chamber should have usable volume of around 50 liters
3.4. The sterilization temperature inside the chamber should be less than 55°C
3.5. Cycle time should be 35 to 60 mins
3.6. The sterilant should be in a cassette/ bottle with H2O2 concentration more than 55%
3.7. Should be endorsed by leading instruments and scopes makers like Karl Storz, Olympus, Stryker, Medtronic and Johnson & Johnson
3.8. The system should use minimum quantity of sterilant which should be less than 6-8 ml per injection to deliver dry terminal sterilization to ensure safety of Instruments against corrosion.

Item Code No.	Department	Section	Item Description
LOT 9-18	Intensive Care Unit	Critical Care Unit	Plasma Sterilizer

3.9. The unit should be equipped with all the safety features
3.10. Sterilizer should have storage of cycle records data.
3.11. Should be environment friendly and have no toxic products or harmful residues in the sterilized items in the chamber.
3.12. Sterilizer should be approved by USFDA and CE
3.13. Please specify list and cost of consumables/ consumable spares (i.e spares need to be replaced at regular intervals, may be quarterly/half yearly/ yearly such as annual maintenance kit etc.) if any.
3.14. Please specify pre installation requirements (electrical, HVAC etc.)
3.15. Please specify footprint size & its weight.
3.16. Demo of the quoted model will be mandatory at the cost of bidder if so desired by the user, after the opening of the technical bid and prior to opening of financial bid. This is for technical evaluation.

LOT 9-19 Pneumatic Pumps

Item Code No.	Department	Section	Item Description
LOT 9-19	Intensive Care Unit	Critical Care Unit	Pneumatic Pumps

1. General Description

Intermittent Pneumatic Compression Device

2. Composition

2.1.	Main unit				

3. Description of the medical supply unit design type

3.1. It should be of portable size with handle.
3.2. It should be US FDA & CE approved.
3.3. It should weigh between 3 to 5 kgs.
3.4. It should have power input of 230 volts, 20-25 watts with power cord of length min. 3 meters.
3.5. Battery backup should last for minimum 3-4 hour after fully charged.
3.6. The pressure adjustable range of 40-65 mm Hg.
3.7. LCD/LED with separate pressure display of both legs numeric & indicating the Inflated Leg. It should have timer sittings from 1to24 hour.
3.8. Safety Standards: -
- Audio and visual Alarms For Leak, For Maximum Pressure:

Item Code No.	Department	Section	Item Description
LOT 9-19	Intensive Care Unit	Critical Care Unit	Pneumatic Pumps

- Automatic shutdown if pressure exceeds the maximum limit.

3.9. Disposable Garments: -

- For Ankle to thigh level,
- For Ankle to below knee &
- For foot.

3.10. Garments should have inner cotton lining.

3.11. Sizes Available Disposable Garments: -

[a] Small [b] Medium [c] Large [d] XL [e] XXL

LOT 9-20 Portable Examination Lamp

Item Code No.	Department	Section	Item Description
LOT 9-20	Intensive Care Unit	Critical Care Unit	Portable Examination Light

1. General Description

The LED technology should be of highly engineered optical system which delivers the precisely controlled natural white light that is so important for an accurate examination.

2. Composition

2.1.	Main unit				

3. Description of the medical supply unit design type

Should have mobile Floor Stand
SLSE50-CM or Wall/Ceiling Mount

STANDARD DESIGN FEATURES

3.1. High-intensity of 39,000 lux (3623 fc) at 24" (61 cm)
3.2. 4000 K color temperature
3.3. CRI (Color Rendering Index) of 92

Item Code No.	Department	Section	Item Description
LOT 9-20	Intensive Care Unit	Critical Care Unit	Portable Examination Light

3.4. Natural white light
3.5. LED light module with at least 40,000-hour life
3.6. Universal input voltage
3.7. Drift-free K-arm with 42" (107 cm) arm range
3.8. IEC 60601-1/ 60601-2-41 certified
3.9. Should have European CE or USA certificate
3.10. Should be supplied with European or USA country of origin certificate.

LOT 9-21 Defibrillators

Item Code No.	Department	Section	Item Description
LOT 9-21	Intensive Care Unit	Critical Care Unit	Defibrillator

1. General Description

Defibrillator suitable for cardiac care complete with ECG monitoring, SPO_2 monitoring and NIBP

2. Composition

2.1.	Main unit				

3. Performance Specifications

3.1. The defibrillator should have biphasic technology having energy selection of maximum 200 joules.
3.2. The machine should have facility for ECG monitoring, defibrillation, external pacing & recorder.
3.3. Machine should have more than 8" TFT Screen.
3.4. Machine must be with sweep rate 25mm/sec, 50mm/sec.
3.5. Machine should have 72 hour trend storage facility.
3.6. Should have 5 leads and capable of monitoring 12 lead configuration ECG through ECG Cables, electrodes & paddles.
3.7. The machine should have defibrillation facility for adult & pediatric patients.
3.8. The machine should have ECG waveform display on bright screen along with other vital numeric information.
3.9. The machine should be compact, portable with built in rechargeable battery & light weight.
3.10. The machine should have inbuilt auto & manual recorder for printing ECG trace & stored information.
3.11. The machine should have user selectable alarm setting.
3.12. The machine should work on mains (without battery) and on battery as well.

Item Code No.	Department	Section	Item Description
LOT 9-21	Intensive Care Unit	Critical Care Unit	Defibrillator
3.13. The machine should have AED feature as inbuilt with manual override for manual operations. 3.14. Machine must be with carry bag & Accessory bag. 3.15. The machine must be supplied with all the essential accessories in 2 set & moveable trolley. 3.16. The Defibrillator should have an ECG display and a three lead ECG cable. 3.17. The Defibrillator should have SPO2 and must have Non Invasive Pacing.			
4.	Physical characteristics		
4.1.	Main unit	Portable	
4.2.	Dimensions		
5.	Operating environment		
5.1.	Power Requirements	240V, A/c 50 Hz, Single phase, 3 Pin Plug (BS), 3m long cord with PE	
5.2.	Back up supply	Internal rechargeable batteries (SLA), to last at least five hours	
5.3.	Ambient temperature	10^{o} C to 40^{o} C	
5.4.	Relative humidity	20% to 90%	
6.	Consumables		
6.1.	Start-up Kits must be provided including ECG electrode, Gel and Recording paper		
7.	Quality standards		
7.1.	Manufacturing standards	IEC 60601-1, ISO 9001, ISO 13485	
7.2.	Conformity to standards	CE and FDA marked	
8.	Local back up service		
8.1.	Available	Should be available locally	
8.2.	Capacity to service equipment	Agent shall have adequate facilities, spare parts, and qualified and skilled technical staff	

Item Code No.	Department	Section	Item Description		
LOT 9-21	Intensive Care Unit	Critical Care Unit	Defibrillator		
9.	Delivery point				
9.1.	See Schedule	For inspection and testing			
9.2.	Nil				
10.	Pre installation requirements				
	Nil				
11.	Installation and testing				
	Complete installation and setup of the machine as per manufacturer's instructions				
12.	Training				
12.1.	User Training	On site user training on operation and daily up keep			
12.2.	Maintenance training	Onsite maintenance training on preventive maintenance			
13.	Technical documentations				
13.1.	User manuals	2 Sets			
13.2.	Service Manual	2 Set			
13.3.	Drawings	Nil			
14.	Commissioning				
14.1.	Testing and commissioning of the machine to the satisfaction of the user.				
15.	Warranty				
15.1.	Equipment	Minimum of one year after commissioning on all parts.			
15.2.	Equipment System	Nil			

LOT 9-22 Transport Monitors

Item Code No.	Department	Section	Item Description
LOT 9-22	Intensive Care Unit	Critical Care Unit	Transport Monitor
1. General Description			

Item Code No.	Department	Section	Item Description
LOT 9-22	Intensive Care Unit	Critical Care Unit	Transport Monitor

Portable Bedside monitor suitable for use in ICU. Should be capable of continuous measuring/ monitoring of the following parameters in adults, neonatal and pediatric.

- SpO_2
- Temperature
- Blood pressure
- ECG
- Respiration
- CO_2
- Pulse Rate

2. Composition

2.1.	Main unit				

3. Performance Specifications

3.1. Main Unit

Portable Bed side monitors	
Type	Roll stand Mounted type, complete with internal rechargeable battery
Application	Can be used as a both bedside monitor and a transport monitor
Parameter & waveforms	SpO2, Pulse rate, ECG, NIBP, IBP, Respiration, CO2 and temperature
SpO_2, with reusable sensor	0 - 100% ± 3%
Pulse Rate	30-300 bpm ± 1%
Temperature	$0\text{-}50^0$C ± 0.1%
NIBP	Mean 10- 300mmHg ± 5 mmHg
IBP X2	Mean 00 – 300mm Hg ± 1 mmHg
ECG	5 lead, standard configuration
CO_2	0 to 99 mmHg ± 4 mmHg
Display	Minimum 12.0 inches color touch screen/scroll type
	6 to 8 waveforms with large font
Networking	Wireless and wired connection to the central work station

Item Code No.	Department	Section	Item Description
LOT 9-22	Intensive Care Unit	Critical Care Unit	Transport Monitor

Storage	Capable of storing patient data and transferring to the central workstation for viewing or printing.
Audio and visual alarm Printer	For all parameter. Inbuilt Thermal Printer
Alarm setting limits	Adjustable by user
Low battery indicator	Audio and visual alarm
Power Requirement	Rechargeable internal battery, that can last at least 3 hours when fully charged
Wireless networking	Latest technology.

4.	Accessories	The following accessories will be provided as startup kits.
4.1.	ECG connection lead and reusable electrodes	2 Set
4.2.	SpO_2 connection cable and sensor (finger probe), reusable	2 Sets
4.3.	Adult cuff	3 Sets
4.4.	Peadiatric cuff	2 Sets
4.5.	Temperature connection cable and probe (reusable)	2 Sets
4.6.	Recording paper	20 Boxes
5.	Quality standards	
5.1.	Manufacturing standards	IEC 60601-1, ISO 9001, ISO 13485
5.2.	Conformity to standards	Directive 2004 / 108 / EC, CE and FDA marked
6.	Local back up service	
6.1.	Available	Should be available locally
6.2.	Capacity to service equipment	Agent shall have adequate facilities, spare parts, consumables and qualified and skilled technical staff

Item Code No.	Department	Section	Item Description
LOT 9-22	Intensive Care Unit	Critical Care Unit	Transport Monitor
7.	Delivery point		
7.1.	See Schedule	For inspection and testing	
7.2.	Nil		
8.	Pre installation requirements		
	Nil		
9.	Installation and testing		
	Complete installation and setup of the machine as per manufacturer's instructions		
10.	Training		
10.1.	User Training	On site user training on operation and daily up keep	
10.2.	Maintenance training	Onsite maintenance training on preventive maintenance	
11.	Technical documentations		
11.1.	User manuals	2 Sets	
11.2.	Service Manual	1 Set	
11.3.	Drawings	Nil	
12.	Commissioning		
12.1.	Testing and commissioning of the machine to the satisfaction of the user.		
13.	Warranty		
13.1.	Equipment	Minimum of one year after commissioning on all parts.	
13.2.	Equipment System	Nil	

LOT 9-23 Transport Ventilators

Item Code No.	Department	Section	Item Description
LOT 9-23	Intensive Care Unit	Critical Care Unit	Transport Ventilator
1. General Description			
Advanced microprocessor-based ventilator for ICU, mobile on trolley, proof of model on current production, for use in adult, peadiatric, and neonates			

Item Code No.	Department	Section	Item Description
LOT 9-23	Intensive Care Unit	Critical Care Unit	Transport Ventilator
2. Composition			
2.1.	Main unit		
3. Performance Specifications			
3.1.	Main Unit		
3.1.1.	Ventilation mode	CMV, PEEP, CPAP ,PSV, SIMVand NIV	
3.1.2.		Supports, invasive and non-invasive ventilation, Nasal CPAP, ASV	
3.1.3.	Ventilation rate CMV	up to 100 bpm	
3.1.4.	Inspiratory flow	5-80 lpm	
3.1.5.	Tidal Volume	5-2000 ml	
3.1.6.	I/E ratio	5:1- 1:5	
3.1.7.	Inspiration time	0.3-5.0 sec	
3.1.8.	Trigger sensitivity	Flow/pressure	
3.1.9.	PEEP/CPAP	1 to 40 cmH_20	
3.1.10.	Oxygen Concentrations	21-100%	
3.1.11.	Alarms	Upper and lower airway pressure, Gas supply pressure, system error, (audio and visible)	
3.1.12.	Nebulizer	In CMV, SIMV mode	
3.1.13.	Display	LCD colour screen, Display respiratory parameters	
3.1.14.	Connectivity	Serial port RS 232, Ethernet, Wi-Fi, etc.	
3.1.15.	Batter back up	Provided, rechargeable	
3.1.16.	Back up time	4 hrs. approximately	
3.2.	Components		
3.2.1.	Trolley	Mobile on castors with brakes	
3.2.2.	Tubing support arm	1 pc	
3.2.3.	Breathing circuit set (reusable)	1 pc	

Item Code No.	Department	Section	Item Description
LOT 9-23	Intensive Care Unit	Critical Care Unit	Transport Ventilator
3.2.4.	Bacteria filter	2 sets	
3.2.5.	O_2 pressure hose	1pc	
3.2.6.	Air pressure hose	1 pc	
3.2.7.	Cylinder support	1 pc	
3.2.8.	Test bag	1 pc	
3.2.9.	Laryngeal mask	1 pc	
3.2.10.	Air way, 3 type	1 Set	
	Humidifier Trends	Heated humidifier 1 pc At least 24 hrs.	
3.3.	Medical air	Should have a Gas delivery system by soundless in built	
3.4.	Supply	compressor /external integrated compressor with the unit	
4.	Physical characteristics		
4.1.	Main unit	Mounted on mobile cart	
5.	Operating environment		
5.1.	Power Requirements	240V, A/c 50 Hz, Single phase	
5.2.	Ambient temperature	10^o C to 40^o C	
5.3.	Relative humidity	20% to 90%	
6.	Accessories		
6.1.	Automatic Voltage Regulator (AVR)		
6.1.1.	Capacity	Over VA of the main Unit	
6.1.2.	Input	Ac 240V, 50Hz, Single phase ± 15%	
6.1.3.	Output	Ac 240V, 50Hz, Single Phase ± 2.5 %	
7.	Consumables/Reagents		
7.1.	Nil		
8.	Quality standards		
8.1.	Manufacturing standards	IEC 60601-1, ISO 9001 and ISO 13485	
	Conformity to standards	CE and FDA marked	

Item Code No.	Department	Section	Item Description		
LOT 9-23	Intensive Care Unit	Critical Care Unit	Transport Ventilator		
9.	Local back up service				
9.1.	Available	Should be available locally			
9.2.	Capacity to service equipment	Agent shall have adequate facilities, spare parts, and qualified and skilled technical staff			
10.	Delivery point				
10.1.	See Schedule	For inspection, testing and installation			
11.	Pre installation requirements				
	Nil				
12.	Installation and testing				
	Complete installation and setup of the machine as per manufacturer's instructions				
13.	Training				
13.1.	User Training	On site user training on operation and daily up keep			
13.2.	Maintenance training	Onsite maintenance training on preventive maintenance			
14.	Technical documentations				
14.1.	User manuals	2 Sets			
14.2.	Service Manual	1 Set			
14.3.	Drawings	Nil			
15.	Commissioning				
15.1.	Testing and commissioning of the machine to the satisfaction of the user.				
16.	Warranty				
16.1.	Equipment	Minimum of one year after commissioning on all parts.			
16.2.	Equipment System	Nil			

LOT 9-24 Syringe Pumps

Item Code No.	Department	Section	Item Description
LOT 9-24	Intensive Care Unit	Critical Care Unit	Syringe Pump

1. General Description

1.1. Syringe pump

2. Composition

2.1.	Main unit				

3. Performance Specifications

3.1. Main Unit

3.1.1. Should be easy to use and nurse friendly.
3.1.2. Should have automatic syringe size and model detection
3.1.3. System should be front loading
3.1.4. Should have large format LCD/TFT display.
3.1.5. Should have a minimum flow rate range from 0.1 – 1200 ml/hr. for 50ml syringe, 0.1 – 100 ml/hr. for 20ml syringe and 0.1 – 60 ml/hr. for 10ml syringe.
3.1.6. Syringe range from 20-50/60 ml.
3.1.7. Should have a flow rate accuracy of ±2%
3.1.8. Should have a bolus rate up to 1000ml/hr. for 50 ml syringe.
3.1.9. Should have automatic and manual bolus.
3.1.10. Should have at least 3 levels of programmable occlusion pressure.
3.1.11. Should have automatic bolus reduction system to avoid accidental bolus delivery after occlusion incident.
3.1.12. Should have a rechargeable battery with back up time of minimum 3 hours.
3.1.13. System should have a docking station
3.1.14. Pump must trigger following alarms with visual indication:-
i. Occlusion Pressure Alarm
ii. KVO or 3 min pre- alarm
iii. Syringe empty and volume infused alarm
iv. Internal malfunction and Battery Charge Low Alarm
v. Syringe disengaged and incorrectly placed alarm
vi. Alarm loudness control.
vii. No mains
viii. Line disconnected (rapid pressure drop).
3.1.15. Should work with input 200 to 240Vac 50 Hz supply.
3.1.16. Should be CE and FDA marked.
3.1.17. Copy of the certificate / test report shall be produced along with the technical bid

LOT 9-25 Infusion Pumps

EAKI PROJECT DEPARTMENTAL EQUIPMENT LISTING

Item Code No.	Department	Section	Item Description
LOT 9-25	Intensive Care Unit	Critical Care Unit	Infusion Pump

1. General Description

1.1. Infusion pump

2. Composition

2.1.	Main unit				

3. Performance Specifications

3.1. Main Unit

a. Should be operated on drip rate Peristaltic finger pump method.
b. Should be compatible with most of the IV set (macro/micro drip sets).
c. Should have the following flow rates.
d. IV Set ml/hr. drops/min
   - 15 drops/ml 3~450ml/hr. 1~100drops/min
   - 20 drops/ml 3~450ml/hr. 1~100drops/min
   - 60 drops/ml 1~100ml/hr. 1~100drops/min
e. Should have a flow rate accuracy of ±10% and drip rate accuracy of ±2%.
f. Should have a volume infused display from 0 to 999.9ml.
g. Should have a purge and KVO facility.
h. Should have an audible and visual alarm for occlusion pressure, air alarm, door open, empty, low battery.
i. Should have a LCD display with backlight and graphical display of infusion.
j. Should have a minimum 2hr battery back up at highest delivery rate.
k. Should work with input 240Vac 50 Hz supply.
l. Should be CE and FDA marked
m. Copy of the certificate / test report shall be produced along with the technical

LOT 9-26 Feeding Pumps

Item Code No.	Department	Section	Item Description
LOT 9-17	Intensive Care Unit	Critical Care Unit	Feeding Pump

1.General Description

Enteral Feeding Pump

2.Composition

3.Description of the medical supply unit design type

Specification:

FLOW RATE CHANCE	1-100ml/h (1ml/h increments)
	100-600ml/h (5ml/h increments)
FLOW RATE ACCURACY	±7% at 50ml/h
FEEDING VOLUME	1-100ml/h (1ml/h increments)
	100-500ml/h (5ml/h increments)
FEEDING MODE	Continuous
PRIMING	Automatic & manual priming availability
COUNTER	Preferably cumulative feeding volume Counters from 0.001L to 99.999L
DATA EVENT LOG	Feeding history 24-72hrs or 250 Events (more will be preferable)
NIGHT MODE	Night mode decreases brightness of Screen & the power LED (preferable)
KEYPAD LOCK	Possibility to lock the keypad to prevent Unintentional key press
INTENDED USE	For external feeding use only compatible to hospital conventional feed.

EAKI PROJECT DEPARTMENTAL EQUIPMENT LISTING

Item Code No.	Department	Section	Item Description
LOT 9-17	Intensive Care Unit	Critical Care Unit	Feeding Pump

INFORMATION	Target volume almost reached battery almost Discharge, start reminder, technical information
ALARMS	Target volume reached door open, wrong set Installation, downstream occlusion, occlusion, Empty bag/air in line, empty battery, technical Information
PUMPING MECHANISM	Linear peristaltic pumping system
DISPLAY	LCD with good visibility
BATTERY	Full battery charging time: 5-6 hrs. Battery life minimum of 12-15 hrs. Once fully charged
FLUSH	Programmable flushing capabilities
FREE FLOW PROTECTION	Preventing the risk of free flow when door is opened When the set is engaged to ensure the patient Safety and an adequate delivery of nutrition
SET LENGTH	Adjustable anti free flow clamp positioning

- Device must be certified by recognized society for safe use like USFDA/ACE/EC
- Minimum of two years' warranty.

LOT 9-27 12 lead ECG Machine

Item Code No.	Department	Section	Item Description
LOT 9-27	Intensive Care Unit	Critical Care Unit	ECG Machine
1. General Description			
Description: should be able to record ECG signal in various configurations, 12 channels with interpretation software for recording and analyzing waveforms. Should have an external laser printer. Should have side arm ECG cable holder and dedicated trolley. The machine should meet the following			
2. Composition			
2.1.	Main unit		
2.1.1.	Be ergonomically designed with user friendly features		
2.1.2.	Have a standard 12 leads. With display for 6/3 channels		
2.1.3.	Have an inbuilt thermal printer with sweep speeds of 5, 10, 20 and 25mm/sec.		
2.1.4.	Have operating mode selection facility		
2.1.5.	Have a frequency response of upto150Hz		
2.1.6.	Have automatic adjustment of baseline for optimal recording		
2.1.7.	Have facility to enter patient information (name, age, sex height weight and BP)		
2.1.8.	Have facility to enter hospital and doctor's name		
2.1.9.	Have QRS and key beep ON/OFF facility		
2.1.10.	Have audible alarm and information for leads off, lack of paper, ECG signal overload and low battery.		
2.1.11.	Operate from mains 240V 50 Hz and rechargeable battery		
2.1.12.	The recorder to operate for a minimum of 5 hours on a fully charged battery.		
2.1.13.	Nave a memory for patient data storage of up to 100 patients.		
2.1.14.	Have external input/output interface, RS232, Ethernet connection and USB port.		
2.1.15.	Have interpretation software		
2.1.16.	Be mounted on a particular trolley.		
2.1.17.	Comply with IEC 61010 (equipment electrical policy) safety standards and have a CE mark.		
2.1.18.	The supplier to provide training to the user staff to a level that they can use the equipment effectively.		

Item Code No.	Department	Section	Item Description
LOT 9-27	Intensive Care Unit	Critical Care Unit	ECG Machine
2.1.19.	The supplier to provide training to the in-house maintenance staff. The training to be adequate that allows the in-house maintenance to service the equipment with minimal technical support.		
2.1.20.	The equipment to be supplied with complete set off accessories and user and service manuals.		
2.1.21.	The supplier to provide a warranty of 2 years from the date of successful installation and commissioning.		
2.1.22.	The supplier to provide manufacturer's letter of authorization to sell their product.		
2.1.23.	Quality standards: IEC 60601-1, ISO 9001 and ISO 13485		
2.1.24.	Conformity standards: ANSI/AAMI EC11: 1991/(R)2001/(R)2007, CE and FDA marked		

LOT 9-29 Mobile X-ray

Item Code No.	Department	Section	Item Description
Lot 9-29	Intensive Care Unit	Critical Care Unit	Mobile X –Ray Unit

1. General Description

1.1. Compact, easily transportable with articulated/telescopic arm suitable for bedside X-ray with maximum positioning flexibility in any patient position. The angles in various planes to be specified by the manufacturer

2. The unit should be a digital system with flat panel detector
3. Power Line Connection:
   a. Should operate on single phase power supply with plug in facility to any standard wall outlet
   b. Automatic adaptation to line voltage 200 to 240 Volts, 15 Amp plug

4. The Generator
   a. Must be microprocessor controlled high frequency, output 30 KW or above.
   b. It should have a digital display of mAs and kV and an electronic timer
   c. KV range: 40kV to 130kV or more
   d. Max. current: 300 mA or more
   e. Please specify mA and seconds separately and not mAs alone
   f. Shortest exposure time: should be 1ms or less
   g. The dose delivered per exposure must be displayed\

Item Code No.	Department	Section	Item Description
Lot 9-29	Intensive Care Unit	Critical Care Unit	Mobile X –Ray Unit

5. X-Ray Tube
   a. Output should match the output of the generator
   b. It must have a rotating anode with 3000 rpm or more
   c. Focal spot size should be 0.6mm/1.2mm or better
   d. Mention the heat storage capacity of the anode

6. Flat panel detector
   a. Should be Wireless
   b. The flat panel detector should be of the size 17 x 14 inch or more
   c. The detector pixel matrix sizes should be 2000X2000 or more
   d. The machine should have a detector storage compartment
   e. The image viewing time after exposure should not be more than 15 sec

7. Battery
   a. The machine should be able to run on mains as well as on battery supply
   b. Please specify number of exposures which can be done on battery
   c. The battery should also provide power for the motor to more the machine
   d. The battery should be able to be charged from a normal 15A, 230V single phase socket in less than 6 hours

8. Workstation
   a. The machine should have an integrated workstation with a touch screen
   b. The workstation should enable to viewing of the images, and provide post processing features, using touch screen monitor
   c. The post processing features should include, zoom, contrast and brightness adjustment, storage of images with a memory of at least 2000 images or better
   d. The touch screen size should be at least 15 inches, LCD type

9. Connectivity
   a. The machine should be fully network ready
   b. It should be possible to transfer images and patient data from and to hospital network using LAN connectivity and wireless LAN

10. The tube stand must be fully counterbalanced with rotation in all directions
11. The unit must have an effective braking system for parking, transport and emergency braking.
12. All cables should be concealed in the arm system
13. The exposure release switch should be detachable with a cord of at least 5 meters. Exposures with remote control should be provided.
14. Two light weight ‘zero lead’ aprons should be provided
15. A grid of 8:1 ratio of appropriate size should be provided
16. It should have quality certification CE and FDA

Item Code No.	Department	Section	Item Description
Lot 9-29	Intensive Care Unit	Critical Care Unit	Mobile X –Ray Unit

17.	ISO certification for services of medical devices must be submitted.				
18.	Delivery point				
18.1.	See Hospital Schedule.	For delivery, inspection and testing, installation and commissioning			
19.	Pre installation requirements				
	Nil	.			
20.	Installation and testing				
	Complete installation and setup of the Mobile X-Ray Machine as per manufacturer's instructions				
21.	Training				
21.1.	User Training	On site user training on operation and daily up keep for 3 weeks			
21.2.	Maintenance training	Onsite maintenance training on preventive maintenance			
22.	Technical documentations				
22.1.	User manuals	2 Sets			
22.2.	Service Manual	1 Set			
22.3.	Drawings	Nil			
23.	Commissioning				
23.1.	Testing and commissioning of the machine including calibration and radiation testing to the satisfaction of the user.				
24.	Warranty				
24.1.	Equipment	Minimum of one year after commissioning on all parts.			
24.2.	Equipment System	Nil			
25.	Maintenance contract				
25.1.	Capacity to provide maintenance and repair service		Vendor/manufacturer shall have adequate facilities, spare parts, qualified and skilled technical staff to offer comprehensive maintenance contract for 10 years		
25.2.	Comprehensive preventive and repair service		Provision for a comprehensive preventive and repair maintenance service contract including parts and material for a period of		

Item Code No.	Department	Section	Item Description
Lot 9-29	Intensive Care Unit	Critical Care Unit	Mobile X –Ray Unit
			10 years from commissioning date (see attached annex for details)

LOT 9-30 Portable Suction Units

Item Code No.	Department	Section	Item Description
LOT 9-30	Intensive Care Unit	Critical Care Unit	Portable Suction Unit
1. General Description			
Suction machine suitable for use in theatre, for both adult and pediatric use. Should be constructed from coated non-corrosive, extreme heat resistance material and electrically insulated and mobile on antistatic castors φ 60 mm, 2 No. lockable, with high level push handle.			
2. Composition			
2.1.	Main unit		
3. Performance Specifications			
3.1.	Main Unit		
3.1.1.	High flow rate	40 litres per minute.	
3.1.2.	Suction vacuum	Maximum 700mmHg	
3.1.3.	Suction pump	oil free	
3.1.4.	Jars	2 X 2 liter polycarbonate autoclavable and unbreakable complete with overflow devices and valves.	
3.1.5.	Vacuum gauge	Graduated in mmHg and kPa.	
3.1.6.	Vacuum control	Adjustable at the front panel	
3.1.7.	Switch	Main on front panel and foot switch (water proof type)	
3.1.8.	Cable towage	On back with reversible cleats	
3.1.9.	Anti-bacterial filters	Available preferable autoclavable	
3.1.10.	Suction tubing connection	Antistatic neoprene or silicone	
3.1.11.	Safety	Overflow pump protection	

Item Code No.	Department	Section	Item Description
LOT 9-30	Intensive Care Unit	Critical Care Unit	Portable Suction Unit
3.1.12.	Handle	High level push handle type	
3.1.13.	Movements	Mobile on four antistatic castors 2 No. lockable.	
4.	Physical characteristics		
4.1.	Main unit	Mobile on castors with push handle	
5.	Operating environment		
5.1.	Power Requirements	240V, A/c 50 Hz, Single phase, 3 Pin Plug BS standard, 3m long cord with PE	
5.2.	Ambient temperature	10^{o} C to 40^{o} C	
5.3.	Relative humidity	20% to 90%	
6.	Accessories	The following accessories will be provided as startup kits.	
6.1.	Sterilizable, silicone tubing	5 Set	
6.2.	Bacterial filters	1 Box	
6.3.	Foot switch	1 No.	
6.4.	Cannula with handle for general purpose	4 Sets	
7.	Quality standards		
7.1.	Manufacturing standards	EN 10079-1, IEC 60601-1, ISO 9001, ISO 13485	
7.2.	Conformity to standards	CE and FDA marked	
8.	Local back up service		
8.1.	Available	Should be available locally	
8.2.	Capacity to service equipment	Agent shall have adequate facilities, spare parts, and qualified and skilled technical staff	
9.	Delivery point		
9.1.	See Schedule	For inspection and testing	
9.2.	Nil		

Item Code No.	Department	Section	Item Description		
LOT 9-30	Intensive Care Unit	Critical Care Unit	Portable Suction Unit		
10.	Pre installation requirements				
	Nil				
11.	Installation and testing				
	Complete installation and setup of the machine as per manufacturer's instructions				
12.	Training				
12.1.	User Training	On site user training on operation and daily up keep			
12.2.	Maintenance training	Onsite maintenance training on preventive maintenance			
13.	Technical documentations				
13.1.	User manuals	2 Sets			
13.2.	Service Manual	1 Set			
13.3.	Drawings	Nil			
14.	Commissioning				
14.1.	Testing and commissioning of the machine to the satisfaction of the user.				
15.	Warranty				
15.1.	Equipment	Minimum of one year after commissioning on all parts.			
15.2.	Equipment System	Nil			

LOT 9-31 Central monitoring system (Set based on the total number of beds to be installed)

Item Code No.	Department	Section	Item Description
LOT 9-31	Intensive Care Unit	Critical Care Unit	Central Monitoring System (Set based on the total number of beds to be installed)
1. General Description			
Central monitoring system complete with 10 bedside monitors for ICU. Should be capable of monitoring the following parameters in adults, neonatal and pediatric.at both bedside and centrally • SpO_2			

Item Code No.	Department	Section	Item Description		
LOT 9-31	Intensive Care Unit	Critical Care Unit	Central Monitoring System (Set based on the total number of beds to be installed)		
• Temperature • Blood pressure both NIBP and IBP • cardiac output • ECG • Respiration • CO_2 • Pulse Rate					
2. Composition					
2.1.	Central workstation with CPU and software	1 pc			
2.2.	Bedside monitor with docking station	10 pcs			
2.3.	Printer	1 pc			
2.4.	UPS (1.25 times POWER rating of the equipment)	1pc			
3. Performance Specifications					
3.1.	Central work station				
3.1.1.	The unit should be a model or type on current production composed of a CPU and display screen. Medical grade products				
3.1.2.	Display Screen				
3.1.3.	Size	Minimum 22” touch screen (2 No.)			
3.1.4.	Type	LCD, colour, with navigation rotary knob			
3.1.5.	Parameters	Capable of displaying all vital sign in graphic waveform and parameters emanating from at least Six remote bed side monitors,			
3.1.6.	Real time	Displays real time vital sign parameters			
3.1.7.	Alarm limit	Can be set on the screen			
3.2.	CPU				
3.2.1.	Size	Minimum 2TB			
3.2.2.	Performance	Complete with hardware and window-based software for networking and displaying vital sign from all the six			

Item Code No.	Department	Section	Item Description
LOT 9-31	Intensive Care Unit	Critical Care Unit	Central Monitoring System (Set based on the total number of beds to be installed)
		monitors to the central monitor, by both wireless and wired technology	
3.2.3.	Software	Pre-installed in the CPU	
		Capable of analysis and displaying waveform and parameters from all the monitors connected	
		Capable of monitoring bedside monitors parameters through wired and wireless technology	
		Capable of displaying MRI, CT,, and X-Ray images in DICOM format	
		DICOM compatible, Can also access internet	
3.3.	**Bed side monitors** (10 No.)		
3.3.1.	Type	Wall Mounted type, complete with internal rechargeable battery	
3.3.2.	Parameter & waveforms	SpO2, Pulse rate, ECG, NIBP, IBP, cardiac output, Respiration, CO2 and temperature	
3.3.3.	SpO_2, with reusable sensor	0 - 100% ± 3%	
3.3.4.	Pulse Rate	30-300 bpm ± 1%	
3.3.5.	Temperature	$0\text{-}50^0C$ ± 0.1%	
3.3.6.	NIBP	Mean 10- 300mmHg ± 5 mmHg	
3.3.7.	IBP X2	Mean 0 – 300mm Hg ± 1 mmHg	
3.3.8.	ECG	With standard lead and Derived 12 lead	
3.3.9.	CO_2	0 to 99 mmHg ± 4 mmHg	
3.3.10.	Display	Minimum 12.0 inches /colour touch screen / scroll type	
3.3.11.		6 to 8 waveforms with large font	
3.3.12.	Networking	Wireless and wired connection to the central work station	
3.3.13.	Storage	Capable of storing patient data and transferring to the central workstation for viewing or printing.	
3.3.14.	Audio and visual alarm	For all parameter.	
3.3.15.	Alarm setting limits	Adjustable by user	

Item Code No.	Department	Section	Item Description
LOT 9-31	Intensive Care Unit	Critical Care Unit	Central Monitoring System (Set based on the total number of beds to be installed)
3.3.16.	Low battery indicator	Audio and visual alarm	
3.3.17.	Power Requirement	Rechargeable internal battery, that can last at least 3 hours when fully charged	
3.4.	Wireless networking	Latest technology.	
4.	Physical characteristics		
4.1.	Main unit		
4.2.	Central workstation	To be installed in the Nursing station	
4.3.	Bed side monitors	To be wall mounted. Should be capable of rotating.	
4.4.	Printer	Central printer, laser type, to print when necessary	
5.	Operating environment		
5.1.	Power Requirements	240V, A/c 50 Hz, Single phase, 3 Pin Plug, 3m long cord BS type with PE	
5.2.	Internal rechargeable battery	Maintenance free type, Up to 3 hours operating time	
5.3.	Ambient temperature	10^{o} C to 40^{o} C	
5.4.	Relative humidity	20% to 90%	
5.5.	UPS	True-On-Line Double conversion	
6.	Accessories	The following accessories will be provided as startup kits.	
6.1.	ECG connection lead and reusable electrodes	1 Set	
6.2.	SpO_2 connection cable and sensor (finger probe), reusable	2 Sets	
6.3.	Adult cuff	3 Sets	
6.4.	Peadiatric cuff	2 Sets	
6.5.	Temperature connection cable	2 Sets	

Item Code No.	Department	Section	Item Description		
LOT 9-31	Intensive Care Unit	Critical Care Unit	Central Monitoring System (Set based on the total number of beds to be installed)		
	and probe (reusable)				
6.6.	Grounding lead	1 No.			
7.	Quality standards				
7.1.	Manufacturing standards	IEC 60601-1, ISO 9001, ISO 13485			
7.2.	Conformity to standards	Directive 2004 / 108 / EC, CE and FDA marked			
8.	Technical documentations				
8.1.	User manuals	2 Sets			
8.2.	Service Manual	1 Set			

LOT 9-32 **Emergency Trolley**

Item Code No.	Department	Section	Item Description
LOT 9-32	Intensive Care Unit	Critical Care Unit	Emergency Trolley
1. General Description			
Resuscitation trolley for use in ICU. Epoxy coated mild steel, with drawers, protection perimeter and defibrillator holder. The Unit should be mobile on four castors, 2 lockable			
2. Composition			
2.1.	Main unit,		
3. Performance Specifications			
3.1. Main Unit 3.1.1. Should be durable with Ergonomic handle and should have easy grip 3.1.2. Height should be 40-45” 3.1.3. Should have 6-8 drawers of sizes 3x3”,2x6”,1x9”			

3.1.4. Should have interchangeable 3",6",9" drawers which run smoothly on good quality channels 3.1.5. Should have provision of side storage which allows storage of variety accessories like can, storage bins, glove storage, sharp container set 3.1.6. An over bridge can with baskets, shelves and bins to keep important things 3.1.7. Should have AMS top surface & advance polymer material which is easy to clean. It should not dent, chip flake or corrode 3.1.8. Should be easily rolling and has toe brakes 3.1.9. Should have I.V. pole with clamps ach 3" drawer should have provision for 25-30 compartments 3.1.10. Should have twin swivel castors & central lock 3.1.11. Should be CE and ISO 9001/2000 and FDA approved 3.1.12. Should have CPR board & O2 cylinder holder

LOT 9-33 General Purpose Trolley

Item Code No.	Department	Section	Item Description
LOT 9-33	Intensive Care Unit	Critical Care Unit	General Purpose Trolley
1. General Description			
General purpose trolley constructed from epoxy coated mild steel frame, with shelves. The Unit should be mobile on four castors , 2 lockable			
2. Composition			
2.1.	Main unit,		
3. Performance Specifications			
3.1.	Main Unit	Mobile type	
3.1.1.	Material	Epoxy coated mild steel	
	Shelves	Two stainless Steel shelves with three guard rails on each	
3.1.2.	Top	Stainless steel tray with three guard rails	
3.1.3.	Castors	Provided, heavy duty, , 2 with brakes	
3.1.4.	Push/Pull handle	Provided	
4.	Quality standards		
4.1.	Manufacturing standards	ISO 9001	
4.2.	Conformity to standards	CE approved	
5.	Delivery point		

Item Code No.	Department	Section	Item Description
LOT 9-33	Intensive Care Unit	Critical Care Unit	General Purpose Trolley
5.1.	See Schedule	For inspection, installation and testing	
5.2.	Nil		

LOT 9-34 Dressing Trolley

Item Code No.	Department	Section	Item Description
LOT 9-34	Intensive Care Unit	Critical Care Unit	Dressing Trolley
1. General Description			
Dressing trolley constructed from stainless steel frame, with shelves, bowl, and bucket. The Unit should be mobile on four castors 2 lockable			
2. Composition			
2.1.	Main unit		
3. Performance Specifications			
3.1.	Main Unit	Mobile type	
3.1.1.	Material	All Stainless Steel, High grade	
	Shelves	Two stainless Steel shelves with three guard rails on each	
3.1.2.	Top	Stainless steel tray with three guard rails	
3.1.3.	Bucket	Provided, Stainless steel	
	Bowl	Provided, Stainless steel	
3.1.4.	Castors	Provided, heavy duty, 2 with brakes	
	Push/Pull handle	Provided, Stainless Steel	
4.	Quality standards		
4.1.	Manufacturing standards	ISO 9001 or any other internationally recognized standards	
	Conformity to standards	CE approved	
5.	Delivery point		
5.1.	See Schedule	For inspection, installation and testing	
5.2.	Nil		

LOT 9-35 Patient Trolleys

Item Code No.	Department	Section	Item Description
LOT 9-35	Intensive Care Unit	Critical Care Unit	General Purpose Trolley
1. General Description			
General purpose trolley constructed from epoxy coated mild steel frame, with shelves. The Unit should be mobile on four castors, 2 lockable			
2. Composition			
2.1.	Main unit,		
3. Performance Specifications			
3.1.	Main Unit	Mobile type	
3.1.1.	Material	Epoxy coated mild steel	
	Shelves	Two stainless Steel shelves with three guard rails on each	
3.1.2.	Top	Stainless steel tray with three guard rails	
3.1.3.	Castors	Provided, heavy duty, , 2 with brakes	
3.1.4.	Push/Pull handle	Provided	
4.	Quality standards		
4.1.	Manufacturing standards	ISO 9001	
	Conformity to standards	CE approved	
5.	Delivery point		
5.1.	See Schedule	For inspection, installation and testing	
5.2.	Nil		

LOT 9-36 Baby Cots

Item Code No.	Department	Section	Item Description
LOT 9-36	Intensive Care Unit	Critical Care Unit	Baby Cot
1. General Description			

Item Code No.	Department	Section	Item Description
LOT 9-36	Intensive Care Unit	Critical Care Unit	Baby Cot

Baby Cot for use in ICU.

- Dimensions L124.5 x W67.5 x H93cm
- Mattress Size Required L120 x W60cm
- Finish White
- one-handed drop side mechanism
- Designed with narrow bars on every side so baby can see out, while parents can easily see in.
- Distressed nickel handles
- Large under cot storage drawer
- 3 position mattress base height
- Sturdy all-stainless steel SS304 frame

2.	Quality standards		
2.1.	Manufacturing standards	ISO 9001 or any other internationally recognized standards	
	Conformity to standards	CE Approved	
3.	Delivery point		
3.1.	See Schedule	For inspection, installation and testing	
3.2.	Nil		

LOT 9-37 CPAP Machine

Item Code No.	Department	Section	Item Description
LOT 9-37	Intensive Care Unit	Critical Care Unit	CPAP Machine

1. General Description					
CPAP machine suitable for neonatal, mobile on castors					
2. Composition					
2.1.	Main unit				
3. Performance Specifications					
3.1.	Main Unit	Potable, mounted on stand with castors			
3.1.1.	Performance	Continuous supply of air blended with oxygen to newborn			
3.1.2.	Generator	Provided, silent operation			

Item Code No.	Department	Section	Item Description		
LOT 9-37	Intensive Care Unit	Critical Care Unit	CPAP Machine		
3.1.3.	Output pressure	Adjustable by user			
3.1.4.	Concentration	Adjustable by user			
3.1.5.	Display	large LCD display, of pressure, concentration and breathing			
3.1.6.	Control	microprocessor based			
3.1.7.	Alarm	Visible and audio apnea, adjustable by user			
3.1.8.	Power supply	Internal rechargeable battery charging on, 240V, 50 Hz ac			
3.2.	Mounting	On mobile stand with castors, two with brakes			
4.	Quality standards				
4.1.	Manufacturing standards	IEC 60601-1, ISO 9001 and ISO 13485			
	Conformity to standards	CE and FDA marked			
5.	Local back up service				
5.1.	Available	Should be available locally			
5.2.	Capacity to service equipment	Agent shall have adequate facilities, spare parts, and qualified and skilled technical staff			
6.	Delivery point				
6.1.	See Schedule	For inspection, installation and commissioning			
7.	Technical documentations				
7.1.	User manuals	2 Sets			
7.2.	Service Manual	1 Set			
7.3.	Drawings	Nil			
8.	Commissioning				
8.1.	Testing and commissioning of the machine to the satisfaction of the user.				
9.	Warranty				
9.1.	Equipment	Minimum of one year after commissioning on all parts.			
9.2.	Equipment System	Nil			

LOT 9-38 Ripple Mattress

Item Code No.	Department	Section	Item Description		
LOT 9-38	Intensive Care Unit	Critical Care Unit	Ripple Mattress		
1. General Description					
Ripple Mattresses					
2. Composition					
2.1.	Main unit				
3. Physical Specifications					
3.1.	Main Unit				
3.1.1.	Type	Electrical operated			
3.1.2.	Material	Water proof easily washable			
3.1.3.	Size	To fit ICU Bed			
4.	Quality Standards				
4.1.	Manufacturing standards	ISO 9001 and 60601, ISO 13485			
4.2.	Conformity to standards	Directive 2004 / 108 / ECCE, FDA marked and IP X4 electrical protection standard			

LOT 9-39 Transport Resuscitation Kit

Item Code No.	Department	Section	Item Description		
LOT 9-39	Intensive Care Unit	Critical Care Unit	Transport Resuscitation Kit		
1. General Description					
2. Composition					
2.1.	Main unit				
3. Transport Emergency Resuscitation Kit-Adult **3.1.** To have Retromolar Intubation fiberscope for unexpected difficult airways. a. Tip Distal Bending 40°. b. To be movable eyepiece c. To have a light source connection					

Item Code No.	Department	Section	Item Description
LOT 9-39	Intensive Care Unit	Critical Care Unit	Transport Resuscitation Kit

d. With length 40-42cms and dia 5-6 cms.
e. ET tube holder should be provided
f. Should take min. 5.5 size of ET tube

3.2. Portable LED light source should be provide
a. with illumination not less than 50000 Lux
b. should run on two 3v photo batteries
c. burning life should be more than 100 minutes
d. ergonomically designed and can be connected to both the fibre scopes
e. life of LED should be close to 50000 hrs

3.3. One Laryngoscope with rechargeable battery pack and blade with fibre optic mechanism should be provided to be used on both adult and pediatric patients with charger.
3.4. Other accessories like, magill forceps should be provided.
3.5. Should have Emergency Cricothyroidotomy for pediatric and adult
a. disposable blades
b. dilator

3.6. Should have Combitube size 37Fr. i. with complete kit
3.7. Should have Intubating Laryngeal Mask Airways with Following Components:
a. ILMA Sizes 3 & 4.
a. ILMA Tubes ID 7mm & 7.5mm.
b. Tube Stabilizing rod
c. Cuff deflator

3.8. Should have Laryngeal Mask Airways
a. sizes 1,2 and 4

3.9. Handy and strong brief case /bag should be provided to keep all the instruments safe.
3.10. Set of disposable percutaneous tracheotomy kit for adult and pediatric.
3.11. Should have standard AMBU bag for pediatric and adult.
3.12. Mechanical suction pump with suction catheter and stomach tubes.
3.13. Should have Aluminum Oxygen reservoir 2 Liter with oxygen tube and cather.
3.14. Oxygen pressure reducer, regulable 0-15 liter with coupler for respirator.
3.15. Ventilating bag
3.16. Lubricant
3.17. Blood pressure meter, boso K-II
3.18. Stethoscope
3.19. Rescue blanket gold/silver
3.20. Infusion system.

LOT 9-40 Blood Gas Analyzer

Item Code No.	Department	Section	Item Description		
LOT 9-40	**Intensive Care Unit**	**ICU Lab**	Blood Gas Analyzer		
A. Performance and safety requirement for the equipment to be placed					
1. General Description Blood gas analyzer, capable of measuring at minimum pCO2, pO2, pH, K+, Na+, Cl-, Ca++ and at least 15 calculated parameters in whole blood, serum and plasma. The unit should be automatic, with electronic digital read out, dilutor and in built printer.					
2. Composition					
2.1.	Main unit				
3. Performance Specifications					
3.1.	Main Unit				
3.1.1.	Measuring parameters	pCO2, pO2, pH, K+, Cl-, Ca++			
3.1.2.	Calculated parameters	At least 15 parameters			
3.1.3.	Sample volume	About 150µl			
3.1.4.	Measuring time	about 2-5 seconds			
3.1.5.	Temperature correction	Automatic			
3.1.6.	Display	Large LCD display			
3.1.7.	Printer	In built			
3.1.8.	Key pad	Soft			
4.	Physical characteristics				
4.1.	Main unit	Bench top			

EAKI PROJECT DEPARTMENTAL EQUIPMENT LISTING

Item Code No.	Department	Section	Item Description
LOT 9-40	**Intensive Care Unit**	**ICU Lab**	Blood Gas Analyzer
		Robust construction and easy to clean	
5.	Operating environment		
5.1.	Power Requirements	240V, A/c 50 Hz, Single phase	
	Ambient temperature	10^{o} C to 40^{o} C	
	Relative humidity	20% to 90%	
6.	Accessories		
6.1.	True online UPS (1.25 X the power rating of equipment)		
7.	Quality standards		
7.1.	Manufacturing standards	IEC 60601-1, ISO 9001, ISO 13485 and UL 3101-1	
	Conformity to standards	IVD- Directive 98/79/EC (IEC 1010-1),CE and FDA marked	
8.	Delivery point		
8.1.	See Schedule		
9.	Installation, testing and commissioning		
	Complete installation and set-up of the machine as per manufacturer's instructions		
B**: Reagents and consumable supply** 10. Start-up Kits Controls & calibrates must be provided for all the Tests			
D:Training of user and maintenance staff			
11.	User Training	See Schedule on-site user training on operation and daily up keep for two years renewable	

EAKI PROJECT DEPARTMENTAL EQUIPMENT LISTING

Item Code No.	Department	Section	Item Description
LOT 9-40	**Intensive Care Unit**	**ICU Lab**	Blood Gas Analyzer
11.1.	Maintenance training	Scheduled on-site maintenance training on preventive maintenance for two years renewable	

Drawn by:

Name: ……. Signature ……Date: ……

Reviewed by:

Name……... Signature ……Date ……...

Confirmed by:

1. Name: ……... Signature……Date ……
2. Name: ……. Signature…… Date….....
3. Name……Signature…… Date……