ACU/PS/AHRC/C.Tender/ 211 /2021-22 Date: 09 JUN 2021

TENDER NOTIFICATION

Adichunchanagiri University is inviting **closed tenders** for the supply of equipment for ICU's of Adichunchanagiri Hospital and Research Centre from the competitive firms.

1	Name of the work	Supply of equipment for ICU, NICU, & PICU of AHRC.
2	Tender documents available for download	11-06-2021 to 22-06-2021 up to 5:00 PM

Sl. No.	Name of the Equipment/Instrument	Quantity (in No's)
	Intensive Care Unit -ICU	
1.	Fowler's Cot 5 Function Motorised	1
2.	Fowler's Cot 5 Function Manual	1
3.	Bedside Locker	1
4.	Cardiac table	1
5.	Multi-Channel Monitors without ETCO2	1
6.	Multi-Channel Monitors with ETCO2	1
7.	Defibrillator	1
8.	Syringe Pumps	1
9.	Infusion Pump	1
10.	ECG Machine	1
11.	Crash cart	1
12.	Electrical Suction Apparatus	1
	Neonatal Intensive Care Unit-NICU	
13.	Infant Warmers	1
14.	Phototherapy	1
15.	Syringe pump	1
16.	Pulse Oximeters	1
	Paediatric Intensive Care Unit -PICU	
17.	Ventilators	1
18.	HHHFNO	1
19.	Infusion Pumps	1
20.	Patient Monitor	1

Note: Kindly send quotes in 2 bid formats (Technical and Financial bids sealed separately inside the main envelope for individual items) to be addressed to "The Registrar, Adichunchanagiri University, B.G. Nagara -571448, Nagamangala (T), Mandya(D)".

- Adichunchanagiri University reserves all the rights to accept, reject, incorporate changes and re-tender without giving any reasons.

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- The sealed cover must be duly superscripted with the name of the equipment along with the words "ACU/AHRC/ClsdTendr/Ref no./ Ventilators".
- Attach Brochure, Certification of the product, Bank/account details, PAN and GSTIN. **Kindly mention the details of the contact person on the envelope**

Technical Specifications

1. Fowler's cot five function manual

1. Should be a height adjustable, manually operated, four section cot with perforated top.
2. The size should be approximately 2250mm length, 1015mm width and an approximate height adjustable from 520 to 820mm with ±5% tolerance
3. Should have a Trendelenburg and reverse Trendelenburg movements.
4. Should have swivelling non corrosive, fibre / synthetic wheels of 125mm dia. 2 with brake and 2 without brake.
5. Should provide with a detachable and collapsible railing made of stainless steel of minimum 19mm diameter and 18-gauge tubes housed in mild steel tubular frame, with a locking facility for raised position.
6. Should provide with removable heavy duty saline stand made of stainless steel.304 grade. Should have a provision to fix on all four corners of the bed and also in the middle of the bed on either side
7. Should be provided with mattress of 4 section, 4" thick PU foam of 40 density and pillows covered with soft water proof material, PVC rexin
8. Should be supplied with mattress size should be approximately 2010mmx910mmx100mm with 10% tolerance.
9. All MS components should be 7 dip tank pre-treated and epoxy powder coated with 50-60 microns.
10. ICU bed should be of minimum 130Kg weight bearing capacity.
11. All MS Sheets/tubes must be CRCA
12. SS components wherever used should be of 304 grades.

2. BED SIDE LOCKER

1. Overall size: L 40 x W 40 x H 82 cms.
2. Complete **locker** box made of 22G CRC machine pressed sheet closed from three sides and a suitable drawer for extra storage.
3. Stainless steel top.
4. Complete **locker** mounted on two PVC stumps in front and two 5 cms.
5. Pre-treated and epoxy powder coated.

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3. Cardiac table

1. Cardiac table/Hospital adjustable **Table**.
2. Cardiac table/Hospital **table** made with mild steel material.
3. Laminated board Top.
4. Mounted on four 5 cm swivel castors.
5. Manually adjustable Height.
6. Epoxy powder coated.
7. Top size: -76(L)*40(W)cm.
8. Height: -76/106cm.

4. <u>Patient Multiparameter Monitor with Etco2</u>

1. Portable and Light weight preferably <10kg Should have TFT/LCD display with at least 10.4 inches with 4 wave forms and numeric display simultaneously. The waveforms should be user selectable.
2. Portable and Light weight preferably <10kg Should have TFT/LCD display with at least 10.4 inches with 4 wave forms and numeric display simultaneously. The waveforms should be user selectable.
3. Transport Monitor is required to monitor vital parameters of patients during Capability of storage of patient data. Transport monitor should be portable and light weight and should monitor vital parameters of patients.transportation to and from OT; Emergency; Trauma ambulances etc.Should be compact &portable with carrying handle
4. Monitor should have in built Lithium-ion type battery for 4 Hrs continuous operation in case of mains failure.
5. Should have keys for quick access to main functions.
6. Should be able to monitor ECG, SpO2, NIBP, Respiration Rate, ETCO2 & Temperature for adult, paediatric and neonatal patients
7. 3 or 5 Lead ECG monitoring with lethal arrhythmia recognition capability and ST analysis
8. Respiration & Apnoea alarm
9. Manual, Auto and STAT mode for NIBP monitoring and ranges should be 20 to 230 mmHg.
10. Pulse Oximeter (SpO2) with Plethysmograph & Pulse strength indicator with variable pitch with change in SpO2
11. Side-stream Capnography with display of CO2 wave form & digital values (ETCO2, FiCO2, RR).
12. Should have separate volume control for beep sound for QRS and alarm sound.
13. The display setting should have at least 4 user defined setups variable as per applications for flexible use of the monitor in various clinical Environments.
14. Monitor should have networking options

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15. Should have separate volume control for beep sound for QRS and alarm sound.
16. Should provide following accessories
17. Micro stream / Side stream ETCO2 disposable kit for adult-25 nos, paediatric & Neonatal -2 nos. Each
18. Reusable adult 3 or 5 lead ECG cable set – 2 nos.
19. Reusable adult and paediatric SpO2 finger probes – 1 each
20. Disposable SpO2 probes for neonatal use- 10 nos.
21. NIBP cuffs for standard Adult, Obese Adult, Child and infant – all 1 each

5. Multiparameter Patient Monitor

1. Should have TFT/LCD display with at least 10.4 inches with 4 wave forms and numeric display simultaneously. The waveforms should be user selectable.
2. Should be compact &portable with carrying handle
3. Monitor should have in built Lithium-ion type battery for 4 Hrs continuous operation in case of mains failure.
4. Should have keys for quick access to main functions.
5. Should be able to monitor ECG, SpO2, NIBP, Respiration Rate & Temperature for adult, paediatric and neonatal patients
6. 3 or 5 Lead ECG monitoring with lethal arrhythmia recognition capability and ST analysis
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10. Side-stream Capnography with display of CO2 wave form & digital values (ETCO2, FiCO2, RR).
11. Should have separate volume control for beep sound for QRS and alarm sound.
12. The display setting should have at least 4 user defined setups variable as per applications for flexible use of the monitor in various clinical Environments.
13. Monitor should have networking options
14. Should have separate volume control for beep sound for QRS and alarm sound.
15. Should provide following accessories
    a. Reusable adult 3 or 5 lead ECG cable set – 2 nos.
    b. Reusable adult and paediatric SpO2 finger probes – 1 each

6. DEFIBRILLATOR

1. Biphasic, Manual and AED with voice prompt, compact and light weight

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2. Energy selection 5J to 200J in steps.
3. Momentary energy selection access on front panel.
4. Should have adult and paediatric paddles integrated on same handle.
5. Momentary charge key on front panel and on the apex hand.
6. Monitor should display selected and delivered energy
7. Should have disarm facility.
8. Energy should be delivered within 30ms after the detected R wave in synchronization mode.
9. Charging time maximum 5 sec for 200J.
10. Should have battery backup for 50 discharges of 200J.
11. Should have ECG inputs through paddles or 3 lead cables.
12. Should have display for selected ECG input source (I, II, III, paddles)
13. Lead off message should appear with alert tone.
14. Amplitude gain of ECG waveform should be adjustable
15. Should have display for heart rate.
16. Should have alarm for high and low HR.
17. Should have an inbuilt thermal recorder.
18. Should have enable/disable option for printer.
19. Should supply 2 bottle of jelly, 12 roll of thermal paper.
20. Should supply three pairs of AED pads
21. Should operate on mains 230V, 50Hz
22. Should have safety certificate from a competent authority CE / FDA (US).

7. <u>Syringe Pump</u>

1. Should be easy to use and nurse friendly.
2. Should have automatic syringe size and model detection
3. Should have large format LCD/TFT display.
4. 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.
5. Syringe range from 20-50/60 ml.
6. Should have a flow rate accuracy of ±2%
7. Should have a bolus rate up to 1000ml/hr for 50 ml syringe.
8. Should have automatic and manual bolus.
9. Should have at least 3 levels of programmable occlusion pressure.

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10. Should have automatic bolus reduction system to avoid accidental bolus delivery after occlusion incident.
11. Should have a rechargeable battery with back up time of minimum 3 hours.
12. Pump must trigger following alarms with visual indication: -
    - Occlusion Pressure Alarm
    - KVO or 3 min pre- alarm
    - Syringe empty and volume infused alarm
    - Internal malfunction and Battery Charge Low Alarm v. Syringe disengaged and incorrectly placed alarm
    - Alarm loudness control. vii. No mains
    - Line disconnected (rapid pressure drop).
13. Should work with input 200 to 240Vac 50 Hz supply.
14. Should have safety certificate from a competent authority CE/FDA (US).

8. Infusion Pump

1. Should be operated on drip rate Peristaltic finger pump method.
2. Should compatible with most of the IV set (macro/micro drip sets).
3. Should have the following flow rates.
4. IV Set ml/hr drops/min

   15 drops/ml 3~450ml/hr 1~100drops/min

   20drops/ml 3~450ml/hr 1~100drops/min

   60drops/ml 1~100ml/hr 1~100drops/min
5. Should have a flow rate accuracy of ±10% and drip rate accuracy of ±2%.
6. Should have a volume infused display from 0 to 999.9ml.
7. Should have a purge and KVO facility.
8. Should have a audible and visual alarm for occlusion pressure, air alarm, door open, empty, low battery.
9. Should have LCD display with backlight and graphical display of infusion Should have a minimum 2hr battery back up at highest delivery rate.
10. Should work with input 200 to 240Vac 50 Hz supply.
11. Should have safety certificate from a competent authority CE / FDA (US)

9. ECG Machine – 3 Channel

1. Simultaneous 3 Channel ECG recording with 12 lead simultaneous acquisition
2. Should have visual alarm for open lead

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3. Should have a digital display of 3 channel ECG
4. ECG Machine should have 3 modes of operation – Automatic, Manual & Rhythm (Not Arrhythmia)
5. Should have a maintenance free digital thermal array printer
6. Printer should work with standard thermal paper (should be available in Local Market)
7. Printer should be able to print ECG report and should have on/off options
8. Should be compact and portable, and should have carry handle for portability
9. Should have ECG lead annotation facility
10. Equipment should have sufficient battery backup for taking minimum 2 hours ECG without AC power
11. Should supplied with2 patient cable sets, 8 clips on electrodes,12 chest electrode with silicone rubber bulb, 12 packets / Rolls of recording paper & 1 bottle of jelly.
12. Should operate on mains(220v-50Hz) and rechargeable battery (built in)
13. Recording speed should be 25 mm/ sec and 50 mm/ sec.
14. Should have defibrillation protection.
15. CMRR should be >90dB or the Sampling rate should be > 7000
16. Frequency response 0.05Hz to 129 Hz.
17. Should have a digital filter for AC and EMG.
18. Should have safety certificate from a competent authority CE / FDA certificates

10. Crash Cart

Size -960 L x 500 W x 1545 H mm approx.

1. Trolley with 25 mm diameter SS tubular frame
2. Drawers maximum number possible of adequate size
3. Flat surfaces should be stainless steel.
4. Two/three rows of hand out bins of different size & color to hold different sizes of ampoules/vials of emergency medicine.
5. Light weight plastic box with drawers of different sizes and colors to hold emergency medicines, ambu bag, IV solution, catheters etc. separately.
6. Facility to carry monitor & suction apparatus.
7. Stainless steel saline rod-one.
8. Castor wheels of 12.5 cm dia- Two having locking arrangement.
9. Pull out cardiac massage board above drawers.
10. Oxygen cylinder stands on one side.

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11. All parts should be epoxy polyester coated with 50-micron thickness approx. ebonite rubber, PVC and castor wheel etc.
12. Whole crash cart should be washable.
13. All the Stainless Steel should be 304 grade/16 gauge

11. ELECTRICAL SUCTION APPARATUS

1. Rating of Motor-continuous
2. SuctionBottleCapacity-2x2000mlminimum (with safety valve)
3. Gauge- 0 to760 mmHg
4. Pump- Oil lubricates rotary pump
5. SuctionTubing's-ID7mm,5mlongandnon-collapsible.
6. Should have air tight lids.
7. Should have a noiseless Operation
8. Shouldprovidefiltertoabsorbmoistureandwaterparticlesenteringintothe rotor.
9. Should have an external provision for topping up of lubricant.
10. Should be well-designed, cabinet made of mild steel powder coated
11. Should bear ISI mark
12. Volt- 230V ac

NICU	
1.	**BABY WARMER**
	1. The unit should be made of mild steel tubular structure pre-treated and powder coated 2. Heater Rotation ±90° to the side to facilitate X-ray procedures 3. The heater should automatically shuts off when in this position 4. Bed Tilt should be ±15° Trendelenburg and Reverse Trendelenburg, continuous tilt 5. Mattress density should be approx. 21-25 kg/m3 and removable, washable, water proof cover 6. Mattress density should be approx. 21-25 kg/m3 and removable, washable, water proof cover 7. System Control specifications 8. Should have microprocessor-based heater control and manual modes of operation 9. Should have user friendly control panel with large easy to read LED displays for actual (patient and air temperature) and set temperatures. 10. Should have Quartz Infrared Heater with parabolic reflector for uniform heat Radiation. 11. The heater unit should be protected by a suitable grill. 12. The heater unit should be swivelling type and should be swivelled effortlessly. 13. The probes should be detachable type. 14. Should have calibration free temperature sensors.

15. Should have alarms with visual indicators for the following
    - Temp high
    - Temp low
    - Probe failure
    - Power Heater failure
16. The heater should automatically cut off at 38 degree Celsius irrespective of the set parameters.
17. Should have an examination light with ON/OFF switch.
18. Should work with input 200 to 240Vac 50 Hz supply
19. Should have 0-650 W heater output
20. Heater output should be adjustable from 0 - 100% in 5% increments
21. servo Control should be between 30 - 38°C in increments of 0.1°C
22. Manual Mode should Indicate manual mode heat selection range from: 0-100% in 5% increments
23. Temperature Measurement Accuracy specification: ±0.3°C @ 30°C to 40°C
24. Temperature Display Resolution specification: ±0.1°C
25. Temperature Probe Accuracy specification: ±0.1°C @ 30°C to 42°C
26. Humidity range: 30 to 95% RH
27. Regulatory Compliance specification
28. Should have safety certificate from a competent authority CE
29. Copy of the certificate / test report shall be produced.

2. PHOTOTHERAPY MACHINE-DOUBLE SURFACELED

1. LED's should last for at least 30,000 hours
2. Light unit should have white LEDs for examination purpose
3. Light unit should be made of easily cleanable plastic material
4. Spectral Irradiance of minimum 30 $\mu W \cdot cm^{-2} \cdot nm^{-1}$ at 45 cm distance between bed and light unit. (For effective PT through closed incubator)
5. Should have multilevel intensity control to a minimum intensity adjustment of $30 \mu W \cdot cm^{-2} \cdot nm^{-1}$
6. At the tilted position, the irradiance should be at least 30 $\mu W \cdot cm^{-2} \cdot nm^{-1}$ at 45 cm distance between bed and light unit.
7. Wavelength should be of 450 – 460 nm, and should be free from UV and IR radiation.
8. Effective surface area should be at least 175 *3750 mm
9. Digital (LCD) Timer for monitoring therapy hours & lamp usage hours
10. Should have visual and audible alarms for the following,
    - If internal temperature exceeds
    - If cooling fan fails
11. Cooling Fan to be provided to dissipate the heat created by LED's
12. Light head should be compact to use along with the Radiant warmer & should be provided with tilting facility so that the unit is not coming directly under warmer.
13. Smooth Height adjustment mechanism & Adjustable height
14. Minimum height should be at least 1200 ± 20 mm from the floor to use near the mother bed
15. Maximum height should be at least 1700 ± 20 mm from the floor to use with the incubator
16. Coating: Epoxy/powder coated body for scratch and rust prevention and PU (Poly Urethane) coating for plastic
17. Mobility: Three castors; two rear castors provided with brakes
18. The base of the unit should be such that it will go beneath any Incubator/bed/trolley, with minimum of 100 mm floor clearance

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19. The manufacturer should be ISO 9001:2008 and ISO 13485:2003 certified
20. Product should be European CE certified and certificated should be submitted.
22. The specification for bottom unit should confirm to the following
    - Irradiance: > 30 W/cm2/nm
    - Lamp Type: LED's
    - Power rating: Maximum – 60 W
    - Time totalises: Digital, Compact and noise free
    - Bassinet dimensions: Approximately 75 cm x 50 cm x 15
    - Weight of lamp unit: Less than 25 kg
    - Bassinet: Transparent acrylic bassinet
    - Coating: Epoxy/powder coated body for scratch and rust presentation
    - Should conform to IEC-60601 safety standards
    - Should occupy only very little bedside space for convenience in observation and procedures.
    - The unit should be mobile with 4 swivel castors and at least 2 castors with brake
23. Power supply - Power input to be 220-240VAC, 50Hz
24. Items covered under warranty/CMC
    - Prices of consumables should be quoted separately and the prices should be frozen for the period of warranty and CMC.
25. Environmental factors
    - The unit shall be capable of being stored continuously in ambient temperature of 0-50deg C and relative humidity of 15-90%
    - The unit shall be capable of operating continuously in ambient temperature of 10- 40 deg C and relative humidity of 15-90%
26. On site physical demonstration /training of the equipment to all the end users with all the requested facilities will be mandatory

3.	**SYRINGEPUMP**

1. Should be easy to use and nurses friendly.
2. Should have automatic syringe size and model detection
3. Should have large format LCD /TFT display.
4. Should have a minimum flow rate range from 0.1 – 1200 ml/hr for 50ml syringe, 0.1 – 100ml/hrfor20mlsyringeand0.1–60ml/hrfor10mlsyringe.
5. Syringerangefrom2-50/60ml.
6. Should have a flow rate accuracy of ± 2 %
7. Should have a bolus rate up to1000ml/hr for 50 ml syringe.
8. Should have automatic and manual bolus.
9. Should have at least 3 levels of programmable occlusion pressure.
10. Should have automatic bolus reduction system to avoid accidental bolus delivery after occlusion incident.
11. Should have a rechargeable battery with back uptime of minimum 3 hours.
12. Pump must trigger following alarms with visual indication.
    - Occlusion Pressure Alarm
    - KVO or 3min pre-alarm
    - Syringe empty and volume infused alarm
    - Internal malfunction and Battery Charge Low Alarm
    - Syringe disengaged and incorrectly placed alarm
    - Alarm loudness control.
    - No mains
    - Line disconnected (rapid pressure drop).

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13. Should work with input 200 to 240Vac 50 Hz supply.
14. Should have safety certificate from a competent authority CE / FDA (US) / ST QC CB certificate / STQCS certificate or valid detailed electrical and functional safety test report from ERTL. Copy of the certificate / test report shall be produced along with the technical bid

4. Pulse oximeter

1. Desktop sturdy compact model which is light weight
2. Resistant to motion artifact
3. Able to reliably pick up signal in low perfusion states
4. Should have clinically proven track record to work during motion and very low perfusion conditions.
5. Compatible with reusable and disposable probes
6. Oxygen saturation
   - Range1-100%
   - Resolution1%
   - Accuracy±3at70-100%range
   - Averaging time Selectable(2-16secondsorslowtofast)
7. Pulse rate
   - Waveform Plethysmographic orbar form
   - Range40-230bpm
   - Resolution1bpm
   - Accuracy±3-5bpm
8. Should have Perfusion Index (PI)
9. Should be able to measure parameters reliably in patient<1kgofweight
10. Should be defibrillator proof
11. Large bright LCD display with contrast adjustability
12. Alarms
    - Type of alarm Audible and visual
    - Alarm volume Adjustable
    - HighSpO2Range70-99%
    - LowSpO2Range50-99%
    - Highpulse40-230bpm
    - Lowpulse40-230bpm
    - System alarms Probe failure
13. Trends
    - MemoryAtleast48hourswith2secresolutions
    - Datainterval20sec
    - Display2-24hours
    - Type of display Graphical & tabular display
14. Power
    - 220/240VAC,50/60Hz
    - Rechargeable internal battery
    - Batteryback-upatleast3hours
    - Automatic switch from mains to battery in case of power failure
15. Onsitephysicaldemonstration/trainingoftheequipmenttoalltheendiserswithall the requested facilities will be mandatory.

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PEDIATRIC/NEONATAL VENTILATOR	
Technical characteristics (specific to this type of device)	
1.	Should have facility for Invasive and Non-Invasive ventilation.
2.	Microprocessor Control suitable for Paediatric /Neonatal ventilation;
3.	Should have modes of ventilation equipped with newer modes of ventilation: 3.1) Assist/ Control 3.2) Volume control 3.3) Pressure control 3.4) Pressure support 3.5) SIMV with pressure support (Pressure and volume control) 3.6) PEEP 3.7) Inverse ratio Ventilation 3.8) Non-invasive ventilation-BIPAP, CPAP 3.9) Apnea ventilation, user selectable, volume & pressure control;
4.	Should have built in color screen TFT/LCD display of minimum 8'' (inch) for display of waveforms and monitored value;
5.	Should have inbuilt facility to upgrade with EtcO2.
6.	Should have facility to measure and display of the following parameters: 6.1) Airway Pressure (Peak & Mean) 6.2) Tidal volume (Inspired & Expired) 6.3) Minute volume (Inspired & Expired) 6.4) Respiratory mechanics 6.5) Spontaneous Minute Volume 6.6) Total Frequency 6.7) FiO2 dynamic 6.8) Intrinsic PEEP 6.9) Plateau Pressure 6.10) Resistance & Compliance 6.11) Use selector Alarms for all measured & monitored parameters 6.12) Occlusion Pressure 6.13) Pressure Flow & Volume curves;
7.	Automatic compliance and leakage compensation for circuit and ET tube;
8.	Should have facility of log book, for events and alarms with date & time;
9.	Should have following setting; • Tidal volume (Minimum 10ml, Maximum up to 1500ml); pre-set range for paediatric modes to be provided • Inspiratory pressure (up to 60cm of H2O) • Respiratory rate 1 to 80 bpm • Apnea back up rate • CPAP/PEEP • Pressure support • FiO2 setting range between 21% and 100% • Pause time • Pressure/flow Trigger;

	• Inspiratory flow up to 120 Lpm;
10.	central pipeline connector (to be supplied along with the machines) should be compatible with ventilator;
11.	Disposable Heat Moisture Exchanger, Qty 10 to be supplied with the unit.
12.	User's interface: Manual and Automatic.
13.	Software and/or standard of communication (where ever required) : Inbuilt software;
Physical Characteristics.	
14.	Weight (lbs, kg): <50kg including trolley.
15.	Configuration: • Compatible hanged arm for holding the circuits • Should have caster with braking system;
17.	ENERGY SOURCE (electricity, UPS)
18.	Power Requirements: Input voltage 220 VAC, 50Hz;
19.	Battery operated: • Battery powered alarm for power failure. • Battery charger to be integral to mains power supply, and to charge battery during mains power operation of unit. • Internal, replaceable, rechargeable battery allows operation for at least four hours in the event of power failure.
20.	Tolerance (to variations, shutdowns): Voltage corrector / stabilizer to allow operation at ± 10% of 220V AC. Use of SMPS to correct voltage.
21.	Protection: • Electrical protection, resettable over current breakers or replaceable fuses (fitted in both live and neutral lines) • Leakage.
22.	Power consumption: To be declared by the supplier.
Accessories, Spare Parts.	
23.	Accessories & Spares: • Full face mask pedantries - 5 Nos each of 0,1 and 3 • Nasal cannula for pedantries /neonates- 5 no's • Reusable breathing circuit of silicone material (2Nos) Disposable breathing circuit (10No.s) • Air & oxygen hose- 1 each • Servo controlled Humidifier-1
Environmental And Departmental Considerations.	

24.	Atmosphere / Ambiance (air conditioning, humidity, dust ...): • Operating condition: Capable of operating continuously in ambient Temperature of 10 to 40 deg C and relative humidity of 15 to 90% in ideal circumstances. • Storage condition: Capable of being stored continuously in ambient temperature of 0 to 50 deg C and relative humidity of 15 to 90%.
Standards And Safety.	
26.	Certifications: • FDA (US) & CE (From Notified Body) from authorized third party and BIS/ISO 13485. • Relevant IEC-60601-Part 1 & 2, certificates by a notified agency
27.	Local and/or international: Manufacturer / supplier should have ISO certificate for quality standard.
Training And Installation.	
28.	Training of staff (medical, paramedical, technicians): • Training of users in operation and basic maintenance shall be provided; • Advanced maintenance tasks required shall be documented
Warranty And Maintenance	
29.	Warranty: 3 Years.
30.	Maintenance tasks: • Maintenance manual detailing; • Complete maintenance schedule;
31.	Service contract clauses, including prices: • The spare, accessories & consumables list required for maintenance and repairs in future after guarantee / warranty period should be attached • Free servicing during warranty period;
DOCUMENTATION.	
32.	Operating manuals, service manuals, other manuals: Should provide 2 sets(hardcopy) of:- 1. User, technical, maintenance and service manuals to be supplied along with machine diagram 2. List of equipment and procedures required for routine calibration and maintenance.

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	High Flow Nasal Cannula Therapy device
	Suitable for treatment of Hypoxemic patients with respiratory distress 1. It should be complaint for use on patients in ICU, wards, emergency department 2. It should be single system for treating infants, pediatric and adult patients 3. Inbuilt flow generator capable of delivering wide range of flows:2-25 liters or above in pediatric mode and 10-60 liters or above in adult mode 4. Inbuilt Air/O2 blending and Fio2 monitoring, facility to deliver wide range of oxygen concentration (Fio2) from 21 to 100% 5. It should have inbuilt Air source without need for external compressor 6. Integrated heated humidifier 7. Display to monitor humidity setting, flow, Fio2 and faults 8. Visual and audible alarm indication for: • Tubes disconnect leaks, tube blockages and water out and hardware fault with error codes. Audible power failure alarm 9. Disinfection mode with heated disinfection tube for sterilization of the device after patient use 10. Supplied with heated wire patient breathing tube and nasal cannula of different sizes, tracheotomy interfaces and mask with standard 22 mm medical taper accessories 11. Neonatal and Paediatric nasal cannula should be made of kink proof material and has adhesive wiggle pads to stick on skin to facilitate kangaroo care 12. It should be compatible for use on tracheotomy patients 13. Should have safety certificate from a competent authority CE issued by a notified body registered in the European commission/FDA (US)/ or valid detailed electrical and functional safety test. Copy of the certificate/ test report shall be produced along with the technical bid
	Infusion Pump (paediatric/neonatal)
	1. Should be operated on drip rate Peristaltic finger pump method. 2. Should compatible with most of the IV set (macro/micro drip sets). 3. Should have the following flow rates. 4. IV Set ml/hr drops/min 15 drops/ml 3~450ml/hr 1~100drops/min 20drops/ml 3~450ml/hr 1~100drops/min 60drops/ml 1~100ml/hr 1~100drops/min 5. Should have a flow rate accuracy of ±10% and drip rate accuracy of ±2%. 6. Should have a volume infused display from 0 to 999.9ml. 7. Should have a purge and KVO facility. 8. Should have a audible and visual alarm for occlusion pressure, air alarm, door open, empty, low battery.

	9. Should have LCD display with backlight and graphical display of infusion Should have a minimum 2hr battery back up at highest delivery rate. 10. Should work with input 200 to 240Vac 50 Hz supply. 11. Should have safety certificate from a competent authority CE / FDA (US)
	Patient Monitor (paediatric/neonatal)
	1. Should have TFT/LCD display with at least 10.4 inches with 4 wave forms and numeric display simultaneously. The waveforms should be user selectable. 2. Should be compact &portable with carrying handle 3. Monitor should have in built Lithium-ion type battery for 4 Hrs continuous operation in case of mains failure. 4. Should have keys for quick access to main functions. 5. Should be able to monitor ECG, SpO2, NIBP, Respiration Rate & Temperature for paediatric and neonatal patients 6. 3 or 5 Lead ECG monitoring with lethal arrhythmia recognition capability and ST analysis 7. Respiration & Apnoea alarm 8. Manual, Auto and STAT mode for NIBP monitoring and ranges should be 20 to 230 mmHg. 9. Pulse Oximeter (SpO2) with Plethysmograph & Pulse strength indicator with variable pitch with change in SpO2 10. Should have separate volume control for beep sound for QRS and alarm sound. 11. The display setting should have at least 4 user defined setups variable as per applications for flexible use of the monitor in various clinical Environments. 12. Monitor should have networking options 13. Should have separate volume control for beep sound for QRS and alarm sound. 14. Should provide following accessories a. Reusable neonatal 3 or 5 lead ECG cable set – 2 nos. b. Reusable neonatal and paediatric SpO2 finger probes – 1 each

Note: warranty should be minimum 03 years for all the aforementioned equipment/Instrument

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