King George's Medical University
Uttar Pradesh, Lucknow – 226003, India
Department of Critical Care Medicine

पत्रांक संख्या DCCM/2022/0867 दिनांक 20/10/2022.

सेवा में,

महानिदेशक,
चिकित्सा शिक्षा एवं प्रशिक्षण,
उत्तर प्रदेश, लखनऊ ।

विषय: हाईट्स द्वारा निविदा किये जाने हेतु फेज-03 के 14 मेडिकल कॉलेज की प्रथम एल०ओ०पी० एवं फेज-02 के 08 मेडिकल कॉलेज एवं मेडिकल कॉलेज, जौनपुर की द्वितीय एल०ओ०पी० हेतु उपकरण की तकनीकी विशिष्टिताओं उपलब्ध कराये जाने के सम्बन्ध में ।

महोदय,

कृपया अपने कार्यालय के पत्र संख्या: एम०ई०/पर्चेज/2022/313, लखनऊ दिनांक: 03 अक्टूबर, 2022 का सन्दर्भ ग्रहण करें जिसके माध्यम से हाईट्स द्वारा निविदा किये जाने हेतु फेज-03 के 14 मेडिकल कॉलेज की प्रथम एल०ओ०पी० एवं फेज-02 के 08 मेडिकल कॉलेज एवं मेडिकल कॉलेज, जौनपुर की द्वितीय एल०ओ०पी० हेतु उपकरण की तकनीकी विशिष्टिताओं उपलब्ध कराने का निर्देश दिया गया था ।

उक्त के कर्म में आपको अवगत करना है कि हाईट्स द्वारा निविदा किये जाने हेतु फेज-03 के 14 मेडिकल कॉलेज की प्रथम एल०ओ०पी० एवं फेज-02 के 08 मेडिकल कॉलेज एवं मेडिकल कॉलेज, जौनपुर की द्वितीय एल०ओ०पी० हेतु उपकरण की तकनीकी विशिष्टिताओं का निधारण कर के इस पत्र के साथ संलग्नक कर के आपके समक्ष अन्य कार्यवाही हेतु प्रेषित है ।

आपके सूचनार्थ एवं आवश्यक कारवाही हेतु प्रेषित है ।

धन्यवाद ।

भवदीय,

Prof. Avinash Agrawal
MD, DCC, IFCCM, FICCM, FCCP, (USA)
Head, Department of Critical Care Medicine
King George's Medical University, UP, Ldn.

(डॉ0 अविनाश अग्रवाल)
आचार्य एवं विभागाध्यक्ष,
क्रिटिकल केयर मेडिसिन विभाग,
किंग जॉर्ज चिकित्सा विश्वविद्यालय,
उत्तर प्रदेश, लखनऊ ।

SPECIFICATIONS FOR HOSPITAL BED MULTIFUNCTION WITH MATTRESS
Overall Size: Approx. 2200 mm x 990 mm (L x W) (± 10 mm Engineering Variation)
Bed frame: Approx. 2000 mm x 860 mm (L x W) (± 10 mm Engineering Variation)
Minimum Height (without mattress): 350 mm ± 10 mm (without mattress)
Maximum Height (without mattress): 700 mm ± 10 mm (Without Mattress)
Backrest adjustment up to 70° ± 5°
Knee rest adjustment up to 25° ± 5°
Four section 1.2 mm (18 G) CRCA M.S perforated sheet top for easy breathing of mattress.
Fixed mattress arresters on both sides of Head & Leg sections.
Backrest, knee rest, height adjustment, cardiac chair positions operated by Electromechanical adjustment through Hand remote.
Manual pull lever on both sides of the bed to quickly bring the backrest to a flat position for CPR. Manual CPR assisted with the counterbalance spring mechanism which allows the backrest to come to a flat position without any jerk.
The bed frame is made from 50 mm x 30 mm x 1.8 mm thick and 40 mm x 20 mm x 2.3 ERW tube with proper support and Flat of size 12 mm x 10 mm, 40 mm x 10 mm, 25 mm x 10 mm and 32 mm 6 mm.
The base frame is having expanded tube size of 31.75 mm x 2.0 mm (14 G) for mounting 125mm. Dia. Single Wheel Castors of High-grade synthetic Body with Individual locking system.
Degree indicator on both sides for Backrest positions. It is mounted in a foot side railing.
The bed has ABS/HDPE moulded head & foot panels detachable by hand without the need for any tool. Four corner rubber buffers of 100MM dia.
The mattress base should be removable ABS/ HDPE for easy cleaning.
The bed has ABS/HDPE moulded Safety side railings on both sides. Railings are fitted to the mattress support sections and raised and locked through a spring lock mechanism
Four locations on the bed to hold one stainless steel Saline rod 12 mm dia with 31.7 mm dia x 1.2 mm (18 G) stainless steel SS 304 Grade outer covering tube with a knob to mount the syringe pump. This saline pole is mounted on a round bracket size 40 mm OD x 32 mm ID made from MS tube and welded with the bed frame.
Single section Mattress with 100mm thickness PU foam of 32 Density covered with PVC

Safe Working Load – 230 kg.
Electrical Specifications:
Nominal – 220-240VAC, 50Hz
Switch Mode Power Supply: Operating range with battery (85 V to 265 V) and Operating range without battery (85 V to 265 V), frequency 50/60 HZ and Max ampere 5 A
Electrical Shock Protection: Class I
Protection voltage: 100 to 240 V
Degree of Shock Protection: Type B
Power consumption ideal mode with battery: 24 V
Power consumption at maximum load: 500 VA or less
Liquid Ingress Protection: IPX4
Rechargeable Batteries: 2 X 12 Volt Sealed Lead / Acid Gel.
Battery backup: 10 to 12 complete cycles of full functions.
The lowest bed height should be 35 cm (without a mattress).
Side-rails are provided with stopper levers that can lock them when in use. The lock is constructed so that side rails cannot be unlocked when a load is applied in the downward direction of the side rail or the outward direction of the bed - FOR PATIENT SAFETY.
Back section operation should have Stretch Saver Raise (SSR) mechanism to prevent any pressure build-up on the Patient's abdomen.
All Process Parameters to be as per documented IMS Procedures for Quality Assurance (ISO 9001: 2015/ISO 14001: 2015/ISO 45001: 2018/ISO 13485:2016) Quality Management Systems) & CE/EC conformity.

SPECIFICATIONS FOR DEEP FREEZER: FOUR BODY

1. Internal minimum capacity about 300 L, double door with adjustable at least 4-5 shelves each with separate inner door for better sample protection through minimum sample warming.
2. External casing should be MS sheet made and duly powder coated body, non-corrosive; and stainless-steel inner chamber.
3. Range of temperature should be up to -20 to -40°C (adjustable), temperature deviation of maximum +/- 3°C with the proper display.
4. Control unit should be Microprocessor controlled.
5. Freezer condition monitor – Alarm indicators, maintenance indicators to take care of eventualities like power failure, high or low temperature, door open, probe failure etc.
6. No condensation on storing material with automatic electric defrost
7. Temperature data logger, Temp chart recorder.
8. Rechargeable battery backup including charger maintenance free.
9. Dual door system with inner glass door, suitable for ambience with a temperature of 10°C to 40°C.
10. Voltage 220VAC, 50Hz.
11. Should have all the accessories required for the functioning of the equipment.
12. Training of laboratory staff for the purchased equipment.

Conditions for tenderer:

1. All accessories should be from the same Original Equipment Manufacturer for the main unit.
2. Instruments must be ISO certified and a copy should be enclosed. (The ISO Certificate must be issued by any organization accredited by the Bureau of Indian Standard or accredited by the international accrediting forum "IAF" (Certificate to be attached).
3. Should be USA FDA and/ or European CE be approved by 4 digits notified body.
4. Other necessary certifications, if any, will be provided by the bidder for the smooth functioning of the machine.
5. Installation process should be performed by O.E.M trained service engineers/ service representatives on OEM letterhead or Service Report within 15 days of supply, with the mandatory provision of providing preventive services visit of OEM trained Service Engineer/ Service Representative quarterly per year till the completion of warranty

period (i.e., 20 visits for the first 05 years) & further quarterly visits (04 visits/year) year till the completion of CMC period.

6. The equipment should have a Brand name/ Model Number embossed/etched on the equipment.
7. All the technical specifications in the compliance statement must be supported by Original Literature from the firm/ O.E.M with highlighting Numbering & flagging of all technical certificates.
8. Offered Equipment should have a strong Government Installation base.
9. Offered Equipment should have a Regional Sales Service Centre of the Original Equipment Manufacturer in the region for a 95 % uptime guarantee.
10. For the offered main unit, the essential, optional required consumables'/accessories' shelf life should be declared on the Original Equipment Manufacturer's letterhead.
11. In case of technical snag/failure/breakdown the response time for the inspection should be within 24 hours and repair within 05 days otherwise provide a service machine/ alternate arrangement to be made till the period of recovery of the breakdown of the unit, failing which attracts penal action as per the decision of institute/ hospital.
12. For offered equipment the Training of technical staff and users should be performed by Original Equipment Manufacturer trained Service Engineers at the proper designated place- at bidders' cost.
13. Company should quote their latest model and need to provide an affidavit for the same.
14. As a tendering process the Demonstration of the offered Equipment is Mandatory at hospital/institute premises or other designated places at the bidder's cost.
15. The bidder must comply with the General Financial Rules and their modifications if any issued by the Government of India- 2017.
16. Any bidder from a country that shares a land border with India will be eligible to bid in the tender only if the bidder is registered with the Competent Authority (i.e., Registration certificate issued by the Ministry of Commerce and Industry (Department for Promotion of Industry and Internal Trade- DPIIT after October 2020). If any such bidder is not registered with DPIIT they will be liable for technical disqualification.
17. Principal (OEM) must authorize only one agent to be quoted in the bid otherwise multiple quotes through different agents in the same bid will be canceled.
18. The Bidder and its OEM both have to submit a notarized affidavit on the Indian Non-Judicial Stamp Paper of Rs.100/- that the bidder has not quoted the price higher than the current financial year and last financial year supplied to any government Institute/

Organization/ reputed Private Organization. OEM also has to submit that the price quoted by the bidder in the bid is on its behalf and the lowest in the current and last financial year in the country. Therefore, if at any stage it has been found that the supplier and its OEM have quoted lower rates than those quoted in this bid; the Institute (the purchaser) would be given the benefit of lower rates by the Supplier and any excess payment if any, will become immediately payable to the Institute (the purchaser). If such an affidavit is not submitted, the bid will be outrightly rejected. (Part of technical bid).

19. Guarantee / Warranty Period: Separate offers of Comprehensive Maintenance Contract (CMC on main equipment) and Annual Maintenance Contract (AMC on main equipment) for further 5 years after expiry of 5 years of warranty (i.e., 6^{th}, 7^{th}, 8^{th}, 9^{th} and 10^{th} years) in rupees only (and on basis of percentage of price) should be included in a financial bid in the absence of which the offer is liable to be rejected. Payment for CMC/AMC shall be made only after the expiry of the warranty of 5 years, in case the Institute (the purchaser) decides for availing of CMC/AMC services. Contract for CMC/AMC shall be decided on expiry of warranty but rates (not more than 5% inclusive of all taxes for 6^{th} to 10^{th} year) will be frozen at the price of an issued purchase order before the release of payment by the Institute (the purchaser). However, the Institute (the purchaser) may decide not to enter into any CMC/AMC contract without assigning any reason for the same. which shall be binding upon the bid.
20. Should provide 5-year CMC. CMC cannot be more than 5% of the contract value.
21. System configured application-specific educational video tutorials shall be provided as standard with the system.
22. Details of service outlet in India to render services during 5 years warranty period.
23. The principals must give a certificate if the supplier/vendor is changed during the course of the guarantee/warranty period, the principals would be responsible for the upkeep/maintenance of the quote/supplied equipment, besides honouring all the terms and conditions of CMC/AMC in letter and spirit.

SPECIFICATIONS OF FOLDABLE WHEELCHAIR

1. An adult, folding, wheelchair with chrome plated tubular frame and strong double fold leatherette-made Seat & Back.
2. Rear wheels are fitted with self-propelling rings and forward push safety brakes.
3. "Deluxe Chair is fitted with Elevating, Detachable & Swing-away Leg Rests with large Leg supports that Allow comfortable leg position and Detachable Armrests allows easy transfer from bed.
4. Frame: Tubular frame with Chrome Plated finish.
5. Seat: 45 cm wide, leatherette-made Seat & Back.
6. Armrest: Detachable Armrests (for easy transfer) with Skirt Guard & Arm-Supports.
7. Leg-rest: Elevating, Detachable & Swing-away with large Leg rests & foldable foot Plates.
8. Front Wheel: 20cm dia. Casters with solid tyres.
9. Rear Wheel: 60cm dia. with solid Tyres & Rings.
10. Breaks.: Forward Push safety Breaks.

Conditions for tenderer:

1. All accessories should be from the same Original Equipment Manufacturer for the main unit.

2. Instruments must be ISO certified and a copy should be enclosed. (The ISO Certificate must be issued by any organization accredited by the Bureau of Indian Standard or accredited by the international accrediting forum "IAF" (Certificate to be attached).

3. Other necessary certifications if any required will be provided by the bidder for the smooth functioning of the machine.

4. Installation process should be performed by O.E.M trained service engineers/ service representatives on OEM letterhead or Service Report within 15 days of supply, with the mandatory provision of providing preventive services visit of OEM trained Service Engineer/ Service Representative quarterly per year till the completion of warranty period (i.e., 20 visits for the first 05 years) & further quarterly visits (04 visits/year) year till the completion of CMC period.

5. The equipment should have a Brand name/ Model Number embossed/etched on the equipment.

6. All the technical specifications in the compliance statement must be supported by Original Literature from the firm/ O.E.M with highlighting Numbering & flagging of all technical certificates.

7. Offered Equipment should have a strong Government Installation base.

8. Offered Equipment should have a Regional Sales Service Centre of the Original Equipment Manufacturer in the region for a 95 % uptime guarantee.

9. For the offered main unit, the essential, optional required consumables'/accessories' shelf life should be declared on the Original Equipment Manufacturer's letterhead.

10. In case of technical snag/failure/breakdown the response time for the inspection should be within 24 hours and repair within 05 days otherwise provide a service machine/ alternate arrangement to be made till the period of recovery of the breakdown of the unit, failing which attracts penal action as per the decision of institute/ hospital.

11. For offered equipment the Training of technical staff and users should be performed by Original Equipment Manufacturer trained Service Engineers at the proper designated place- at bidders' cost.

12. Company should quote their latest model and need to provide an affidavit for the same.

13. As a tendering process the Demonstration of the offered Equipment is Mandatory at hospital/institute premises or other designated places at the bidder's cost.

14. The bidder must comply with the General Financial Rules and their modifications if any issued by the Government of India- 2017.

15. Any bidder from a country that shares a land border with India will be eligible to bid in the tender only if the bidder is registered with the Competent Authority (i.e., Registration certificate issued by the Ministry of Commerce and Industry (Department for Promotion of Industry and Internal Trade- DPIIT after October 2020). If any such bidder is not registered with DPIIT they will be liable for technical disqualification.

16. Principal (OEM) must authorize only one agent to be quoted in the bid otherwise multiple quotes through different agents in the same bid will be canceled.

17. The Bidder and its OEM both have to submit a notarized affidavit on the Indian Non-Judicial Stamp Paper of Rs.100/- that the bidder has not quoted the price higher than the current financial year and last financial year supplied to any government Institute/ Organization/ reputed Private Organization. OEM also has to submit that the price quoted by the bidder in the bid is on its behalf and the lowest in the current and last financial year in the country. Therefore, if at any stage it has been found that the supplier and its OEM have quoted lower rates than those quoted in this bid; the Institute (the purchaser) would be given the benefit of lower rates by the Supplier and any excess payment if any, will become immediately payable to the Institute (the purchaser). If such an affidavit is not submitted, the bid will be outrightly rejected. (Part of technical bid).

18. Guarantee / Warranty Period: Separate offers of Comprehensive Maintenance Contract (CMC on main equipment) and Annual Maintenance Contract (AMC on main equipment) for further 5 years after expiry of 5 years of warranty (i.e., 6^{th}, 7^{th}, 8^{th}, 9^{th} and 10^{th} years) in rupees only (and on basis of percentage of price) should be included in a financial bid in the absence of which the offer is liable to be rejected. Payment for CMC/AMC shall be made only after the expiry of the warranty of 5 years, in case the Institute (the purchaser) decides for availing of CMC/AMC services. Contract for CMC/AMC shall be decided on expiry of warranty but rates (not more than 5% inclusive of all taxes for 6^{th} to 10^{th} year) will be frozen at the price of an issued purchase order before the release of payment by the Institute (the purchaser). However, the Institute (the purchaser) may decide not to enter into any CMC/AMC contract without assigning any reason for the same, which shall be binding upon the bid.

SPECIFICATIONS FOR DEFIBRILLATOR WITH MONITOR

S. No	Specifications
1.	**Description of Function**
1.1	Defibrillator is required for reviving the heart functions by providing selected quantum of electrical shocks with facility for monitoring vital parameters.
2.	**Operational Requirements**
2.1	Defibrillator should be a low energy Bi-Phasic, Portable and latest model. Should not weigh more than 6 Kg (+/- 10% is acceptable)
2.2	Should be upgradable for vital parameters like SPO2, NIBP & CO2.
2.3	Should print the ECG on thermal recorders.
2.4	Should work on Manual and Automated external defibrillation (AED) in Bi-phasic mode. The maximum energy delivered by the device should be 1 J to 200J in manual mode and 150 J in AED mode.
2.5	Should be capable of doing synchronized & asynchronized cardioversion
2.6	Can be operated from mains as well as battery
2.7	Should have defibrillator self-test facility.
2.8	Demonstration of the equipment quoted is a must
2.9	Upgradable to External pacing with demand and fixed mode should be provided as standard.
3	**Technical Specifications**
3.1	Should be a low energy biphasic defibrillator monitor with recorder, having capability to arrest all arrhythmia.
3.2	Should monitor ECG through external paddles and monitoring electrodes and defibrillate through external paddles. Should have automatic/manual switching to see patient ECG through paddles or leads.
3.3	Should have factory integrated compensation for chest impedance for a range of 25 to 150 ohms
3.4	Should have a built-in printer/thermal recorder
3.5	Should have charging time of less than 6 seconds for maximum energy. Charging indicator should be there

3.6	Should have bright TFT color display 7" or more for viewing messages and ECG waveform of 4 seconds. Should be able to display 3 waveform channels simultaneously.
3.7	Should have external paddles with paddle contact indicators. Single adult and paediatric paddles should be available.
3.8	Should have event summary facility for recording and printing at least 50 events and 50 waveforms
3.9	Should have a battery capable of 100 shocks delivery.
3.10	Should be capable of printing reports on event summary, configuration, self-test, battery capacity etc.
3.11	Should have facility for self-test/check before usage and set up function
3.13	Should be capable of delivering energy in increments of 1-2 joules up to 1 to 10J and increments of 5-20 joules upto 50J.
3.14	Should have user friendly 1,2,3 colour-coded operations
3.15	Should be capable to connect switched internal paddles of same make (price to be quoted separately)
3.16	Should conduct automated self-test when switched on and should have a 'ready to use. indicator.
3.17	Should have patient contact indicators on paddles for immediate feedback on patient-paddle contact for ensuring maximum shock efficacy
3.18	Should have continuous 8 hours waveforms storage facility. It should have capacity to store at least 50 events of 30 minutes in length.
4	**System Configuration Accessories, spares and consumables**
4.1	Defibrillator -01
4.2	Paddles Adult/Pediatric (pair) -01
4.3	Complete set of ECG Leads along with mother cable-01
4.4	ECG Rolls- 01
4.7	AED pads 01 no. of each
5	**Environmental factors**

5.1	The unit shall be capable of operating continuously in ambient temperature of 10-40°C and relative humidity of 15-90%
5.2	The unit shall be capable of being stored continuously in ambient temperature of 0-50°C and relative humidity of 15-90%
6	**Power Supply**
6.1	Power input to be 220-240VAC, 50Hz

Conditions for tender:

1. All accessories should be from the same Original Equipment Manufacturer for the main unit.
2. Instruments must be ISO certified and a copy should be enclosed. (The ISO Certificate must be issued by any organization accredited by the Bureau of Indian Standard or accredited by the international accrediting forum "IAF" (Certificate to be attached).
3. Should be USA FDA and/ or European CE be approved by 4 digits notified body.
4. Other necessary certifications if any required will be provided by the bidder for the smooth functioning of the machine.
5. Installation process should be performed by O.E.M trained service engineers/ service representatives on OEM letterhead or Service Report within 15 days of supply, with the mandatory provision of providing preventive services visit of OEM trained Service Engineer/ Service Representative quarterly per year till the completion of warranty period (i.e., 20 visits for the first 05 years) & further quarterly visits (04 visits/year) year till the completion of CMC period.
6. The supplied equipment to be covered under a 5years comprehensive warranty and post-completion 5 years paid CAMC, in which all accidental damages/ breakage, leakage/ punctures, manufacturing defects and wear and tear of all sorts will be covered.
7. The equipment should have a Brand name/ Model Number embossed/etched on the equipment.
8. All the technical specifications in the compliance statement must be supported by Original Literature from the firm/ O.E.M with highlighting Numbering & flagging of all technical certificates.

9. Offered Equipment should have a strong Government Installation base.
10. Offered Equipment should have a Regional Sales Service Centre of the Original Equipment Manufacturer in the region for a 95 % uptime guarantee.
11. For the offered main unit, the essential, optional required consumables'/accessories' shelf life should be declared on the Original Equipment Manufacturer's letterhead.
12. In case of technical snag/failure/breakdown the response time for the inspection should be within 24 hours and repair within 05 days otherwise provide a service machine/ alternate arrangement to be made till the period of recovery of the breakdown of the unit, failing which attracts penal action as per the decision of institute/ hospital.
13. For offered equipment the Training of technical staff and users should be performed by Original Equipment Manufacturer trained Service Engineers at the proper designated place- at bidders' cost.
14. Company should quote their latest model and need to provide an affidavit for the same.
15. As a tendering process the Demonstration of the offered Equipment is Mandatory at hospital/institute premises or other designated places at the bidder's cost.
16. The bidder must comply with the General Financial Rules and their modifications if any issued by the Government of India- 2017.
17. Any bidder from a country that shares a land border with India will be eligible to bid in the tender only if the bidder is registered with the Competent Authority (i.e., Registration certificate issued by the Ministry of Commerce and Industry (Department for Promotion of Industry and Internal Trade- DPIIT after October 2020). If any such bidder is not registered with DPIIT they will be liable for technical disqualification.
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be given the benefit of lower rates by the Supplier and any excess payment if any, will become immediately payable to the Institute (the purchaser). If such an affidavit is not submitted, the bid will be outrightly rejected. (Part of technical bid).

20. Guarantee / Warranty Period: Separate offers of Comprehensive Maintenance Contract (CMC on main equipment) and Annual Maintenance Contract (AMC on main equipment) for further 5 years after expiry of 5 years of warranty (i.e., 6^{th}, 7^{th}, 8^{th}, 9^{th} and 10^{th} years) in rupees only (and on basis of percentage of price) should be included in a financial bid in the absence of which the offer is liable to be rejected. Payment for CMC/AMC shall be made only after the expiry of the warranty of 5 years, in case the Institute (the purchaser) decides for availing of CMC/AMC services. Contract for CMC/AMC shall be decided on expiry of warranty but rates (not more than 5% inclusive of all taxes for 6^{th} to 10^{th} year) will be frozen at the price of an issued purchase order before the release of payment by the Institute (the purchaser). However, the Institute (the purchaser) may decide not to enter into any CMC/AMC contract without assigning any reason for the same, which shall be binding upon the bid.

SPECIFICATIONS FOR 5 PARA BASIC MONITOR

1. Should have ECG, SpO2, NIBP, Respiration, and temperature monitoring facility.
2. Monitor must be upgradable to have Minimal Invasive Continuous Cardiac Output, micro-stream ETCO2, BIS, and GAS monitoring through interchangeable modules.
3. Should display at least 08 waveforms channels of selected parameters simultaneously.
4. Should have inbuilt continuous battery backup through a lithium-ion battery of a minimum of four hours or more.
5. Display: Color TFT display size of 10" or more.
6. Should have dual temperature monitoring either in Celsius or Fahrenheit.
7. Should have facility for displaying multi-screen configurations.
8. Should be able to store & display at least 240 hours of tabular & graphical trends of all parameters. Minimum 200 event recalls with 3 waveforms snapshots should be provided as standard. Should also have an option for full disclosure of waveforms for a minimum of 48 hours.
9. Should be suitable for monitoring adult & pediatric & neonate patients
10. The SpO_2 technology should be Nellcor/ Masimo SET/ Equivalent to monitor SpO2 so as to sense hypotension, shivering & motion.
11. Should have oscillometric Technology for measurement of NIBP with Auto, STAT, and Manual modes.
12. Should have different patient type selection.
13. Should have PPV (Pulse Pressure variation) as standard when connected to IBP.
14. The respiration rate should be calculated through the Impedance method.
15. Should be able to analyze arrhythmias & ST segment changes. Monitor ST-segment upgradable to monitor 12 lead ECG with ST-segment representation in easily readable graphical form.
16. Should be compatible with HIS and should be HL7 compliant.
17. Monitor should have ESU & Defibrillation protection.
18. Should be able to give visual & audible alarms with three levels of volume adjustment.
19. Should have connectivity to Central station through Ethernet card or Wireless Connectivity. Manufacturer firms should have the same make system/ solution to upgrade the integration of these monitors with other ICU devices such as syringe pumps, ventilators, ABG machines, Heart & Lung machines, dialysis machines etc.
20. Monitor must have the facility to have the bed-to-bed overview through LAN without connecting to a central station.

Accessories with each monitor:

- 3 lead ECG cable x 01 no.
- Reusable Adult NIBP Cuff x 01 no.
- Reusable NIBP Hose pipe x 01 no.
- Reusable Adult SpO2 sensor x 01 no.
- Reusable Esophageal Temperature probe x 01 no.

Conditions for tender:

1. All accessories should be from the same Original Equipment Manufacturer for the main unit.
2. Instruments must be ISO certified and a copy should be enclosed. (The ISO Certificate must be issued by any organization accredited by the Bureau of Indian Standard or accredited by the international accrediting forum "IAF" (Certificate to be attached).
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6. The equipment should have a Brand name/ Model Number embossed/etched on the equipment.
7. All the technical specifications in the compliance statement must be supported by Original Literature from the firm/ O.E.M with highlighting Numbering & flagging of all technical certificates.
8. Offered Equipment should have a strong Government Installation base.
9. Offered Equipment should have a Regional Sales Service Centre of the Original Equipment Manufacturer in the region for a 95 % uptime guarantee.
10. For the offered main unit, the essential, optional required consumables'/accessories' shelf life should be declared on the Original Equipment Manufacturer's letterhead.

11. In case of technical snag/failure/breakdown the response time for the inspection should be within 24 hours and repair within 05 days otherwise provide a service machine/ alternate arrangement to be made till the period of recovery of the breakdown of the unit, failing which attracts penal action as per the decision of institute/ hospital.
12. For offered equipment the Training of technical staff and users should be performed by Original Equipment Manufacturer trained Service Engineers at the proper designated place- at bidders' cost.
13. Company should quote their latest model and need to provide an affidavit for the same.
14. As a tendering process the Demonstration of the offered Equipment is Mandatory at hospital/institute premises or other designated places at the bidder's cost.
15. The bidder must comply with the General Financial Rules and their modifications if any issued by the Government of India- 2017.
16. Any bidder from a country that shares a land border with India will be eligible to bid in the tender only if the bidder is registered with the Competent Authority (i.e., Registration certificate issued by the Ministry of Commerce and Industry (Department for Promotion of Industry and Internal Trade- DPIIT after October 2020). If any such bidder is not registered with DPIIT they will be liable for technical disqualification.
17. Principal (OEM) must authorize only one agent to be quoted in the bid otherwise multiple quotes through different agents in the same bid will be canceled.
18. The Bidder and its OEM both have to submit a notarized affidavit on the Indian Non-Judicial Stamp Paper of Rs.100/- that the bidder has not quoted the price higher than the current financial year and last financial year supplied to any government Institute/ Organization/ reputed Private Organization. OEM also has to submit that the price quoted by the bidder in the bid is on its behalf and the lowest in the current and last financial year in the country. Therefore, if at any stage it has been found that the supplier and its OEM have quoted lower rates than those quoted in this bid; the Institute (the purchaser) would be given the benefit of lower rates by the Supplier and any excess payment if any, will become immediately payable to the Institute (the purchaser). If such an affidavit is not submitted, the bid will be outrightly rejected. (Part of technical bid).
19. Guarantee / Warranty Period: Separate offers of Comprehensive Maintenance Contract (CMC on main equipment) and Annual Maintenance Contract (AMC on main equipment) for further 5 years after expiry of 5 years of warranty (i.e., 6th, 7th, 8th, 9th and 10th years) in rupees only (and on basis of percentage of price) should be included

in a financial bid in the absence of which the offer is liable to be rejected. Payment for CMC/AMC shall be made only after the expiry of the warranty of 5 years, in case the Institute (the purchaser) decides for availing of CMC/AMC services. Contract for CMC/AMC shall be decided on expiry of warranty but rates (not more than 5% inclusive of all taxes for 6^{th} to 10^{th} year) will be frozen at the price of an issued purchase order before the release of payment by the Institute (the purchaser). However, the Institute (the purchaser) may decide not to enter into any CMC/AMC contract without assigning any reason for the same, which shall be binding upon the bid.

SPECIFICATIONS FOR 12 LEAD ECG MACHINE

1. Fully automatic, microprocessor-controlled, mains & battery operated
2. Built-in 8-inch or more color LCD/ LED monitor.
3. Built-in Ethernet port for data transfer.
4. Printout on an internal thermal printer.
5. Resting ECG software with 12 simultaneous leads
6. Preview of 12 lead ECG prior to the printout
7. ECG measurement software, incl. average complexes, measurement markers and a detailed measurement results table.
8. The unit should have advisory software for the placement of leads.
9. The unit should give a lead quality assessment as to whether the properly connected or improper connection.
10. The unit should have a Pacemaker detection facility.
11. The unit should have a sampling rate of at least 30,000 Hz
12. The unit should have a frequency range 0 Hz - 250 Hz
13. Unit Should be able to print the Right precordial lead with the notation.
14. Should be able to print left posterior leads.
15. The unit should have a high-resolution A4 size thermal printer.
16. Alphanumeric keyboard with rubber keys.
17. Rechargeable Battery backup for at least 5 hours and more.
18. Built-in Memory of 250 patients' ECG or more.
19. The unit should store at least 10 minutes or more continuous ECG recording.
20. Should have QT correction by Bazett, Fredericia, Framingham or Hodges

Accessories to be supplied with each machine:

1. 10 lead patient cable with banana plugs – 1 no.
2. extremity electrodes – 2 set
3. Compatible trolley – 1

Conditions for tender:

1. All accessories should be from the same Original Equipment Manufacturer for the main unit.
2. Instruments must be ISO certified and a copy should be enclosed. (The ISO Certificate must be issued by any organization accredited by the Bureau of Indian Standard or accredited by the international accrediting forum "IAF" (Certificate to be attached).

3. Should be USA FDA and/ or European CE be approved by 4 digits notified body.
4. Other necessary certifications if any required will be provided by the bidder for the smooth functioning of the machine.
5. Installation process should be performed by O.E.M trained service engineers/ service representatives on OEM letterhead or Service Report within 15 days of supply, with the mandatory provision of providing preventive services visit of OEM trained Service Engineer/ Service Representative quarterly per year till the completion of warranty period (i.e., 20 visits for the first 05 years) & further quarterly visits (04 visits/year) year till the completion of CMC period.
6. The equipment should have a Brand name/ Model Number embossed/etched on the equipment.
7. All the technical specifications in the compliance statement must be supported by Original Literature from the firm/ O.E.M with highlighting Numbering & flagging of all technical certificates.
8. Offered Equipment should have a strong Government Installation base.
9. Offered Equipment should have a Regional Sales Service Centre of the Original Equipment Manufacturer in the region for a 95 % uptime guarantee.
10. For the offered main unit, the essential, optional required consumables'/accessories' shelf life should be declared on the Original Equipment Manufacturer's letterhead.
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14. As a tendering process the Demonstration of the offered Equipment is Mandatory at hospital/institute premises or other designated places at the bidder's cost.
15. The bidder must comply with the General Financial Rules and their modifications if any issued by the Government of India- 2017.
16. Any bidder from a country that shares a land border with India will be eligible to bid in the tender only if the bidder is registered with the Competent Authority (i.e., Registration certificate issued by the Ministry of Commerce and Industry (Department

for Promotion of Industry and Internal Trade- DPIIT after October 2020). If any such bidder is not registered with DPIIT they will be liable for technical disqualification.

17. Principal (OEM) must authorize only one agent to be quoted in the bid otherwise multiple quotes through different agents in the same bid will be canceled.
18. The Bidder and its OEM both have to submit a notarized affidavit on the Indian Non-Judicial Stamp Paper of Rs.100/- that the bidder has not quoted the price higher than the current financial year and last financial year supplied to any government Institute/ Organization/ reputed Private Organization. OEM also has to submit that the price quoted by the bidder in the bid is on its behalf and the lowest in the current and last financial year in the country. Therefore, if at any stage it has been found that the supplier and its OEM have quoted lower rates than those quoted in this bid; the Institute (the purchaser) would be given the benefit of lower rates by the Supplier and any excess payment if any, will become immediately payable to the Institute (the purchaser). If such an affidavit is not submitted, the bid will be outrightly rejected. (Part of technical bid).
19. Guarantee / Warranty Period: Separate offers of Comprehensive Maintenance Contract (CMC on main equipment) and Annual Maintenance Contract (AMC on main equipment) for further 5 years after expiry of 5 years of warranty (i.e., 6^{th}, 7^{th}, 8^{th}, 9^{th} and 10^{th} years) in rupees only (and on basis of percentage of price) should be included in a financial bid in the absence of which the offer is liable to be rejected. Payment for CMC/AMC shall be made only after the expiry of the warranty of 5 years, in case the Institute (the purchaser) decides for availing of CMC/AMC services. Contract for CMC/AMC shall be decided on expiry of warranty but rates (not more than 5% inclusive of all taxes for 6^{th} to 10^{th} year) will be frozen at the price of an issued purchase order before the release of payment by the Institute (the purchaser). However, the Institute (the purchaser) may decide not to enter into any CMC/AMC contract without assigning any reason for the same, which shall be binding upon the bid.

BLOOD & FLUID WARMER SPECIFICATIONS

1. Delivers blood and intravenous fluid to the patient at a normothermic temperature at a wide range of flow rates from gravity flow rates to 50-5,000 ml/hr.
2. Keeps blood and fluids warm between 37–42°C
3. Dedicated disposable triple lumen tubing that eliminates patient line cooldown of infusion.
4. Should have single-step programming of warmer.
5. Should have an inbuilt reservoir of recirculating fluid.
6. Easy to set up and easy to use.
7. Displays set point of recirculating reservoir.
8. Audible and visual alarms if reservoir temperature reaches 43.9 ^{O}C
9. Built-in over temperature test button and alarm test button.
10. The Principal Company should have a direct presence in India and its Service Centre in India.
11. Meets all AABB standards for blood warming.

Conditions for tenderer:

1. All accessories should be from the same Original Equipment Manufacturer for the main unit.
2. Instruments must be ISO certified and a copy should be enclosed. (The ISO Certificate must be issued by any organization accredited by the Bureau of Indian Standard or accredited by the international accrediting forum "IAF" (Certificate to be attached).
3. Should be USA FDA and European CE be approved by 4 digits notified body.
4. Other necessary certifications if any required will be provided by the bidder for the smooth functioning of the machine.
5. Installation process should be performed by O.E.M trained service engineers/ service representatives on OEM letterhead or Service Report within 15 days of supply, with the mandatory provision of providing preventive services visit of OEM trained Service Engineer/ Service Representative quarterly per year till the completion of warranty period (i.e., 20 visits for the first 05 years) & further quarterly visits (04 visits/year) year till the completion of CMC period.

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SPECIFICATIONS FOR SYRINGE INFUSION PUMPS

Sl. No.	Specifications
1	The flow rate range should be 0.1ml/hr to 1200 ml/h with an accuracy of ± 1% on the mechanism.
2	Should work on the following syringe capacities 5, 10, 20, 30/35, 50/ 60 CC and should be compatible with min 50 types of the syringe
3	Infusion modes to be present ml/hr mode, Dose mode, and Volume/time.
4	Should have the following Dose rate mode units: ng/h, ng/kg/min, ng/kg/h, microg/min, microg/h, microg/kg/min, microg/kg/h, mg/min, mg/h, mg/24h, mg/kg/min, mg/kg/h, mg/kg/24h, mg/m²/h, mg/m²/24h, g/h, g/kg/min, g/kg/h, g/kg/24h, mmol/h, mmol/kg/h, mmol/kg/24h, mU/min, mU/kg/min, mU/kg/h, U/min, U/h, U/kg/min, U/kg/h, kcal/h, kcal/24h, kcal/kg/h, mEq/min, mEq/h, mEq/kg/min, mEq/kg/h.
5	Should have a drug library of a minimum of 50 drugs categorized in user-defined categories with the facility to set all infusion parameters like soft limit, hard limit, bolus dose, etc.
6	Should have Soft and Hard limit for max. or min. Flow/ Dosage rate that cannot be exceeded and is rejected by the pump.
7	Should have the facility to upload drug library simultaneously through a single interface in the station with up to 4 infusion pumps in a system with an external hardware
8	Should have direct bolus option with flow rate 50 ml/hr to 1200 ml/hr with an increment of 50 ml/hr along with programable bolus with settable dose or volume/time
9	Should have settable KVO option ranging from 0.1 to 5ml/hr with feature to keep it off
10	3 modes of Priming are required (Mandatory, not mandatory, or advised) with a max flow rate: of 1200 ml/hr.
11	Should have induction dose facility with setting of Dose / time: 0.1 - 99.9 units / 1 second - 24 hours rate auto-calculation

12	Night mode programmed manually or automatically in a variable time range is a must to decrease the brightness of the screen.
13	The fast start option is mandatory with a pause option programmable from 1min to 24hrs
14	Variable and 3 pre-set levels pressure mode is a must. Range from 50 to 900 mmHg. (25 mmHg increment from 50 to 250 mmHg / 50 mmHg increment from 250 to 900 mmHg). Can be enabled/disabled and adjusted with the facility to display real-time inline pressure in both digital and analog form.
15	The Dynamic Pressure System with maximum and minimum threshold settings is mandatory.
16	The anti-bolus system is required
17	On Screen Graphical display of the following history "Volume/dose infused, pressure, flow rate" must be present.
18	Should save 1500 data log events in real-time and should have a graphical history of Volume/ dose infused, pressure and flow rate
19	The device should have Syringe barrel clasp check, plunger head detection, anti-siphon system check, and flange detection.
20	The device should have the following alarm Occlusion pressure pre-alarm, occlusion pressure alarm, patient line disconnection, end of infusion pre-alarm, end of infusion alarm, volume limit pre-alarm, volume limit alarm, keypad manual locking or key padlock, hard and soft flow rate limits, start infusion at pause end, Disengaged driving mechanism alarm, plunger disengaged alarm, low battery pre-alarm, discharged battery alarm, battery capacity display in hours and minutes, unconfirmed programming, technical malfunction alarm (auto-test, rotation), drive system advance check, watchdog check, communication connection failure, plug-head disengagement, auto-lock/lock code (on Keypad), preventive maintenance.
21	The device should have a push guard for syringe protection.
22	Should have LCD display of size equal to or more than 60 mm x 30 mm
23	Should have a Swing lock clamp for versatile clamp and horizontal clamp that allows the fixation on a rail or on a pole
24	Should have a Li-ion Smart battery, remaining battery life, and battery charge level available on the display. Battery Life (when fully charged): > 13 h at 5 mL/h.
25	The device should have an RS232 Communication port with HL7 compatibility.

26	Should have the option of self stackability of min 3 pumps
27	The device should have a Docking station to fit in 4 or 6 pump
28	The docking station should be able to communicate to HIS and should be HL7 compliant

Conditions for tenderers:

1. All accessories should be from the same Original Equipment Manufacturer for the main unit.
2. Instruments must be ISO certified and a copy should be enclosed. (The ISO Certificate must be issued by any organization accredited by the Bureau of Indian Standard or accredited by the international accrediting forum "IAF" (Certificate to be attached).
3. Should be USA FDA and/ or European CE be approved by 4 digits notified body.
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5	**BALANCE ELECTRONIC 1.0 mg-Accuracy (BALANCE SEMI MICRO)**
	Description of Function
	Electronic Balance is required for precision weighing of Lab samples.
	Operational Requirements
	Microprocessor based single pan Analytical Balance with High accuracy & precision is required.
	Reading of the weight by digital display.
	Electronic top loading balances with transparent case
	The balance should have functions of piece counting, percent weighing, and formulation, dynamic weighing with automatic and manual start and' provision for data interface
	Technical Specifications
	Minimum weight:- 30 mg. Weigh Accuracy up to one mg.
	Fully automatic Time and/or temperature controlled internal calibration and balance should be capable to adjust itself.
	Auto zero Setting
	Weighing capacity 100 gm or more.
	Readability: 0.1 mg(100µg)
	Repeatability: 0.09mg
	Settling time 1.5 second
	Suitable internal and external adjustment weights.
	Pace-setting interfacing flexibility - including Ethernet, Bluetooth (wireless connection) and PS/2 - for efficient data capture and easy network integration.(not mandatory)
	Balance should have the following features:-
	• Touch Screen/LCD Display
	Stainless Steel Large Square/round weighing Pan
	• Warns if the balance is not correctly levelled to ensure the accuracy of results.
	• Suitable tool box to be provided
	• Integrated automatic safety functions for external routine operations.
	• Alphanumeric data entry of 4 ID's
	Added Para:- Weight (Ex. Wt.): 10 mg, 100mg, 10gm (for Calibration)
	System Configuration Accessories, spares and consumables
	System as specified-
	Should be supplied with standard external and internal weights as specified.
	Power Supply
	Power input to be 220-240VAC, 50Hz fitted with Indian plug
	Resettable overcurrent breaker shall be fitted for protection
	Standards, Safety and Training
	should comply with ISO/GLP with auto validation with ink jet printer
	Should be FDA or CE or BIS approved product

Gas Analyser – automatic for CO2, O2, N2
Record & measure VO2 oxygen consumption, VCO2 carbon dioxide production, VE Expiredminute volume, RER respiratoryexchange ratio, ECG, HRV, Body temperature and Pressure saturate BTPS, Standard temperature and pressure Dry STPD, (VE/VO2), (VE/VCO2) etc. and should generate a number of graphs likeMetabolic log window, VE (BTPS) vs. VO2, VE (BTPS) vs. VCO2, VCO2 vs. VO2, RER vs. time, VO2 vs. time, VCO2 vs. time, VE(BTPS) vs. time.
• High speed USB based recording unit along with Gas analysers, spirometer amplifier, flow-headand other transducers and accessories.
• Have oxygen sensor with minimum range of 5-100% oxygen and resolution of at least 0.02%, and the carbon dioxide sensor with minimum range 0-8% of carbon dioxide and resolution of at least0.1%and variable flow range of 0-185 ml/min for best performanceand results.
• To perform online and offline analysis up to 32 channels.
• Supplied with breathing accessories and Douglas bags.
• To plot real time flow & volumeloops. ECG switch bow (lead I, II, III aVL, aVF, aVR and V1 to V6) for real time cardiac axis and vectoranalysis.
• IEC 60601-1 & ISO 9001:2008certified & making them safe foruse with human subjects.
• An obligatory demonstration of the equipment and necessary training.
• To be supplied with Bicycle ergometer, branded computer & UPS.

Fume cupboard	
Sl. No	**Technical Specification**
	Fume cupboards is a fume cabinets which localised the fume extraction systems fitted in laboratories to protect users from harmful substances that could be inhaled. It should have a cabinet with a moveable front window made out of safety glass. It should properly functioning the fume hood exhausts hazardous gases, dusts, mists, vapors from a combined location. Cabinet Structure: Material: All steel (1.0mm cold-rolling steel or 1.0mm stainless steel) covered with electrostatic spraying after folding, welding, polishing, acid cleaning, phosphorization and chemical resistance. It should have all the accessories that is required.

Electric Time makers, 100/sec
Electric Time makers, 100/sec.
Starling Long Extension Kymograph with time marker
Should be having superior quality metal gears, accurate, mill cut ratio 40,10,2.5 & 0.625 mm per second, speed change clutch with intermediate off position, Cylinder 6X11'' with crown wheel engaging shaft.
Turning by hand if necessary.
Moving in slot in bed allowing variation in paper length for 60" to 66".
Rigid cast Iron stand which should work up down by large screws with find adjustment facility.
To be supplied with accessories:
Double time marker.
Mercury manometer, Separate smoking varnishing apparatus and smoking Burner

4	**4- BALANCE ELECTRONIC 0.1 mg-Accuracy (BALANCE MICRO)**
	Description of Function
	Electronic Balance is required for precision weighing of Lab samples.
	Operational Requirements
	Microprocessor based single pan Analytical Balance with High accuracy & precision is required.
	Reading of the weight by digital display.
	Electronic top loading balances with transparent case
	The balance should have functions of piece counting, percent weighing, formulation,Dynamic weighing with automatic and manual start and' provision for data interface
	Technical Specifications
	Minimum weight: 1 mg.
	Auto self-calibration facility
	Auto zero Setting
	One touch calibration
	Weighing capacity upto 10 gms or more.
	Repeatability and resolution: 1µg
	Linearity: + 0.2mg
	Stabilization time < 5 second
	Deleted
	Weight (Ex. Wt.): 01mg, 10 mg, 100mg, 1gm (for Calibration)
	Balance should have the following features:-
	· **Touch Screen/LCD Display**
	·**Stainless Steel Large Square/round weighing Pan**
	·IR Sensors for hands-free operation for personnel security and automatic draft shield opening and closing
	· Warns if the balance is not correctly levelled to ensure the accuracy of results.
	· Automatic and detachable draft shield
	DELETED
	·**Suitable tool box to be provided**
	·Integrated automatic safety functions for external routine operations.

	·Alphanumeric data entry of 4 ID's
	System Configuration Accessories, spares and consumables
	System as specified
	Should be supplied with standard external and internal weights as specified.
	Power Supply
	Power input to be 220-240VAC, 50Hz fitted with Indian plug
	UPS of suitable rating with voltage regulation and spike protection for 60 minutes backup.
	Resettable overcurrent breaker shall be fitted for protection
	Standards, Safety and Training
	should comply with ISO/GLP with auto validation with ink jet printer
	Should be FDA or CE or UL or BIS approved product
	Electrical safety conforms to standards for electrical safety IEC-60601 / IS-13450
	Manufacturer/Supplier should have ISO certification for quality standards.

Hemoglobinometer

Sl. No	Technical Specification
1	Sample material: Capillary, venous or arterial whole blood.
2	Measurement range: 0-20 g/dL
3	Results: Within 2 minutes
4	Power: AC Adapter or batteries.
5	Operating temperature: 4 - 40 °C
6	Interface: Printer and PC
7	Quality control: Built-in "selftest"

Seriological Water Bath 8*10

Sl. No	Technical Specification
1	Useful for dual purpose. It is a combination of serological and routine rectangular water bath with holes and concentric rings.
2	Standard double wall construction. SS insulated.
3	Inner chamber made out of highly polished stainless steel sheet and exterior made out of thick mild steel duly finished power coated paint.
4	Immersion heaters are provided for heating to attain temperature range from 5° C above ambient to 95° C ± 1 °C.
5	Digital temp. Indicator-cum-Controller. The equipment to work on 220v AC 50 Hz single phase.
6	Chamber size in mm & inches L x W x H 300 x 225 x 175 mm Approx Capacity appox 15 ltrs. Approx.
7	Manufacturer should have ISO 13485 certification .
8	With brass drain cock
9	Microprocessor control with digital display to set temperature.
10	Prevent thermal runaway.

Plasma Thawing Bath	
S.no	**Description of function**
1	The Plasma Thawing Bath is designed for rapid and uniform thawing of frozen plasma.
2	Unit thaws 8 TO 12 plasma units in 30-40 minutes.
3	Should be able to thaw 8/12 plasma bags (FFP / Apheresis or plasma bags of any size
4	Should have two separate basket assemblies with built-in fingers for securely holding the plasma bags of all sizes.
5	Should be a water bath based system operating at a preset and precise temperature of 37^0C
6	Should give an alarm when the plasma bags are thawed
7	Provision for programmable time setting for length of thawing
8	Should have digital timer clearly displaying the programmed set time or remaining cycle in minutes
9	Should have audio visual over-temperature alarm system
10	Should have a deep thawing chamber with a stirrer
11	Should have a system to drain the chamber within 3 minutes.

RH View Box

1	Built in temperature indicator for easy . Accurate monitoring of viewing area . Viewing area temperature adjusts easily to compensate for ambient .
2	Tempearture Changes (Range : 45 deg C to 50 deg C)
3	Rh slides reaches temp

Micropipette

1	Should be manual adjustable micropipette set having the following capacities
a.	1 – 2.5 µl
b.	0.5 – 10 µl
c.	2-20ul
d.	10-100ul
e.	20 – 200 µl
f.	100- 1000ul
2	Fully autoclavable.
3	Must show accuracy in measurement
4	Ejector should ensure safe eject contaminated tips, positioned for perfect ergonomics.
5	Must have precision in control, spring loaded tip cone.
6	One-button operation for aspiration, dispensing and tip ejection.
7	Volume setting automatically locks.
8	Chemically resistant.
9	4-digit display.
10	Accuracy: +/- 1% for all.
11	Calibration certificate should be provided with the supply.
12	Disposable tips 5000 each volume.
13	Should be supplied with tips holder rack & pipettes stand.
14	ISO 13485 Certificate

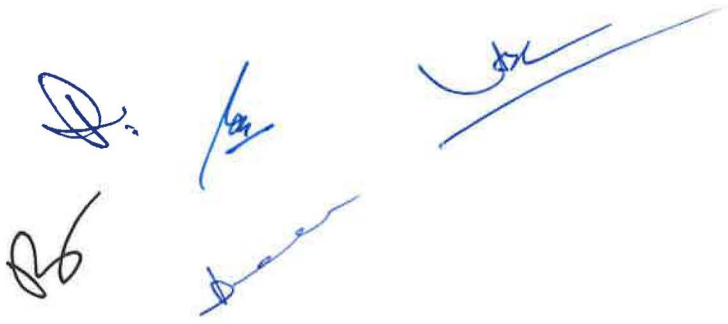
Equipment :Plasma Expressor

1	Should be Manual plasma expressor
2	Should have Acrylic Plate & SS top SS ball mounted
3	Should be ISO 13485

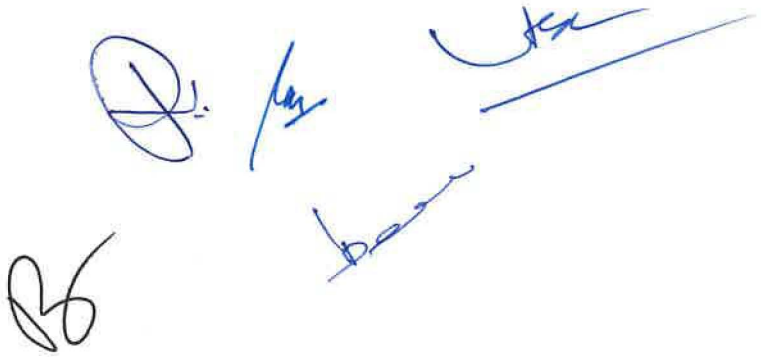
Blood Bag Tube Sealer

SN	Technical Specification		
1	Should be heavy duty radio frequency sealer.		
2	Should be capable of doing 500+ sealing in 8 hrs and should be capable of functioning for minimum 12 hrs nonstop.		
3	Should be a compact single unit		
4	Should have high frequency sealing with low RF emission		
5	There should be automatic detection of the tube by pressing of a lever which activates sensor.		
6	Should be able to detect wet tube, leakage and sealing defects. There should be and alarm in case seal is not safe and completed.		
7	There should be uniform sealing irrespective of power supply variations.		
8	Tube thickness of up to 6 mm of diameter and wall thickness up to 0.75 mm can be sensed and sealed automatically.		
9	Should be able to making wide Seal of 2mm thickness.		
10	Indication of seal in progress should be there.		
11	Sealing time should be less than 2 sec.		
12	Separable rupture line to separate tube after sealing.		
13	Should ensure safety against electrical shock hazards, fire hazards, and mechanical hazards.		
14	There should be no hemolysis of blood in the tube segments		
15	No warm-up time should be required		
16	Should be able to withstand voltage fluctuation		
17	It should be easy to clean.		
18	**Should be easy to handle with the grip to hold the sealers**		
19	Splashguard to protect user from any kind of blood splash during operation.		
20.1	Manufacturer should have ISO 13485 certification issued from : Any Certification Bodies registered with NABCB under Medical Devices Quality Management System OR Any notified body registered with CDSCO OR Any 4-digit CE notified body		

20.2	Should have import/manufacturing license from Central licensing Authority or State licensing authority of CDSCO for Medical Devices and copy of valid license should be submitted for the quoted model. In case the supplier has not yet obtained import/manufacturing license from CDSCO for the quoted model, proof of application for CDSCO medical device license to be submitted in the bid document and valid CDSCO license to be produced before award of contract, if applicable.		
21	Weight of equipment should not exceed 7 Kg.		
22	Original literature of equipment should be submitted.		
23	Firm will have to supply the suitable stabilizer with the equipment if it is essential for the performance of the equipment.		
24	User"s list should be provided with satisfactory report for the last three years from three Licensed Blood Banks with contact details.		
25	Electrical: The equipment should be able to run on the existing electrical provision		
26	Calibration certificate shall be provided at the time of installation in respect of all the parameters that require calibration.		
27	The units shall be capable of being stored continuously in ambient temperature of 0 - 50C and relative humidity of 15-90%.		
28	The units shall be capable of being operating continuously in ambient temperature of 10 - 40C and relative humidity of 15-90%.		
	BOQ	**QTY**	**UOM**
1	System as specified	1	Nos



Platelet Agiator with incubator	
1	Platelet incubator should have the provision to store 96-platelet bags agitator.
2	Should have transparent outer door for clear visibility
3	Should have micro processor controlled LCD display with 0.1 dec C gradation and temperature graph display
4	Should have automated high/low alarm with alarm testing.
5	Should have independent temperature controller.
6	Should have 7 days inkless chart recorder with battery back up to one hour for continuous operation during power failure , should be supplied with USB port.
7	The firm will have to supply 300 temperature recorder chart papers and 10 ink pens (if the temperature recorder is not inkless) along with the equipment free of cost.
8	Should be able to maintain a temperature of 22°C with ±1degree variation with accuracy of 0.5deg C preferably 0.i deg C.
9	Should have digital temperature indicator cum controller
10	Should have forced air circulation for uniformity of temperature all over the incubator.
11	Inner chamber should be made of stain less steel and outer cabinet made of MS sheet powder coated.
	Platelet Agitator
12	Should be able to store minimum 96 random bags or aphaeresis bags of different sizes with gentle side-to-side agitation at 3.6 to 4cm, motion of 60-70 strokes per minute.
13	Graphical display of agitation speed of the agitator
	Shelves:
14	Should be made of good quality,
15	Coated with bacteria resistant material,
16	Perforated so that air circulation on both side of bags
17	Should be made of 'non slip' material
18	Removable shelves.
19	Should have noiseless heavy-duty ball bearing gear motor, which should continuously operate for 24 hours.
20	Should have built in motion alarm for unplanned ceased agitation, sensor failure, agitator off.



21	Manufacturer should have ISO 13485 certification issued from : Any Certification Bodies registered with NABCB under Medical Devices Quality Management System OR Any notified body registered with CDSCO OR Any 4-digit CE notified body
22	Should have import/manufacturing license from Central licensing Authority or State licensing authority of CDSCO for Medical Devices and copy of valid license should be submitted for the quoted model. In case the supplier has not yet obtained import/manufacturing license from CDSCO for the quoted model, proof of application for CDSCO medical device license to be submitted in the bid document and valid CDSCO license to be produced before award of contract, if applicable.
23	Firm will have to supply the stabilizer if required along with the equipment free of cost
24	Original literature of equipment should be submitted.
25	User's list should be attached with satisfactory report for the last three years from three licensed blood banks with contact details.
26	Electrical: The equipment should he able to run on the existing electrical provision
27	Suitable UPS with maintenance free batteries with min 1 hr back up

Blood Bank Refrigerator (300 Bag)			
SN	Technical Specification		
1	**Description of Function**		
1.1	For storing blood & blood products. It should be microprocessor based.		
2	**Technical Specifications**		
2.1	Blood Bank Refrigerator should have capacity to hold 300-350 blood bags of 450ml capacity		
2.2	Temperature range from 2 deg C to 6 deg C with accuracy of less than equal to 0.5 deg C.		
2.3	Holdover time : full load of blood bags at 4 deg C should take more than 1.5 hrs to rise above 6 deg C if power off and it should be supported by providing performance curves		
2.4	Cooling down time: A full load of blood bags at 25 deg C should not take more than 12 hrs for all the bags to reach below 6 deg C and it should be supported by providing performance curves.		
2.5	It should have galvanized sheet steel construction, powder coated and adjustable feet.		
2.6	No welded joint to be exposed for rusting.		
2.7	Insulation of high-grade pressure – foam material greater than 80mm thick CFC free.		
2.8	Lockable door with front glass and tight sealing (Magnetic closing) surround to prevent cold loss. Should have at least 4 rollout type drawers with stainless steel make. Door opening angle limited to 110 degrees with door opening audio and visul alarms.		
2.9	Automatic defrosting and condensed melt water evaporation.		
2.10	Re-circulating air-cooling system.		
2.11	Hermetically enclosed, low noise, vibration proof/ low vibration compressor.		
2.12	Visual and audio signal alarm system for over temperature, under temperature ,power failure, door opening		
2.13	Epoxy coated outside finish and **GS or SS interior**		
2.14	Low noise, automatic defrosting, CFC free & HCFC free.		
2.15	Digital temperature display should be provided. Should provide datalogger or circular chart recorder.		
2.16	Calibration certificate shall be provided at the time of installation in respect of all the parameters that require calibration.		
2.17	Power input to be 220-240VAC, 50Hz.		

2.18	Manufacturer should have ISO 13485 certification issued from : Any Certification Bodies registered with NABCB under Medical Devices Quality Management System OR Any notified body registered with CDSCO OR Any 4-digit CE notified body		
2.19	Should have import/manufacturing license from Central licensing Authority or State licensing authority of CDSCO for Medical Devices and copy of valid license should be submitted for the quoted model. In case the supplier has not yet obtained import/manufacturing license from CDSCO for the quoted model, proof of application for CDSCO medical device license to be submitted in the bid document and valid CDSCO license to be produced before award of contract, if applicable.		
2.20	The units shall be capable of being stored continuously in ambient temperature of 0 - 35 deg C and relative humidity of 15-90%.		
2.21	The units shall be capable of being operating continuously in ambient temperature of 10 - 40C and relative humidity of 15-90%.		
2.22	**Accessories**		
	Datalogger - 1 no or Circular chart recorder 1000 nos Suitable voltage regulator/stabilizer meeting ISI specification - 1 no		
	BOQ	**QTY**	**UOM**
1	System as specified	1	Nos

Sl No	STAGE INCUBATOR
	Incubator electric with thermostat
	Technical specifications:
1	Capacity: 100-150L
2	Interior chamber: Stainless steel for easy cleaning and decontamination
3	Timer: 1 min. to 100 hours and hold position
4	Minimum turbulence and no cross contamination
5	Adjustable safety thermostat for temp setting at 1 deg C increment
6	Temp Accuracy +/-1% of required temp, with inbuilt Temperature Sensor
7	Internal glass door for the observation
8	With minimum two adjustable shelves
9	Audiovisual Alarm to Indicate when temperature deviates more than 1°C from set point, and when program or time has finished. Alarm may be muted.
10	Peltier or Jacket or Blanket heating with continuous air circulation and Heating by natural/forced convection for homogenous temperature distribution
11	Temperature range 35 C to 80°C
12	There should be a Membrane Keypad with LCD/LED to set and display operating parameters, current status, running time and alarm conditions for time and temperature.
13	Interior lighting facilities, insulated door fitted with heavy hinges handle locking, mechanical door lock.
	Power Supply:
14	Power input to be 220-240VAC, 50Hz fitted with Indian plug
15	Suitable UPS with maintenance free batteries for minimum one-hour back-up should be supplied with the system.
	Standards:
16	Should be European CE or US FDA or BIS approved product.
17	Demonstration of the product is must.

Comonent Centrufuge (8 Bags)

SL.No	Technical Specification
1	Design: Stable, sturdy all-steel design with stainless steel rotor chamber. Easy to clean / corrosion resistant paintings
2	Max. rcf : 6,000 x g to 6400 x g
3	Max. speed: At least 4,000 rpm to 4500 rpm.
4	Max. volume: Should be able to accommodate twelve or sixteen 350 ml and 450 ml single, double, triple, quadruple, quintuple blood bags with SAGM bag and empty satellite bags with **'In Line filter system'.**
5	Drive unit: Maintenance free induction drive.
6	Operation:
6.1	Should have 25-30 programming of all parameters
6.2	Should have digital display
7	Programme: Should be tamper proof.
8	Safety of operation : Lid-lock and interlock, imbalance display and cutout, steel-armoured chamber, protection of overheating of rotor and compressor
9	Protection of data: In event of power interruption or complete failure, data should remain stored for 2-3 weeks
10	Documentation: Should have software which should be compatible with hospital information system of the institute and/or Blood Bank software any interfacing required must be provided by the firm.
11	User-friendly handling: The equipment should be movable on castor wheels however it should have facility to be placed on four solid feet. There should be no need for ground fixing. Digital display should have keys for controlling basic functions located on the front panel of the machine for immediate access. The machine should be equipped with an automatic lid lock.
12	Digital display and adjustment parameters should Include:
a.	Acceleration: Different acceleration profiles
b	Deceleration: Different deceleration profiles
c.	RCF value: 4 digit, should be adjustable
d.	Speed: 4 digit, should be adjustable
e.	Centrifugal time: Format should be as hour and minutes
f.	Programme number: Multiple programmes
g	Temperature control: Adjustable in 10 intervals
h	Temp. range: 4degC to +22degC
i.	Min. temp. at max. rcf: 4degC

j.	Error message: Programme error, imbalance, lid open or any other error
13	Refrigerant: CFC-free
14	Warm air Outlet: From sides and rear/front of the Machine
15	Should be supplied with following Standard Accessories:
15.1	Swing-out rotor with/ without wind shield, should be able to accommodate twelve or sixteen 350ml and 450ml single, double, triple, quadruple/quintuple blood bags with SAGM bag and empty satellite bags with In Line filter system.
15.2	Eight (8) buckets (one bucket for 1 blood bags) for centrifuging 12 or 16 units of bags.
15.3	Removable Plastic inserts, for centrifuging twelve or sixteen 350ml and 450ml single, double, triple, quadruple/quintuple blood bag system with SAGM bag and empty satellite bags with In Line filter system for preparing blood components like Red Blood Cells, Plasma /FFP/ Platelets concentrate and Cryoprecipitate.
15.4	One extra set of above Plastic inserts will have to be provided by the firm.
15.5	The firm must supply balancing weights and balancing plates.
15.6	The firm must supply Hook adapter to spin small volume of Cord Blood and Buffy coat.
15.7	Operation and Maintenance manual should be provided in original.
15.8	Firm must supply the stabilizer with the equipment.
16	Noise Level should be less than 70 dB
17	Original literature of equipment should be submitted.
18	Manufacturer should have ISO 13485 certification issued from : Any Certification Bodies registered with NABCB under Medical Devices Quality Management System OR Any notified body registered with CDSCO OR Any 4-digit CE notified body

19	Should have import/manufacturing license from Central licensing Authority or State licensing authority of CDSCO for Medical Devices and copy of valid license should be submitted for the quoted model. In case the supplier has not yet obtained import/manufacturing license from CDSCO for the quoted model, proof of application for CDSCO medical device license to be submitted in the bid document and valid CDSCO license to be produced before award of contract, if applicable.
20	Bidder should provide suitable UPS along with equipment to provide adequate power back-up for at least 30 min. in case of power failure. UPS should be covered during warranty and CMC period.

Trinocular microscope - Teaching
Technical Specification
Frame
Optical system – Infinity corrected optical system
Focus - Stage height movement by roller guide (rack & pinion), stroke with coarse adjustment limit stopper, Stage mounting position variable, high sensitivity fine focusing knob.
Illuminator - Built-in Koehler illuminator for transmitted light,**LED light source with lifetime of 20000 hrs or more** and built-in filters.
Revolving nosepiece Interchangeable reversed quintuple nosepiece.
Observation tube
Wide field trinocular, inclined 30°.
Stage
Spill resistant, coaxial stage with left or right hand low drive control: with rotating mechanism and torque adjustment mechanism.
Condenser
Swing out Achromatic (N A. 0.9), for 1.25X- 100X (swing-out: 1.25X-4X)
Objectives
4x/**5x**, 10x, 20x, 40x, 100x
40x and 100x should be spring loaded
Camera
Photo system with beam splitter.
Digital color CCD/**CMOS** camera with suitable mount.
Camera specification – **CMOS/**CCD 5 MP or better, 12bit, USB interface.
Image management software with High Resolution Monitor & Computer
Computer specification –Intel I5 3rd generation processor ,8GB RAM ,500GB hard disk, licensed operating system and HD LED display screen.
Facility to interface with HD LCD projector.
The product should be CE or FDA or BIS Certified

8	**Digital SLR Camera**
	Digital SLR at least 20 megapixel with micro, macro, wide angle zoom lenses, Flash and other accessories
9	**Digital Automatic camera > 5 megapixel(Sony/Nikon/Konica/Canon)**
10	**Standalone paraffin dispensing module cold plate holding more than 100 cassettes**
11	**Stand alone cold plate**
13	**Coplin Jars**
	Coplin Jars (for fixing pap smears)
14	**Water bath (Tissue flowing)**
	For precise control of different samples at constant temperature. Temperature is
	controlled by capillary type thermostat, from ambient to 80°C with an accuracy of ±1°C. Dia × Depth 250 × 125 mm
29	**Stop watch**
	Stop watch reding at 1/5 secound.
32	**Haemocytometer (New Improved Neubauer's Chamber with RBC and WBC Pippets)**
	Thick glass slide with central depressed plat form separated on either slide form remain platform by deep moats. Level of this platform exactly o.1mm lower than the general surface of slide.
	Depressed platform is ruled in squares central depressed platform is divided in to two parts by a length wise moat and from surrounds slide by two breadth wise moats.
	16 square large block is demarcated from its neighbor by an extra interrupted line
	Central large square divided in to 25 square.

GROSSING STATION	
	Technical Specification
	The equipment should be a floor mounted & should have hydraulic height adjustment facility from 2.5 feet to 3.5 feet approximately.
	There should be facility for photography attachment. The photography attachment should have facility for enlargement. **There should be an attachment for video & audio recorder**
	Should be supplied with the following:
	(i) Camera mount facility for digital camera to securely hold camera, should have adjustable ball and socket system, to let the user put camera right where he/she wants it and also should allow ease of adjustment & better coverage.
	(ii) Video camera mount which holds video camera securely, adjustable ball & socket system, in order to let the user to put the video camera right where he/she wants it & also allow for ease of adjustment & better coverage.
	Should be supplied with the following:
	(1) Digital SLR Camera with 18-55 lens, CMOS Sensor, 16 GB card for recording good quality of photographs with computer interphase (18.0 Mega Pixel). HDMI cable & Carry bag should also be provided.
	(2) Video Camera: Quality should be suitable for purpose of recording grossing steps, a CC TV Camera should be provided.
	Specification for CC TV Camera:-
	Should have 16 Mega pixel or better.
	o Optical Zoom-12x or better
	o Digital Zoom-16x or better
	o Focus-Autofocus
	o Built-Durable & robust, shock resistant and capable of withstanding light showers.
	o Video-Full HD 1080, should save still images during video recording.
	o Sensor-CMOS Sensor
	o Connectivity-USB 2.0
	o A compatible DVR with foot switch should be provided.
	o Memory-Minimum 16 GB Micro SD Card or better.
	o Dimensions-Less than 90 mm (w) x 90 mm (h) x 200 mm (d)
	o Accessories- USB Cable, AC Adaptor, Power Cord, Lens Cap, Micro HDMI Cable.
	o Warranty-Two (2) years.
	(3) Digital voice recorder: Audio recorder stacked with premium features and enhanced DSS Player Pro with flex arm microphone and Dictation software for outstanding performance should be available.
	For IT support, the following should be supplied:
	(i) Computer from Branded company 3.0GHZ, Intel Core **i7** or more, 4 GB DDR3 RAM or more, DVD writer, **1TB** or higher HDD, along with **21"** Flat LED screen monitor, 2USB 2.0 port SD Card slot with in-built CPU.
	(ii) Mount for Monitor and keyboard with mouse.

	There should be facility for digital measurement of grossing specimens
	There should be IT support for storage and retrieval of data recorded with TFT display and recording system.
	There should be a formalin tank on top of the station with direct supply system to the work area or there should be a formalin container with spigot.
	Should have Hot and Cold water mixing faucet with foot operated control (foot switch/pedal) for hot and cold water On/Off.
	The station should be made of noncorrosive high grade stainless steel.
	Should have Self Contained Ventilation Assembly with blowers & replacement filters. 10 additional filters should be provided.
	Sink with removable filter and ½ hp Commercial Disposal system of corrosion resistant stainless steel construction with on/ off switch should be provided.
	ILLUMINATION:
	(i) Top mounted LED LIGHT fixtures
	(ii) Incandescent light with 3X MAGNIFIER mounted on flexible arm.
	Magnetic front board should be available to stick instruments for grossing.
	Dimension of the table should be approximately:
	Length: 4.5 to 5.5 feet.
	Height (Lowest): 6.5 to 7.0 feet.
	Height (Fully elevated): 7.0 to 9.0 feet.
	Width: 2 to 3 feet.
	i. Equipment should have END RINSE ASSEMBLY (with ON/OFF valve) which allows debris to flow towards the sink basin.
	ii. Should be supplied with SPRAY HOSE with Easy grip assembly with flexible hose, conveniently placed for easy spray cleaning of debris.
	iii. DISSECTION BOARD: Polypropylene construction to help preserve dissecting knives and scalpels when in use.
	iv. REMOVABLE MEASURING RULE: Anticorrosive metal device for ruling a portion of the subject should be provided, the ruler should include a scale in centimetres and inches.
	Document supporting track record and satisfactory performance from institutes of national importance (minimum one) should be provided.
	Five (5) years warranty and Five (5) years CMC.
	Following Accessories should be provided:

	1. KNIFE SHARPENER to provide straight and serrated edges; should be 100% diamond abrasive; should have a three step process to provide razor sharp edges. First step should be Sharpening, second step should be honing and the last step should be for stropping and polishing.
	2. HAND HELD BONE SAW: Autopsy Saw with Bone vacuum dust collector having HEPA filter should be provided.
	Autopsy saw should come with 10 feet cord for greater mobility and with following blades and accessories:-
	i. Round Blade without arbour (2.5 in/6 cm): 2 Nos.
	ii. Section Blade without arbour (2.5 in/6 cm): 2 Nos.
	iii. Standard Saw Arbor: 2 Nos.
	The saw should be able to be connected to the Bone Vacuum Dust Collector.
	Bone Vacuum Dust Collector should come with vacuum nozzle, disposable filter cartridge (HEPA Filter) and 10 feet power cable.
	3. C- FOLD PAPER TOWEL HOLDER: Made of stainless steel.
	4. EYE WASH DRENCH ASSEMBLY: Should have flip down way to remove eye contaminants, auto flow eyewash.
	5. HANDS FREE SOAP DISPENSER: should have pump mechanism to provide quick and precise dispensing; should be Deck or Wall Mount.
	6. ADJUSTABLE AND STATIONERY STAINLESS STEEL SHELVING to keep accessories
	7. WRITING PLATFORM with a lift over storage drawer.
	8. HANGING DIGITAL AUTOPSY SCALE with Scale Pole & Bracket factory fitted to weigh specimens of 0.1 Kg x 13.6 Kg
	• Ability to 0 tare bow, ring and pan
	• Bow, ring and pan should be provided
	• The Scale Pole height should be able to be secured anywhere along with 360 degree turning ability
	9. CASSETTE HOLDERS: three boxes which can be mount to rail in front of the grossing station.
	10. TWO FORM HOLDERS mounted on the table to store documents away from any fluids and risk of damage.
	11. GLOVE BOX HOLDER·
	05 YEARS WARRANTY WITH QUOTE FOR NEXT 05 YEARS CMC IS REQUIRED INCLUDING ALL ACCESSORIES.
	The product should be US FDA or European CE or BIS approved. For class I product, European CE should be read as EC Declaration of Conformity along with ISO 13485 certified.

Portable Autoclave (25L)	
	Technical Specification
	Suitable of general laboratory use as well as for field sterilization of instruments and dressings etc.
	It should be portable with capacity 20-25 L
	The sterilizer should be made up of S.S. Sheet deep drawn to cylindrical shape.
	Dome shaped S.S. lid is to be provided which will seal the autoclave with neoprene joint less gasket.
	The lid should be tightened to the body when closed.
	The working pressure is 1.1 to 1.2 Kg./cm2 (15-18PSI).
	It should have seamless construction which will not allow bacterial residue and contamination.
	It is equipped with dial pressure gauge 0-60 PSI, spring loaded safety valve, dead weight type safety valve and steam release valve.
	The load is held in dressing drums (optional), which is supported on a stand (tripod) the autoclave is hydraulically tested at twice the working pressure as per ISI requirement.
	Should be with plug & cord.
	accessories : Dressing Drum
	Size : 350 × 300-325 mm
	Accessories : Dressing Drum
	The product should be US FDA or European CE or BIS approved. For class I product, European CE should be read as EC Declaration of Conformity along with ISO 13485 certified.

Chemical Balance	
	Technical Specification
	Description of Function
	Electronic Balance is required for precision weighing of Lab samples.
	Technical Specifications
	Weigh accurately up to 3rd decimal place
	Fully automatic time and temperature controlled internal calibration and balance should be capable to adjust itself
	Auto zero Setting
	Weighing capacity up to 200g
	Readability 0.001g
	Repeatability 1mg or less
	Setting time - less than 2 seconds
	Suitable for internal and external adjustment weights
	PC connectivity
	Balance should have
	Liquid Crystal Display (LCD) for display
	IR sensors for hands free operation
	warns if balance is not correctly levelled
	automatic and detachable draft shield
	Detachable and adjustable terminal
	Facility for user administration and password protection.
	Integrated automatic safety function for external routine operations
	Alphanumeric data entry of more than 2 IDs
	The product should be US FDA or European CE or BIS approved. For class I product, European CE should be read as EC Declaration of Conformity along with ISO 13485 certified.
	Power Supply
	Power input to be 220-240VAC, 50Hz
	Suitable Auto voltage corrector with spike protector should be available.
	Suitable UPS with maintenance free batteries for minimum one-hour back-up should be supplied with the system.
	Resettable overcurrent breaker shall be fitted for protection

HEATED HUMIDIFIED HIGH-FLOW NASAL CANNULA

Features: -

1. Higher Flows ideal for Pediatric to Adult with flow selection from 10 to 80 lpm
2. Lower Flows ideal for Neonates to Infant with flow selections from 2 to 10 lpm
3. Screen Size: 3.5-inch High Definition colour display
4. Temperature Selections: 31°C, 34°C, 37°C
5. Max. oxygen input: 60L/min
6. Sound Level < 20dB at 10lpm flow rates.
7. Option to lock the setting suitable for the patient.
8. Option to choose the circuit type F&P or AIRT-B1
9. Maximum temperature of delivered gas: 43°C
10. Maximum capacity of water chamber: >90ml (HUMID-BM) or >500ml (HUMID-BH)
11. Oxygen Concentration: 21% ~ 100%
12. Power consumption: < 350 watts
13. Weight: 1.7 kg

EACH unit is supplied with one each of the following:

1. Main unit with power cord and Operation Manual
2. Heater wire Patient Circuit complete with auto-filling Water Chamber X 5 Sets
3. Nasal Cannula with connecting tubing in any one sizes only. X 5 pcs. (Available Options are ADULT (Large), Pediatric (Medium) or Infant (Small)
4. Oxygen Tubing to Wall Socket to hospital Oxygen Supply.
5. Flow Meter with Mounting Socket only (for use with IV pole to be provided by the Customer, unless specifically included as a separate line item before the F.O.R. Price)

Stand for HHHFO2 Therapy - 1 (no.)

1. Stand with a Wide Base having 5 wheels, 2 of which are lockable
2. Post for hanging the fluid/water
3. Plate for mounting/placing the HHHFNC Oxygen device.
4. Basket for the accessories

Heater Wire Single Limb Disposable Circuit with Chamber and Connector to Machine - 25 sets

Hint Nasal Cannula Small and Medium - 25 each (Set.)

Disinfectant Unit - 2 (Set.)

1. USB-based rechargeable Ozone disinfecting unit.
2. One unit is good for use on multiple units but can be used one at a time.

Filter - 8 (Set.)

1. Used during disinfecting the unit

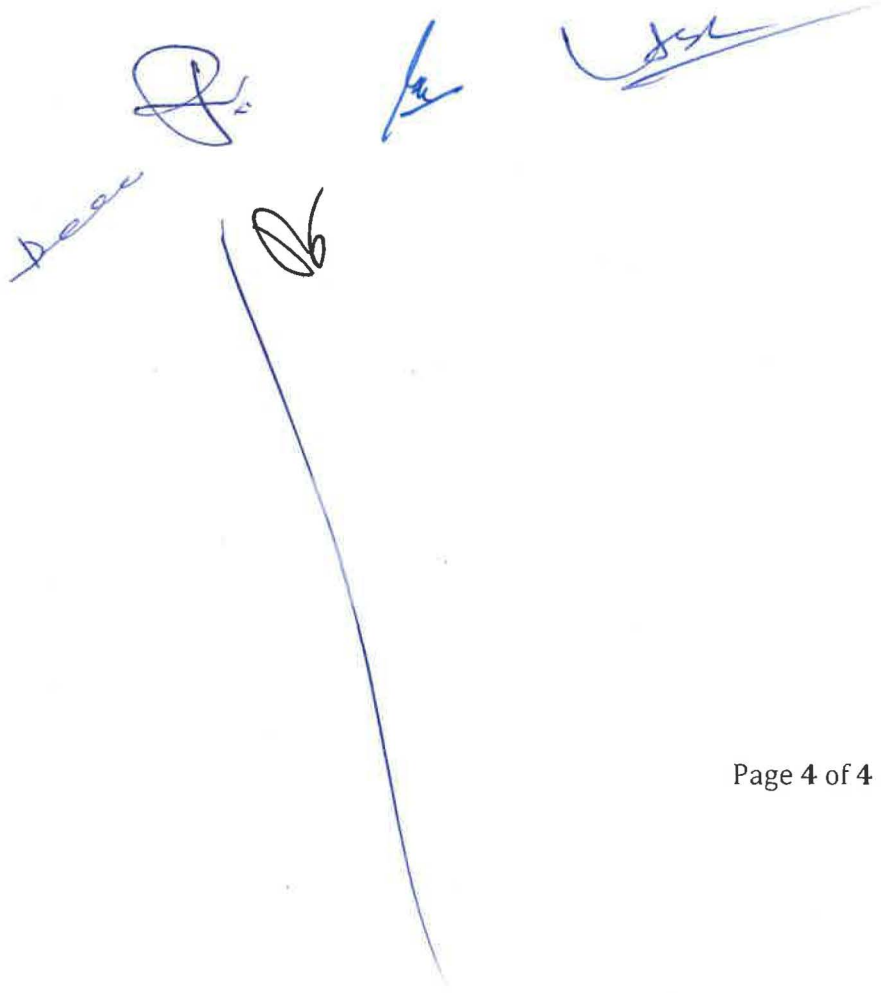
Conditions for tenderer:

1. All accessories should be from the same Original Equipment Manufacturer for the main unit.
2. Instruments must be ISO certified and a copy should be enclosed. (The ISO Certificate must be issued by any organization accredited by the Bureau of Indian Standard or accredited by the international accrediting forum "IAF" (Certificate to be attached).
3. Should be USA FDA and/ or European CE be approved by 4 digits notified body.
4. Other necessary certifications, if any, will be provided by the bidder for the smooth functioning of the machine.
5. Installation process should be performed by O.E.M trained service engineers/ service representatives on OEM letterhead or Service Report within 15 days of supply, with the mandatory provision of providing preventive services visit of OEM trained Service Engineer/ Service Representative quarterly per year till the completion of warranty period (i.e., 20 visits for the first 05 years) & further quarterly visits (04 visits/year) year till the completion of CMC period.
6. The equipment should have a Brand name/ Model Number embossed/etched on the equipment.
7. All the technical specifications in the compliance statement must be supported by Original Literature from the firm/ O.E.M with highlighting Numbering & flagging of all technical certificates.
8. Offered Equipment should have a strong Government Installation base.
9. Offered Equipment should have a Regional Sales Service Centre of the Original Equipment Manufacturer in the region for a 95 % uptime guarantee.

10. For the offered main unit, the essential, optional required consumables'/accessories' shelf life should be declared on the Original Equipment Manufacturer's letterhead.
11. In case of technical snag/failure/breakdown the response time for the inspection should be within 24 hours and repair within 05 days otherwise provide a service machine/ alternate arrangement to be made till the period of recovery of the breakdown of the unit, failing which attracts penal action as per the decision of institute/ hospital.
12. For offered equipment the Training of technical staff and users should be performed by Original Equipment Manufacturer trained Service Engineers at the proper designated place- at bidders' cost.
13. Company should quote their latest model and need to provide an affidavit for the same.
14. As a tendering process the Demonstration of the offered Equipment is Mandatory at hospital/institute premises or other designated places at the bidder's cost.
15. The bidder must comply with the General Financial Rules and their modifications if any issued by the Government of India- 2017.
16. Any bidder from a country that shares a land border with India will be eligible to bid in the tender only if the bidder is registered with the Competent Authority (i.e., Registration certificate issued by the Ministry of Commerce and Industry (Department for Promotion of Industry and Internal Trade- DPIIT after October 2020). If any such bidder is not registered with DPIIT they will be liable for technical disqualification.
17. Principal (OEM) must authorize only one agent to be quoted in the bid otherwise multiple quotes through different agents in the same bid will be canceled.
18. The Bidder and its OEM both have to submit a notarized affidavit on the Indian Non-Judicial Stamp Paper of Rs.100/- that the bidder has not quoted the price higher than the current financial year and last financial year supplied to any government Institute/ Organization/ reputed Private Organization. OEM also has to submit that the price quoted by the bidder in the bid is on its behalf and the lowest in the current and last financial year in the country. Therefore, if at any stage it has been found that the supplier and its OEM have quoted lower rates than those quoted in this bid; the Institute (the purchaser) would be given the benefit of lower rates by the Supplier and any excess payment if any, will become immediately payable to the Institute (the purchaser). If such an affidavit is not submitted, the bid will be outrightly rejected. (Part of technical bid).
19. Guarantee / Warranty Period: Separate offers of Comprehensive Maintenance Contract (CMC on main equipment) and Annual Maintenance Contract (AMC on main

equipment) for further 5 years after expiry of 5 years of warranty (i.e., 6th, 7th, 8th, 9th and 10th years) in rupees only (and on basis of percentage of price) should be included in a financial bid in the absence of which the offer is liable to be rejected. Payment for CMC/AMC shall be made only after the expiry of the warranty of 5 years, in case the Institute (the purchaser) decides for availing of CMC/AMC services. Contract for CMC/AMC shall be decided on expiry of warranty but rates (not more than 5% inclusive of all taxes for 6th to 10th year) will be frozen at the price of an issued purchase order before the release of payment by the Institute (the purchaser). However, the Institute (the purchaser) may decide not to enter into any CMC/AMC contract without assigning any reason for the same, which shall be binding upon the bid.

20. Should provide 5-year CMC. CMC cannot be more than 5% of the contract value.
21. System configured application-specific educational video tutorials shall be provided as standard with the system.
22. Details of service outlet in India to render services during 5 years warranty period.
23. The principals must give a certificate if the supplier/vendor is changed during the course of the guarantee/warranty period, the principals would be responsible for the upkeep/maintenance of the quote/supplied equipment, besides honouring all the terms and conditions of CMC/AMC in letter and spirit.



SPECIFICATIONS FOR TRANSPORT VENTILATOR:

1. Should be a time-cycled ventilator operating on mains, battery or ambulance/car battery. Battery backup should be for a minimum of 4 hours.
2. Ventilator should be of low weight (not more than 6 kg) and with an operating range from -20 to +50 degrees centigrade.
3. Should be supplied with autoclavable breathing circuits (Both Adult and Pediatrics): 2 each
4. Screen Size 5 inches.
5. Should have integrated display of set and expired data as below

a) Tidal volume: 50 ml- 2 litres.

b) Rate:2-50 breaths/min.

c) PEEP (integrated in main unit):0 to 20 mbar/cm H_2O

d) Inspiratory Pressure-20 - 60 cm H_2O

e) Flow trigger: 3 - 15 Lpm

f) Pressure Support:0 - 35 cm H_2O

g) Ventilation Waveforms.

h) FiO2: 40% to 100%

6. Should have the following ventilation modes:

a) NIV

b) IPPV (CMV)

c) Assist Control

d) SIMV

e) CPAP

f) Pressure control

g) Pressure Support

7. Should have both audio-visual alarms for:

a) high & low-Pressure b) Apnoea c) Setting errors d) Low battery e) Low oxygen supply

8. Standard scope of supply to include requirements

a) Main unit with inbuilt battery

b) Breathing hose set with expiratory valve and flow sensor

c) AC – DC adaptor

d) Oxygen high-pressure hose

e) Test lung

f) Instruction Manual

9. Quality standards and support requirements:

a) The offered unit should have CE with Medical Directive & European standard 4-digit notified body/ US FDA certificate

b) Vibration standard MIL-STD 810F, method 514.5

c) Airworthiness RTCA DO-160 D, section 7,8,21

10. Should have local service facility. The service provider should have the necessary equipment recommended by the manufacturer to carry a maintenance manual.

11. Upgradable with $ETCO_2$ monitoring.

Conditions for tenderer:

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2. Instruments must be ISO certified and a copy should be enclosed. (The ISO Certificate must be issued by any organization accredited by the Bureau of Indian Standards or accredited by the international accrediting forum "IAF" (Certificate to be attached).
3. Should be USA FDA and/ or European CE be approved by 4 digits notified body.
4. Other necessary certifications, if any, will be provided by the bidder for the smooth functioning of the machine.
5. Installation process should be performed by O.E.M trained service engineers/ service representatives on OEM letterhead or Service Report within 15 days of supply, with the mandatory provision of providing preventive services visit of OEM trained Service Engineer/ Service Representative quarterly per year till the completion of warranty period (i.e., 20 visits for the first 05 years) & further quarterly visits (04 visits/year) year till the completion of CMC period.
6. The equipment should have a Brand name/ Model Number embossed/etched on the equipment.
7. All the technical specifications in the compliance statement must be supported by Original Literature from the firm/ O.E.M with highlighting Numbering & flagging of all technical certificates.
8. Offered Equipment should have a strong Government Installation base.

9. Offered Equipment should have a Regional Sales Service Centre of the Original Equipment Manufacturer in the region for a 95 % uptime guarantee.
10. For the offered main unit, the essential, optional required consumables'/accessories' shelf life should be declared on the Original Equipment Manufacturer's letterhead.
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21. System configured application-specific educational video tutorials shall be provided as standard with the system.
22. Details of service outlet in India to render services during 5 years warranty period.
23. The principals must give a certificate if the supplier/vendor is changed during the course of the guarantee/warranty period, the principals would be responsible for the upkeep/maintenance of the quote/supplied equipment, besides honouring all the terms and conditions of CMC/AMC in letter and spirit.

SPECIFICATIONS FOR BINOCULAR MICROSCOPE

1. Robust piece Aluminum die cast Sturdy Stand with Built-in Window for easy carriage
2. 360 Degree rotatable Inclined Binocular head 45 Degree
3. Two Eyepiece Highest Quality 10x/18mm wide angle anti-fungus field eyepiece with diopter adjustment on one side
4. Objectives- Parfocal, antifungal coated Achromatic 4x, 10x, 40x(S/L), 100x(S/L) (oil immersion)
5. Nosepiece- Quintuple revolving Nosepiece with rubber grip for easy rotation
6. Stage-Mechanical Stage 140x140mm with fine Vernier graduation with co-axial controls, adjustment for slide manipulation preferably through 75 x 45 mm SS slide holder
7. Sub-stage Abbe N.A. 1.25 condenser focusable on ball bearing guideways with iris diaphragm and filter holder
8. Ball drive Coaxial Coarse & Fine Focusing Controls capable of smooth, fine focusing movement with torque adjustment ring and adjustable slide safety stopper
9. Illumination- Built-in white LED light source with intensity control and LED life of more than 10,000 Hrs
10. All the main controls should be located close together including the intensity control knob
11. Power Requirement: 100-265V, 50/60 Hz SMPS Based
12. English version operational and maintenance manual in hard copy
13. Duly packed in Styrofoam pack with Dust Cover
14. Material Test Reports and Brochure to be submitted

Conditions for tender:

1. All accessories should be from the same Original Equipment Manufacturer for the main unit.
2. Instruments must be ISO certified and a copy should be enclosed. (The ISO Certificate must be issued by any organization accredited by the Bureau of Indian Standard or accredited by the international accrediting forum "IAF" (Certificate to be attached).
3. Microscope should be IS 4381 and IS 8275 marked
4. Certification: ISO 13485 and IEC 60601-1-2 must for electrical safety.

5. Should be USA FDA and/ or European CE be approved by 4 digits notified body.
6. Other necessary certifications if any required will be provided by the bidder for the smooth functioning of the machine.
7. Installation process should be performed by O.E.M trained service engineers/ service representatives on OEM letterhead or Service Report within 15 days of supply, with the mandatory provision of providing preventive services visit of OEM trained Service Engineer/ Service Representative quarterly per year till the completion of warranty period (i.e., 20 visits for the first 05 years) & further quarterly visits (04 visits/year) year till the completion of CMC period.
8. The equipment should have a Brand name/ Model Number embossed/etched on the equipment.
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10. Offered Equipment should have a strong Government Installation base.
11. Offered Equipment should have a Regional Sales Service Centre of the Original Equipment Manufacturer in the region for a 95 % uptime guarantee.
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16. As a tendering process the Demonstration of the offered Equipment is Mandatory at hospital/institute premises or other designated places at the bidder's cost.
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Examination Couch	
Sl. No	**Technical Specification**
1	Overall dimension 1975 mm (L) x 560 mm (W) x 805 mm (H)with +/-5% tolarance
2	Examination couch with three drawers with three cabinets, inbuilt step stool and BP tray holder
3	The base frame should made of 30 mm x 30 mm 1.6 thick ERW tube. The cabinets should made of 1 mm thick CRCA sheet with recessed plastic handles and with lock and door clatch.
4	The drawers should made of 1 mm thick CRCA sheet with recessed plastic handles and with ball slides for smooth glide.
5	The mattress platform should be made of 12 mm thick and made of PU foam, leatherite and ply board.The headrest should be adjustable on gas lift.
6	There should be ss304 made tissue roll holder.
7	There should be 1 mm thick CRCA made step stool with leveler with ball slide for smooth operation.
8	There should be 1 mm thick CRCA made BP aparatus holder.
9	Total load bearing capacity should be 135 kg.
10	All the metal parts should be pre treated and powder coated with epoxy polyester powder coating.
11	Manufacturer should be ISO 13485:2016

Instrument Trolley	
Sl. No	**Technical Specification**
1	Overall dimension: - 902(L) X 53(W) X 915(H) mm.
2	Top shelf & bottom shelf should be made of SS304 sheet with 1mm thickness & 1.2mm. Rest of the components like supporting legs, horizontal bar handle should be made of SS 304 pipe having dia 31.8, 12.7 mm respectively.
3	The castors of high quality plastic injected molded & anti static having the dia of 125mm should be used
4	Handles made of SS 304 pipe having section of 16mm & thickness of 1.2mm should be used.
5	Manufacturer should be ISO 13485:2016

IV Stand Adjustable	
Sl. No	**Technical Specification**
1	Height adjustable from 740 mm to 1150 mm
2	It should be fully SS made used on bed with telescopic rod for height adjustment.
3	The bottom adapted should be 12 mm dia, fixed tube should be 15.9 mm dia , 1.6 mm thick ERW Tube. Telescopic rod should be 12 mm dia ERW tube. There should be 4 nos 6 mm dia hooks to hand saline bags.
4	Maximum load bearing capacity should be 2kg per hook.
5	Manufacturer should be ISO 13485:2016

Mayo Trolley	
Sl. No	**Technical Specification**
1	Overall sizes of Base rectangle 504mm X 655mm X Adjustable from 800 mm to 1340 mm with +/-5% tolarance . Height adjustment will be achieved with screw knob mechanism
2	Bottom frame should be made of 1.2mm thick SS 304 tube of dimension 38 x 38mm square tube. Top frame should be of 1.2mm thick & 304 SS grade rectangular shape of dimension 30 x 30mm. Fixed tube of 3 mm thickness square in shape of 38 x 38mm telescopic tube should be used of 2 mm thickness rectangular in shape of 30 x 30mm
3	Locking knob should be used ergonomically designed made of SS screw & nylon knob
4	Tray supporting frame should be of thickness of 1mm
5	Castors must be injection molded type of 50mm dia having high endurance, anti-static properties.
6	Safe working load must be 20kgs.
7	Manufacturer should be ISO 13485:2016

Medicine Trolley	
Sl. No	**Technical Specification**
1	Should have **powder coated 304 grade stainless steel/powder coated** Aluminium alloy or ABS Construction
2	Should have multiple long drawers to hold drug strips made of high quality epoxy plastic or steel material **or ABS** with convenient and smooth slide in and slide out motion (At least 30 separate drawers – in about six to eight rows)
3	The front of the each drawer should be half covered on which removable medicine label can be pasted and upper half open to see the contents inside.
4	Mounted on four 100mm castors (2 with brakes). Approx.Size: 750(L)x450(W)x850(H)mm.
5	Should have accessories included trash bins, transparent case box and writing surface
6	Manufacturer should be ISO 13485:2016

Oxygen Trolley	
Sl. No	**Technical Specification**
1	Cylinder Trolley (Push Type) fitted with 2 castors, MS tubular framework made of approx. 25.4mmx18G MS.100 mm dia. With M.S. body frame. Suitable for 1320 ltrs. Size gas cylinders. Trolley with SS base.
2	Manufacturer should be ISO 13485:2016

Scoop Stretcher	
Sl. No	**Technical Specification**
1	Size: 1900 x 420 x70 mm
2	It should be light weight high quality aluminium alloy meterial.
3	The strtecher should separate into two parts on pressing the two side buttons
4	Patient should be fixed on it without being moved.
5	Carrying capacity :120 Kg (Min.)
6	Manufacturer should be ISO 13485:2016

Spine Board	
Sl. No	**Technical Specification**
1	Should be in plastic material at high strength and waterproof.
2	It should have 4 rules for the quick and total fixing of the head Immobilizer and two cavities when the board lays onthe floor, when the base is blocked in the traditional usage or accommodation in the ambulance. way,that allow to avoid damages to rip-off straps during the movement.
3	It should be supplied with 3 belts with rapid unhooking buckle
4	Should have maximum radio transparency to make examination without compromise on patient condition.
5	Length: 180 to 185 cms
6	Width: 40-50 cm
7	Weight: < 6 kg.
8	Load capacity : 145 kg (Min.)
9	Manufacturer should be ISO 13485:2016

Stretcher with Trolley	
Sl. No	**Technical Specification**
1	Overall dimension should be 2005 mm (L) x 666 mm (W) x 827 mm (H)
2	It should be removable stretcher on trolley mointed on castors
3	The trolley should be made of 31.75 mm & 25.5 mm dia 1.2 mm thick & 1.6 mm thick ERW tube. The casters should be 200 mm dia diagonal lockable castors.
4	Tte stretcher understructure should be made of 25.4 mm dia 1.6 mm thick ERW tube and the top should be made of 1.2 mm thick CRCA sheet. The stretcher should have provision to mount IV pole at four corners. The product should be pre treated and powder coated with Epoxy polyster powder coating.
5	The maximum load bearing capacity should be 135 kg.
6	Manufacturer should be ISO 13485:2016

Surgeon Chair	
Sl. No	**Technical Specification**
1	Should have height adjustable through threaded screws. Height adjustment 530 mm to 720 mm
2	Should have adjustable backrest with tilt.
3	Should have adjustable and removable arm rests. Thickness of cushions on arm rests should be 25 mm
4	Should have castors with braking mechanism
5	Should be made from CRCA pipes orChrome-plated metal parts with polished aluminum base
6	Manufacturer should be ISO 13485:2016

Semi Fowler bed	
Sl. No	**Technical Specification**
1	Overall Sizes:(L)2140 mm X (W)990 mm X (H) 560 mm with +/- 5% tolerance
2	It should be one function bed which have adjustable backrest .It should have fixed height of 560 mm .
3	The main frame should be made from 6cms x 3cms x 16 G M.S. ERW rectangular tubes.
4	Two sections top should be made from 18 G C.R.C. sheets uniformly perforated and should be suitably fitted to the main frame.Should have radiolucent Backsection with X ray casset holder.
5	Head & foot board:Head & Foot board should be made of blow molded Poly propylene with anti microbial additives .Removable PP head board and foot board should have cut outs , for better gripping.
6	Castors: 125mm wheel dia, with PU tread synthetic body castor, non marking castors. Out of 4 castors two should be provided with break, mounted at diagonally opposite position
7	Side rail: The bed should be provided with one pair Side rails pull to turn down collapsable type. Side rails should be made of MS ERW tube having 25.4mm dia and 1.6 mm thick. The side rails should get locked when raised. The knob should be made out of Injection molded Nylon for ease of operation. The locking of side rail pin should be fitted with SS liner to prevent rusting and wear and tear. Side rail joints should have plastic bushes and couplings
8	All metal components should be pre treated and then powder coated with anti microbial epoxy polyster powder coating .
9	Patient load capacity should be 135 kg or more. Backrest Elevation 65°±2
10	Should be supplied with 100 mm mattress and made of 40 density pu foam. The mattress should have cover which is water resistant, x ray permeable, fire retardant.
11	Suitable good quality buffers at four corners of bed
12	IV pole: Bed should be provided with ss made telescopic saline stand with 2 nos ss 304 made hooks for holding saline bags.
13	Urinary Bag /Drain bag holder – 2 nos

Double Step Stool	
Sl. No	**Technical Specification**
1	Overall dimension should be 665 mm (L) x 485 mm (w) x 390 mm (H) with +/-5% tolarance
2	Understructure frame should be made of 19 mm x 19 mm and 1.2 mm thick vertical tubes. The stool top should be made of 1.2 mm thick . The step top should have 3.2 mm thick rubber sheet to have better grip.
3	Load bearing capacity should e 135 kg.
4	All tehmetal parts are pre treated and powder coated with epoxy polyester powder coating.
5	Manufacturer should be ISO 13485:2016

Single Step Stool	
Sl. No	**Technical Specification**
1	Overall dimension 485 mm (L) x 355 mm (W) x 210 mm (H) with +/-5% tolarance
2	Understructure frame consists of four vertical tibe, three horizontal tubes and three tubes to support the top.Tube is 19 mm dia 1.2 mm thick. The stool top should be made of 2 mm thick MS sheet metal.
3	It should have 4 mm thick three aluminium strips grooved on the top. All the metal parts are pre treated and powder coated with expoy polyster poder coat.
4	load bearing capacity- 135 kg or more
5	Manufacturer should be ISO 13485:2016

Blood bank

Refrigerator 280 L for Kits

SL.No	Technical Specification
1	Storage Capacity: Should be at least 280 Liters capacity and should be able to accommodate at least 160 nos of 450ml blood bags
2	Set temperature 4°C with temperature range 2° C to 6° C and adjustable with setting accuracy of ± 0.1° C.
3	Refrigeration: Non-CFC cooled refrigeration.
4	Should have good insulation to maintain required temperature.
5	Should have double walled glass door.
6	Microprocessor based temperature controller with integrated audiovisual temperature and power alarm function with digital monitoring display.
7	Safety features: Audio alarm for all the following parameters should be there - temperature fluctuation & power failure, set point alarm, low alarm point, Door opening audio and visual display alarm.
8	Safety thermostat to avoid negative temperatures.
9	Should have battery backup for temperature and power alarm.
10	Should have 1000 nos. of seven days graphic temperature recorder along with data logging device. The cost of the temperature recorder chart paper will be included in the total cost of the equipment financial comparison.
11	Internal temperature hold over time in case of power failure should be at least 1.5 hours.
12	Should have fluorescent light inside the Blood Bank Refrigerator with On/Off switch.
13	Should have castor wheels with locking facility.
14	While in operation, the noise level must not exceed 90 dB.
15	Original literature of equipment should be submitted.
16	Firm will have to supply the stabilizer if required along with the equipment free of cost.
17	Manufacturer should have ISO 13485 certification .

SPINE BOARD

1	Should be in plastic material at high strength and waterproof.
2	It should have 4 rules for the quick and total fixing of the head Immobilizer and two cavities when the board lays onthe floor, when the base is blocked in the traditional usage or accommodation in the ambulance. way,that allow to avoid damages to rip-off straps during the movement.
3	It should be supplied with 3 belts with rapid unhooking buckle
4	Should have maximum radio transparency to make examination without compromise on patient condition.
5	Length: 180 to 185 cms
6	Width: 40-50 cm
7	Weight: < 6 kg.
8	Load capacity : 145 kg (Min.)
9	Manufacturer should be ISO 13485:2016

PULSE OXIMETER			
1	Compact portable bedside pulse oximeter with Colour LCD/TFT display.		
2	Continuous monitoring of SpO2 (arterial blood oxygen saturation) , pulse rate and signal strength(nellcor/masimo technology)		
3	Measuring range :		
a	Spo2 : 10 to 100% minimal graduation 1%		
b	Pulse rate : Pulse rate : 20 to 240 bpm, minimal graduation 1 bpm		
4	**Accuracy SpO2 : 50 to 69% (± 3%), 70 to 100 % (±3%)**		
5	**Display shows: SpO2(%), PR, Plethymograph & perfusion bar/blip bar**		
6	The motion artifact should be minimal		
7	**Large bright display (4 inch or more) readable from more than 6 feet distance**		
8	User preset of high/low alarms on SpO2 and pulse rate monitoring		
9	Audio visual alarm for SpO2 and pulse rate in case measurements are outside preset range		
10	Silencing feature for audio alarm		
11	Display reports system errors, probe failure and built in battery status		
12	Automatic switch from mains to batteries in case of power failure		
13	Power requirements : 220 V/ 50Hz and internal re-chargeable battery (autonomy at least 2 hrs, automatic recharge)-		
14	**Manufacturer should be ISO 13485 certified**		
15	It should be European CE with a four digit notified body number/ US FDA/BIS approved product and certificate to be submitted.		
16	It must show spo2 value for low perfusion patients.		
17	**Should have RS 232C port or equivalent port for data transmission.**		
18	**Automatic Signal averaging time 4 to 12 sec**		
19	Submitted with:		
a	2 x reusable SpO2 sensors neonate, clip-on type.		
b	Patient extension cable -2 Nos.		
c	2 x reusable SpO2 sensors(finger type) for children and adolescents		
d	2 x spare set of fuses		
	BOQ	**Qty**	**UOM**
1	Pulse Oximeter as per specification	1	No

2	Reusable SpO2 sensors neonate, clip-on type.	2	Nos
3	Patient extension cable	2	Nos
4	Reusable SpO2 sensors(finger type) for children and adults	2	Nos each
5	spare set of fuses	2	Nos

S.No.	Weghting machine for dead body
	Technical Specification
	a. Length of floor scale should be 4 feet to 6 feet.
	b. Platform for keeping the body – should be sturdy, made of stainless steel, 14 gauge – size 6 feet x 2 ½ feet x 4 inch.
	c. Should have a digital meter (dial) to display the weight rapidly and measurements can be calibrated to adjust the weight of the platform.
	d. The digital meter (dial) should be enclosed dust proof and water tight stainless steel enclosure mounted on a wall. AC or DC operated.
	e. Should be able to perform under the most rigorous conditions of a mortuary conducting 15 post-mortem examinations per day measuring dead body weight ranging from 0 kg to 200 kg. Accuracy upto 25 grams.
	f. Rechargeable battery back-up pack provided for usage in power failure.
	2. System configuration accessories, spares and consumables:
	None
	3. Environmental factors:
	None.
	4. Standards, safety and Training:
	a. The product should be US FDA or European CE or BIS approved. For class I product, European CE should be read as EC Declaration of Conformity along with ISO 13485 certified.
	b. Manufacturer should have ISO certification for quality standards.
	5. Documentation:
	a. User / Technical / Maintenance manuals to be supplied in English.
	b. Log book with instructions for daily, weekly, monthly and quarterly maintenance checklist. The job description of the hospital technician and company service engineer should be clearly spelt out.
	c. Compliance report to be submitted in a tabulated and point wise manner clearly mentioning the page / Para number of original catalogue / data sheet. Any point, if not substantiated with authenticated catalogue / manual, will not be considered.
	d. Certificate of calibration and inspection.

Attendant Stool/Bedside Stool/Multipurpose Stool	
Sl. No	**Technical Specification**
1	Overall dimension of 411(l) x 411(w) x 522mm (h) with +/-5% tolarance
2	Top should be made of SS 304 sheet with buffed matt finish.
3	MS square flat tube of section 25 x 25mm with thickness of 2mm should be used
4	Thermosetting epoxy polyester powder coating must be done for all MS parts
5	Neoprene shoes should be provided to avoid the wear & tear of the product.
6	All powder coating parts must be in RAL white & plastic, rubber parts in gray. Safe working load must be 135kg.
7	Manufacturer should be ISO 13485:2016

Bed Side Screen (3 Fold)	
Sl. No	**Technical Specification**
1	Overall dimension: L 2630 X W 640 x H1720 mm with +/- 5% tolerance
2	Frame should be made of ERW tube with movable plastic hinges. The fix frame should be made of 25.4 mm dia 1.2 mm thick ERW tube, the movable frame shouuld be made of 19.05 mm dia 1.2 mm thich ERW tube and the leg frame should be made of 30 mm suqare tube with 1.6 mm thick.
3	The fixed portion should be 1075 mm width and the movable portion should be 778 mm width
4	50 mm dia wheel castors should be provided
5	All MS parts should be powder coated with thermosetting epoxy polyester. Green color Casement fabric must be provided for modesty.
6	Manufacturer should be ISO 13485:2016

Dressing Trolley	
Sl. No	**Technical Specification**
1	SS 304 sheet should be used at top for the placement of the instruments being used & also for easy portability.SS 304 sheet should be at the top as well as bottom shelf for keeping the instrument being used. Horizontal bars should be welded with legs to provide protection at sides with supporting legs for sturdy structure
2	Castors of 125mm Dia. should be used for easy in movement.
3	Spin section should be provided to the bowl giving a aesthetic look & also bucket should be provided with removable lid & a handle to lift the bucket.
4	Overall Dimension must be 1150 mm X 530mm X 915mm H with +/- 5% tolerance
5	The Top and bottom shelf should be 1 mm thick ss 304 sheet, the shelf size is 755 mm x 460 mm.
6	The supporting legs should be 31.08 mm dia 1.2 thick ss 304 tube. The horizontal bar should be 12.7 mm dia 1.2 mm thick ss 304 tube. to support top & bottom shelf.
7	Safe working load must be 40kg or more. the shelf should have 10 kg load and bowl & bucket should have capacity of 5 kg load.
8	Manufacturer should be ISO 13485:2016

Air Mattress	
Sl. No	**Technical Specification**
1	System for active pressure relieving mattress for defense against pressure ulcers
2	Should have End flaps for secure fixing
3	Mattress should have minimum dimension of 185 x 75 x 7 cms to fit almost any standard hospital bed
4	Mattress should be made of PU (Polyurethane) materials for durable and long lasting.
5	It should have Bubbled construction.
6	It should be light weight and washable.
7	Pump should be compact, and unobtrusive
8	Pump air flow shall be 4 LPM
9	Cycle time of inflation & deflation should be 3/5 minutes.
10	Pump should have visual low pressure indicator / alarm
11	Pump should have Manual pressure control
12	Mattress should support patients up to 130 Kgs.
13	Pump should have Fold away hanging hooks or built in brackets for mounting easily to bed.
14	User guidelines should be printed on pump
15	Manufacturer should be ISO 13485:2016

Attendant Bed	
Sl. No	**Technical Specification**
1	Overall dimension: (L) 1990 x (W) **770** x (H) **450** mm with +/- 5% tolerance
2	The main frame should be made from 6cms x 3cms x 16 G M.S. ERW rectangular tubes.
3	Top should be made from 18 G C.R.C. sheets uniformly perforated and should be suitably fitted to the main frame.
4	**Legs should be fitted with PVC stumps.**
5	All metal components should be pre treated and then powder coated with anti microbial epoxy polyster powder coating .
6	Safe working load must be 135 kg or more.
7	Should be supplied with 100 mm mattress and made of 40 density pu foam. The mattress should have cover which is water resistant, fire retardant.
8	Manufacturer should be ISO 13485:2016

Deep Freezer-40 Degree

1	TYPE : Upright
2	CAPACITY: **atleast 600 Litres**
3	OPERATING TEMPERTURE: -40 deg C
4	ELECTRIC SUPPLY: 220V/50Hz, 10 Amps. Single phase
5	Fully programmable microprocessor based temperature controller with membrane keypad and eye level control panel.
6	Hermetically enclosed, low noise, vibration proof/low vibration compressor.
7	**Construction should be of thin vacuum insulation panel / high density polyurethane along with equivalent gasket of double seal silicon**
8	System should have Stainless steel interior and tough, powder coated exterior finish.
9	Freezer should have 4 or more Compartment with two or more adjustable height stainless steel shelves. Separate inner door for each compartment. **Added Para : Should be provided with appropriate SS racks for storage of FFP.**
10	Holdover time : full load of plasma bags at -36 deg C should take at least 1 hrs to rise above -20 deg C if power off and it should be supported by providing performance curves
11	Cooling down time: A full load of plasma bags at 25 deg C should not take more than 5 hrs for all the bags to reach below -5 deg C and it should be supported by providing performance curves
12	The door and front panel air filter should be there.
13	Heavy duty lockable castors and lockable outer doors.
14	Freezer must have interface data logging port or circular thermograph and it must also have on board diagnostic software.
15	Freezer must have interface data logging port and it must also have on board diagnostic software.
16	**Deleted.**
17	Audible and visible alarms for temperature, power failure, system failure, battery low etc. and it also have remote alarm port for connection to an auto dialer.
18	Freezer must use CFC-FREE , HCFC-FREE refrigerants , and refrigeration system must be energy efficient and hermetically sealed cascade refrigeration system.
19	External or internal voltage stabilizer should be provided so that Compressor should be capable to run any voltage between 190 – 270V. Manufacturing site for the freezer must have ISO 9001 standard quality test requirements and **IEC 60601-1** electrical safety.

20	Manufacturer should have ISO 13485 certification issued from : Any Certification Bodies registered with NABCB under Medical Devices Quality Management System OR Any notified body registered with CDSCO OR Any 4-digit CE notified body
21	Should have import/manufacturing license from Central licensing Authority or State licensing authority of CDSCO for Medical Devices and copy of valid license should be submitted for the quoted model. In case the supplier has not yet obtained import/manufacturing license from CDSCO for the quoted model, proof of application for CDSCO medical device license to be submitted in the bid document and valid CDSCO license to be produced before award of contract, if applicable.
22	The units shall be capable of being stored continuously in ambient temperature of 0 - 50C and relative humidity of 15-90%.
23	**Accessories**
23.1	Datalogger - 1 no OR Circular Thermograph 1000 nos Suitable voltage regulator/stabilizer meeting ISI specification - 1 no
24	Calibration certificate shall be provided at the time of installation in respect of all the parameters that require calibration.
	BOQ
1	System as specified

SPECIFICATIONS FOR AN INTENSIVE CARE VENTILATOR

1. Microprocessor control, time-cycled, volume & pressure-controlled with adaptive ventilation for use in intensive care, suitable for ventilating all categories of patients from Neonatal to adults.
2. Should have a dynamic Lung View for an adult-paed patient to visualize assessment for compliance, resistance, obstructive and spontaneous breathing indication
3. Ventilator should be supplied with inbuilt turbine or external medical grade compressor (of the same make).
4. High Flow Oxygen Therapy with at least 60 LPM direct adjustable Flow with target RAMP should be available as standard along with one set of cannula for Adult / Ped / Neo patients.
5. Inbuilt display should be 12.5 inches or above, either color full touch screen or touch with rotary knob operation.
6. Ventilator should have the capability to upgrade SPO2 and ETCO2 measurement in the future.
7. Quoted model should have the capability to upgrade oesophageal pressure monitoring/ Smart Care / NAVA / TPP (Transpulmonary Pressure) for an adult-paed patient
8. Should have the following modes of ventilation –
    a. Volume control – VC / PC in CMV
    b. Assist control – VC / PC
    c. CPAP with Pressure Support
    d. Nasal CPAP with Apnoea backup for the neonatal patient
    e. Non-Invasive IPPV with 200 bpm
    f. Volume Support in PSV
    g. Adaptive Support Ventilation /Adaptive Ventilation Mode or equivalent for adult - ped (To ensure faster weaning and less manual settings, weaning mode)
    h. SIMV (Volume Control / Pressure Control) with Pressure support
    i. BIPAP /BIVENT/BI-LEVEL or equivalent with the settings of ventilatory breaths

j. Target vent modes such as PRVC / Auto Flow / PAV/ APV for automatic adjustment of pressure

k. Apnoea backup ventilation mode with adjustable settings option.

l. Separate independent NIV Mode (On/Off option on invasive mode is not acceptable) with automatic leakage compensation at least >120 LPM.

12. Should have the following parameters –

a. Tidal Volume in Volume mode : 5 to 2000 ml

b. Inspiratory Pressure : 1 – 99 cmH2O

c. CPAP/PEEP /Intermittent PEEP : 0 – 50 cmH2O

d. Inspiratory Rate : 2 – 100 bpm

e. Inspiratory Time : 0.5 – 10 sec

f. Pressure support : 0 – 60 cmH2O above PEEP

g. Occlusion Pressure PO.1 : 0-100 mbar

h. FiO2 : 21 - 100%

i. Flow trigger range : 0 to 15 LPM

j. Pressure Trigger range : 0 to -15 cmH2O

k. Peak Inspiratory Flow should be at least 220 LPM or above

l. Should have facility for Manual Breath, Inspiratory Hold, and Expiratory Hold.

m. Should be able to measure Intrinsic PEEP with a display of volume trapped.

n. Should have a display of weaning parameters like RSBI, Expiratory Time Constant, WOBi, etc.

13. It should display breath-to-breath measured values for Tidal Volume, Minute Volume, Spontaneous Frequency, FiO2, Peak/Mean Pressures, PEEP, Plateau, Resistance, Compliance, etc.

14. It should have three-level alarm management with different audio-visual color-coded alarms.

15. Should have inbuilt battery back-up for at least 4 hours for Ventilator and air source in the event of power failure.
16. It should have a simultaneous display of a minimum 3 waveforms along with 2 loops
    The screen should display the following waveforms:
    a. Flow – time,
    b. Pressure – time,
    c. Volume – time
    d. ASV/AVM Minute ventilation Graph
    e. And following loops:
        i. Pressure–volume,
        ii. Flow–volume,
        iii. Flow–pressure
17. Ventilator should have inbuilt Fio2 Monitoring.
18. In case of emergency, the machine should have the facility of Low-Pressure Oxygen, so that ventilation can be provided by low-pressure devices such as an O2 concentrator or flow meters in the event of non-availability of the high-pressure gas line.
19. The flow sensor should be Hot Air Anemometer or Variable Orifice Differential Pressure type.
20. Should have auto reusable expiration cassette /valves for complete disinfection capability.
21. Should have an inspiration synchronized inbuilt volume compensated nebulizer
22. Should have facility for ventilation data transfer via USB port and RS232 port
    Scope of supply should include the following with each ventilator-
    a. Modular corrosion-free ventilator Cart/ Trolley with circuit holding arm from the same source.
    b. Breathing Circuit Disposable with HMEF for adult -ped – 10 pcs
    c. Oxygen connecting Hose and Air connecting Hose (if needed) – 1pc each
    d. Nebulizer inspiratory synchronized for adult -ped – 10 pcs

e. Heated servo-controlled humidifier with reusable adult & neonatal chamber and breathing circuit -2 pc

f. Test Lung and Instruction Manual.

Conditions for tenderer:

1. All accessories should be from the same Original Equipment Manufacturer for the main unit.
2. Instruments must be ISO certified and a copy should be enclosed. (The ISO Certificate must be issued by any organization accredited by the Bureau of Indian Standard or accredited by the international accrediting forum "IAF" (Certificate to be attached).
3. Should be USA FDA and European CE be approved by 4 digits notified body.
4. Other necessary certifications if any required will be provided by the bidder for the smooth functioning of the machine.
5. Installation process should be performed by O.E.M trained service engineers/ service representatives on OEM letterhead or Service Report within 15 days of supply, with the mandatory provision of providing preventive services visit of OEM trained Service Engineer/ Service Representative quarterly per year till the completion of warranty period (i.e., 20 visits for the first 05 years) & further quarterly visits (04 visits/year) year till the completion of CMC period.
6. The equipment should have a Brand name/ Model Number embossed/etched on the equipment.
7. All the technical specifications in the compliance statement must be supported by Original Literature from the firm/ O.E.M with highlighting Numbering & flagging of all technical certificates.
8. Offered Equipment should have a strong Government Installation base.
9. Offered Equipment should have a Regional Sales Service Centre of the Original Equipment Manufacturer in the region for a 95 % uptime guarantee.
10. For the offered main unit, the essential, optional required consumables'/accessories' shelf life should be declared on the Original Equipment Manufacturer's letterhead.
11. In case of technical snag/failure/breakdown the response time for the inspection should be within 24 hours and repair within 05 days otherwise provide a service machine/ alternate

arrangement to be made till the period of recovery of the breakdown of the unit, failing which attracts penal action as per the decision of institute/ hospital.

12. For offered equipment the Training of technical staff and users should be performed by Original Equipment Manufacturer trained Service Engineers at the proper designated place- at bidders' cost.
13. Company should quote their latest model and need to provide an affidavit for the same.
14. As a tendering process the Demonstration of the offered Equipment is Mandatory at hospital/institute premises or other designated places at the bidder's cost.
15. The bidder must comply with the General Financial Rules and their modifications if any issued by the Government of India- 2017.
16. Any bidder from a country that shares a land border with India will be eligible to bid in the tender only if the bidder is registered with the Competent Authority (i.e., Registration certificate issued by the Ministry of Commerce and Industry (Department for Promotion of Industry and Internal Trade- DPIIT after October 2020). If any such bidder is not registered with DPIIT they will be liable for technical disqualification.
17. Principal (OEM) must authorize only one agent to be quoted in the bid otherwise multiple quotes through different agents in the same bid will be canceled.
18. The Bidder and its OEM both have to submit a notarized affidavit on the Indian Non-Judicial Stamp Paper of Rs.100/- that the bidder has not quoted the price higher than the current financial year and last financial year supplied to any government Institute/ Organization/ reputed Private Organization. OEM also has to submit that the price quoted by the bidder in the bid is on its behalf and the lowest in the current and last financial year in the country. Therefore, if at any stage it has been found that the supplier and its OEM have quoted lower rates than those quoted in this bid; the Institute (the purchaser) would be given the benefit of lower rates by the Supplier and any excess payment if any, will become immediately payable to the Institute (the purchaser). If such an affidavit is not submitted, the bid will be outrightly rejected. (Part of technical bid).
19. Guarantee / Warranty Period: Separate offers of Comprehensive Maintenance Contract **(CMC on main equipment) and Annual Maintenance Contract (AMC on main equipment)** for further 5 years after expiry of 5 years of warranty (i.e., 6^{th}, 7^{th}, 8^{th}, 9^{th} and 10^{th} years) in rupees only (and on basis of percentage of price) should be included in a financial bid in the absence of which the offer is liable to be rejected. Payment for CMC/AMC shall be

made only after the expiry of the warranty of 5 years, in case the Institute (the purchaser) decides for availing of CMC/AMC services. Contract for CMC/AMC shall be decided on expiry of warranty but rates (not more than 5% inclusive of all taxes for 6th to 10th year) will be frozen at the price of an issued purchase order before the release of payment by the Institute (the purchaser). However, the Institute (the purchaser) may decide not to enter into any CMC/AMC contract without assigning any reason for the same, which shall be binding upon the bid.

SPECIFICATIONS OF HIGH-END MULTIPARA MODULAR MONITOR SYSTEM

SPECIFICATION
1. Multipara monitor having a screen size of at least 15" TFT colour display or above with full touch screen facility with a resolution of 1920 X 1080 dots. All the monitors should come with an integrated transport module to avoid data loss with an inbuilt 6-inch or more display on the module itself. It should have ECG, SPO2, NIBP. Dual Temp., Respiration & Dual IBP, so that there is no loss in data in case the patient needs to be shifted from one bed to another. A monitoring system should have HL7 connectivity for upgradation to directly connect PACS & HIS to access images and data on the monitor display itself.
2. Monitors will be installed at the bedside (Wall mount) as well as the central nursing station with the capability of storage of all patient data.
3. The monitors should have monitors to monitor overview facility and data transfer over the network.
4. Must be future upgradeable to have the same make Integrated Charting system & data integration hub to get data & information to and from various ICU equipment such as Syringe pumps, ventilators and to and from hospital information system, laboratory information etc. for integration of various information
5. Monitor must be capable of simultaneously monitoring the following parameters which should be present as standard in all monitors: ECG, NIBP, SpO2, respiration, dual temperature, HR and 2 IBP. *The following interchangeable parameter modules' price should be quoted separately:* a. Minimal invasive Cardiac output through interchangeable modules. b. EEG monitoring capability through interchangeable modules. c. Non-invasive Hemoglobin monitoring facility through interchangeable modules. d. Mainstream ETCO2 monitoring capability through interchangeable modules e. Plath Variability Index (PVI) monitoring capability. f. Cerebral Pulse-oximetry module (NIRS) g. Gas monitoring module h. BIS module

6. Monitor must be upgradable to mainstream ETCO2 with both inspired and expired values (Price to be quoted separately).
7. Monitor should be ready to monitor 2 Invasive blood pressure simultaneously.
8. Drug calculation lung function. hemodynamic data and Oxy CRG screen should be available as standard.
9. Monitor should have the facility to display at least 8 waveforms
10. Patient modes adult, pediatric & Neonate
11. Monitor should have the facility to monitor 12 leads ECG through 5/6 lead ECG cable along with 12 lead ECG ST segment mapping & analysis.
12. All 23 automatic arrhythmia detection & ST analysis should be available.
13. Monitor or central station should have a facility for full disclosure of ECG and 4 other parameters of the last 24 hours.
14. Monitor should have the facility of ST recall
15. Monitor should have the facility of inter-bed display up to 20 beds.
16. Heart rate range adult 30-200 bpm, child and neonate -30 to 250 beats/min.
17. PR source : auto/ SpO2/NIBP
18. Respiration range : 0-150 breaths /min
19. Temperature- measurement range :1 C-45 degree C, Unit: C or F, user selectable
20. SPO2: measurement technology: Masimo Rainbow SET Measurement method: 0-100% accuracy adults: 40-100% +/- 2-digit accuracy
21. Monitor should display the perfusion index (PI%) from SPO2 as an indication of pulse strength
22. NIBP Method: oscillometric, Display: systolic, Diastolic and mean, Modes: manual, auto, stat & Venous puncture mode. Auto intervals: 2,4,5,10,30,60,90,120,240, and 360 mins. Unit : mmHg or kPa, Range 0-300 mmHg, accuracy : +/- 3 mmHg
23. Alarms: equipment alarms: Audio (Alarm beep) Visual (Flashing Blue LED), patient alarms: audio (Alarm Beep), Red LED (High Priority) Yellow LED (Medium Priority)
24. Alarms suspend continuous RED LED with a display of alarm crossed bell.

25. Invasive blood pressure (IBP) – calculation = CPP, PPV, CVP-ET Auto zero balancing range +/- 200 mmHg auto Zero balancing accuracy: +/- 1mmHg	
26. ETCO2- main stream-CO2 measuring range – 0 to 100 mmHg	
27. CO2 value display update cycle every 4 sec or when the alarm is generated.	
28. Trends-Data storage: 24 Hrs up to 6 parameters can be user selectable for 3 separate graphical windows.	
29. Graphical trends:	
30. Tabular trend: 30 sec 1 min, 2 min, 4min, 8min, 15min, 30min, & 60min	
31. Alarm trend (Recall)	
32. Battery backup- minimum 1 hour in-built/ through online UPS	
33. Include a laser printer with a central station	
34. Web browsing facility to review each networked monitor data through hospital LAN via office PC on hospital LAN network and/ or through the dial-up facility from a remote location when connected to the central station. It should also be upgradable to have data access on android and IOS mobiles.	
35. Following accessories need to be supplied with each monitor	
1	5 lead ECG cable x 1
2	Adult SpO2 sensor- 04 no.
3	Pediatric SpO2 sensor- 02 no.
4	NIBP tubing- 01 no.; Adult NIBP Cuff- 02 nos. Pediatric NIBP Cuff – 01 no. (All reusable)
5	IBP Interface cables x 2 nos.; Disposable IBP transducteurs x 10 nos.
6	Skin temperature probe x 01
7	Rectal temperature probe x 01
8	Mainstream ETCO2 sensor with Adult Pediatric adapter – 01 no. with each module
9. All necessary initial accessories **kits** to run the parameters (basic & advanced) should be supplied with respective modules.	
CENTRAL STATION SPECIFICATIONS (To be quoted separately)	
1. System should have minimum 16 beds capability and be upgradeable to 48 beds	

2. Central station should have a 24" or more colour display
3. Must be supplied with a network printer & printing of review/trend data from the central station should be possible.
4. It should have the facility to view the last 168 hours of stored information such as vital signs, alarm status arrhythmia analysis trended parameters patient data etc. for any selected bed from the central station.6-7 days post-discharge data of the patient should also be reviewable.
5. Should have the facility to take NIBP measurements from central station.
6. Should have default alarm limits and customizable parameter settings.
7. Central station should have full bed review capability.
8. Should have two-way communication with bedside monitor alarm setting should be possible from the central station.
9. All monitors including the central station should have a similar user interface for easy usage among all clinicians.
10. Should have the capability for the HL7 interface. Should be upgradable to connect with LIS to have patient labs data directly on the central station
11. Should be supplied with an On-Line suitable UPS with minimum 30 minutes backup.
12. The system should have a Web Browsing facility and access to patient data on android & ios mobile phone

Conditions for tender:

1. All accessories should be from the same Original Equipment Manufacturer for the main unit.
2. Instruments must be ISO certified and a copy should be enclosed. (The ISO Certificate must be issued by any organization accredited by the Bureau of Indian Standards or accredited by the international accrediting forum "IAF" (Certificate to be attached).
3. Should be USA FDA and/ or European CE be approved by 4 digits notified body.

4. Other necessary certifications if any required will be provided by the bidder for the smooth functioning of the machine.
5. Installation process should be performed by O.E.M trained service engineers/ service representatives on OEM letterhead or Service Report within 15 days of supply, with the mandatory provision of providing preventive services visit of OEM trained Service Engineer/ Service Representative quarterly per year till the completion of warranty period (i.e., 20 visits for the first 05 years) & further quarterly visits (04 visits/year) year till the completion of CMC period.
6. The supplied equipment to be covered under a 5years comprehensive warranty and post-completion 5 years paid CAMC, in which all accidental damages/ breakage, leakage/ punctures, manufacturing defects and wear and tear of all sorts will be covered.
7. The equipment should have a Brand name/ Model Number embossed/etched on the equipment.
8. All the technical specifications in the compliance statement must be supported by Original Literature from the firm/ O.E.M with highlighting Numbering & flagging of all technical certificates.
9. Offered Equipment should have a strong Government Installation base.
10. Offered Equipment should have a Regional Sales Service Centre of the Original Equipment Manufacturer in the region for a 95 % uptime guarantee.
11. For the offered main unit, the essential, optional required consumables'/accessories' shelf life should be declared on the Original Equipment Manufacturer's letterhead.
12. In case of technical snag/failure/breakdown the response time for the inspection should be within 24 hours and repair within 05 days otherwise provide a service machine/ alternate arrangement to be made till the period of recovery of the breakdown of the unit, failing which attracts penal action as per the decision of institute/ hospital.
13. For offered equipment the Training of technical staff and users should be performed by Original Equipment Manufacturer trained Service Engineers at the proper designated place- at bidders' cost.
14. Company should quote their latest model and need to provide an affidavit for the same.
15. As a tendering process the Demonstration of the offered Equipment is Mandatory at hospital/institute premises or other designated places at the bidder's cost.

16. The bidder must comply with the General Financial Rules and their modifications if any issued by the Government of India- 2017.
17. Any bidder from a country that shares a land border with India will be eligible to bid in the tender only if the bidder is registered with the Competent Authority (i.e., Registration certificate issued by the Ministry of Commerce and Industry (Department for Promotion of Industry and Internal Trade- DPIIT after October 2020). If any such bidder is not registered with DPIIT they will be liable for technical disqualification.
18. Principal (OEM) must authorize only one agent to be quoted in the bid otherwise multiple quotes through different agents in the same bid will be canceled.
19. The Bidder and its OEM both have to submit a notarized affidavit on the Indian Non-Judicial Stamp Paper of Rs.100/- that the bidder has not quoted the price higher than the current financial year and last financial year supplied to any government Institute/ Organization/ reputed Private Organization. OEM also has to submit that the price quoted by the bidder in the bid is on its behalf and the lowest in the current and last financial year in the country. Therefore, if at any stage it has been found that the supplier and its OEM have quoted lower rates than those quoted in this bid; the Institute (the purchaser) would be given the benefit of lower rates by the Supplier and any excess payment if any, will become immediately payable to the Institute (the purchaser). If such an affidavit is not submitted. the bid will be outrightly rejected. (Part of technical bid).
20. Guarantee / Warranty Period: Separate offers of Comprehensive Maintenance Contract (CMC on main equipment) and Annual Maintenance Contract (AMC on main equipment) for further 5 years after expiry of 5 years of warranty (i.e., 6^{th}, 7^{th}, 8^{th}, 9^{th} and 10^{th} years) in rupees only (and on basis of percentage of price) should be included in a financial bid in the absence of which the offer is liable to be rejected. Payment for CMC/AMC shall be made only after the expiry of the warranty of 5 years, in case the Institute (the purchaser) decides for availing of CMC/AMC services. Contract for CMC/AMC shall be decided on expiry of warranty but rates (not more than 5% inclusive of all taxes for 6^{th} to 10^{th} year) will be frozen at the price of an issued purchase order before the release of payment by the Institute (the purchaser). However, the Institute (the purchaser) may decide not to enter into any CMC/AMC contract without assigning any reason for the same, which shall be binding upon the bid.

SPECIFICATIONS FOR BALANCE ELECTRONIC DIGITAL

Single pan Analytical Balance with the highest accuracy for weighing processes; readouts to have at least four decimal places. Equipped with a draft shield chamber to eliminate interfering ambient effects

Description: - Electronic analytical, top loading, balance to the following specification.

Specifications:

- Capacity – 200 gms.
- Weighing range –0.01 – 60 g
- Resolution – 0.0001 gm.
- Precision – ± 0.0001 gm.
- Electronic taring.
- Counting mode.
- Inbuilt auto-calibration from the keypad.
- Stainless steel pan, size 80 - 100 mm
- Large all-glass weighing chamber with three-way access.
- Levelling feet.
- Level indicator.
- Display: LCD display.
- Compact, sturdy and durable body.
- RS-232 interface.
- Electrical requirement – 220-240 V-50/60 Hz
- Calibration: External
- Readability: 0.1 mg
- Verification interval: 0.001 g
- Free five years warranty with CMC after completion of basic warrant
- Should be provided with 2 kV UPS. A stabilizer for uniform voltage is also required.

Conditions for tenderer:

1. All accessories should be from the same Original Equipment Manufacturer for the main unit.
2. Instruments must be ISO certified and a copy should be enclosed. (The ISO Certificate must be issued by any organization accredited by the Bureau of Indian Standard or

accredited by the international accrediting forum "IAF" (Certificate to be attached).

3. Should be USA FDA and/ or European CE be approved by 4 digits notified body.
4. Other necessary certifications if any required will be provided by the bidder for the smooth functioning of the machine.
5. Installation process should be performed by O.E.M trained service engineers/ service representatives on OEM letterhead or Service Report within 15 days of supply, with the mandatory provision of providing preventive services visit of OEM trained Service Engineer/ Service Representative quarterly per year till the completion of warranty period (i.e., 20 visits for the first 05 years) & further quarterly visits (04 visits/year) year till the completion of CMC period.
6. The equipment should have a Brand name/ Model Number embossed/etched on the equipment.
7. All the technical specifications in the compliance statement must be supported by Original Literature from the firm/ O.E.M with highlighting Numbering & flagging of all technical certificates.
8. Offered Equipment should have a strong Government Installation base.
9. Offered Equipment should have a Regional Sales Service Centre of the Original Equipment Manufacturer in the region for a 95 % uptime guarantee.
10. For the offered main unit, the essential, optional required consumables'/accessories' shelf life should be declared on the Original Equipment Manufacturer's letterhead.
11. In case of technical snag/failure/breakdown the response time for the inspection should be within 24 hours and repair within 05 days otherwise provide a service machine/ alternate arrangement to be made till the period of recovery of the breakdown of the unit, failing which attracts penal action as per the decision of institute/ hospital.
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Registration certificate issued by the Ministry of Commerce and Industry (Department for Promotion of Industry and Internal Trade- DPIIT after October 2020). If any such bidder is not registered with DPIIT they will be liable for technical disqualification.

17. Principal (OEM) must authorize only one agent to be quoted in the bid otherwise multiple quotes through different agents in the same bid will be canceled.
18. The Bidder and its OEM both have to submit a notarized affidavit on the Indian Non-Judicial Stamp Paper of Rs.100/- that the bidder has not quoted the price higher than the current financial year and last financial year supplied to any government Institute/ Organization/ reputed Private Organization. OEM also has to submit that the price quoted by the bidder in the bid is on its behalf and the lowest in the current and last financial year in the country. Therefore, if at any stage it has been found that the supplier and its OEM have quoted lower rates than those quoted in this bid; the Institute (the purchaser) would be given the benefit of lower rates by the Supplier and any excess payment if any, will become immediately payable to the Institute (the purchaser). If such an affidavit is not submitted, the bid will be outrightly rejected. (Part of technical bid).
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20. Should provide 5-year CMC. CMC cannot be more than 5% of the contract value.
21. System configured application-specific educational video tutorials shall be provided as standard with the system.
22. Details of service outlet in India to render services during 5 years warranty period.
23. The principals must give a certificate if the supplier/vendor is changed during the course of the guarantee/warranty period, the principals would be responsible for the

upkeep/maintenance of the quote/supplied equipment, besides honouring all the terms and conditions of CMC/AMC in letter and spirit.

SPECIFICATIONS FOR STRETCHER TROLLEY

1 Overall size: 2030 mm L x 570 mm Wx 820 mm H (±5%).

2 Mattress platform: 1710 mm Lx560 mm W (±5%).

3 Frame work of Trolley is consisting of vertical tube size diameter 31.75 mm x 1.2 mm (18G) thick, with reinforced at bottom with diameter 34.92 mm x 1.2mm (18G) thick tube for fitting castors. The Framework is mounted on 200 mm castors two with brakes and two without brakes.

4 All horizontal stays are made of tube diameter 25.4 mm x 1.2 mm (18 G).

5 MS flat size 25 mm x 5 mm is welded to the framework to support the stretcher.

6 Removable Stretcher Top made from MS tube flat.

7 Handle is made of MS tube size diameter 25.4 mm x 1.6 mm (16 G) epoxy coated and covered with PVC black color sleeve.

8 Three additional flat supports made from MS flat size 25 mm x 5 mm should be welded to support the aluminum sheet top from underneath width-wise.

9 Four stump legs made of 25.4 mm 1.6 mm (16 G) ERW tube shall be welded at the bottom of the removable stretcher frame and should be provided with PVC material having nylon reinforced.

10 Safe working load of 135 kg and patient load bearing capacity of 130 kg

11 M.S. tubular parts, linkages, and flats are to be In-house, pre-treated / shot blasted and Epoxy powder coated with a coating thickness of 50 to 100 microns.

12 All Process Parameters as per documented IMS Procedures for Quality Assurance (ISO 9001:2015, ISO 14001:2015, OHSAS 18001:2007 & ISO 13485:2003).

13 Safety belts.

14 Rexene covered PU Foam Mattress 50 mm (2") thick with a single section.

15 I.V. Rod with 2 Hooks.

16 All stainless steel wherever used should be 304 grades. S.S parts finished with Matt Polish.

17 All mild steel components should be thoroughly in-house pre- treated chemically to remove rust, grease, oil, etc. by 7 tank dip & drain processes, including separate degreasing, de-rusting phosphating each followed by water rinsing activating & passivating and hot air drying to give phosphate coating. The side inspection report is mandatory during the evaluation period.

18 The treated metal surface should then be coated in–house with epoxy-polyester powder with paint dry-film thickness of 60 microns (minimum) and oven baked at 180 deg. To 200 deg. Centigrade. All Stainless Steel used should be of 304 grades.

19 Finishing & workmanship in the medical furniture is of prime importance and must be of a high standard. All corners shall be rounded off so that there shall be no sharp corners and holes should be burr free.

20 All Process Parameters as per documented IMS Procedures for Quality Assurance ISO 9001:2015, ISO 14001:2015, OHSAS 18001:2007 & ISO 13485:2003, ANSI-BIFMA, European CE.

Conditions for tender:

1. All accessories should be from the same Original Equipment Manufacturer for the main unit.
2. Instruments must be ISO certified and a copy should be enclosed. (The ISO Certificate must be issued by any organization accredited by the Bureau of Indian Standard or accredited by the international accrediting forum "IAF" (Certificate to be attached).
3. Should be USA FDA and/ or European CE be approved by 4 digits notified body.
4. Other necessary certifications if any required will be provided by the bidder for the smooth functioning of the machine.
5. Installation process should be performed by O.E.M trained service engineers/ service representatives on OEM letterhead or Service Report within 15 days of supply, with the mandatory provision of providing preventive services visit of OEM trained Service Engineer/ Service Representative quarterly per year till the completion of warranty period (i.e., 20 visits for the first 05 years) & further quarterly visits (04 visits/year) year till the completion of CMC period.
6. The equipment should have a Brand name/ Model Number embossed/etched on the equipment.
7. All the technical specifications in the compliance statement must be supported by Original Literature from the firm/ O.E.M with highlighting Numbering & flagging of all technical certificates.
8. Offered Equipment should have a strong Government Installation base.

9. Offered Equipment should have a Regional Sales Service Centre of the Original Equipment Manufacturer in the region for a 95 % uptime guarantee.

10. For the offered main unit, the essential, optional required consumables'/accessories' shelf life should be declared on the Original Equipment Manufacturer's letterhead.

11. In case of technical snag/failure/breakdown the response time for the inspection should be within 24 hours and repair within 05 days otherwise provide a service machine/ alternate arrangement to be made till the period of recovery of the breakdown of the unit, failing which attracts penal action as per the decision of institute/ hospital.

12. For offered equipment the Training of technical staff and users should be performed by Original Equipment Manufacturer trained Service Engineers at the proper designated place- at bidders' cost.

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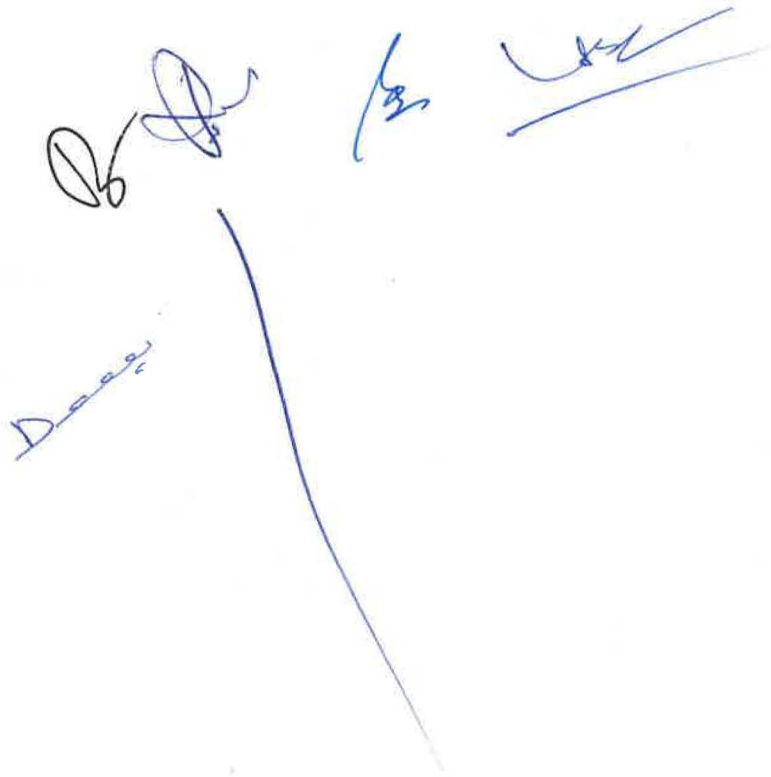
purchaser) would be given the benefit of lower rates by the Supplier and any excess payment if any, will become immediately payable to the Institute (the purchaser). If such an affidavit is not submitted, the bid will be outrightly rejected. (Part of technical bid).

19. Guarantee / Warranty Period: Separate offers of Comprehensive Maintenance Contract (CMC on main equipment) and Annual Maintenance Contract (AMC on main equipment) for further 5 years after expiry of 5 years of warranty (i.e., 6th, 7th, 8th, 9th and 10th years) in rupees only (and on basis of percentage of price) should be included in a financial bid in the absence of which the offer is liable to be rejected. Payment for CMC/AMC shall be made only after the expiry of the warranty of 5 years, in case the Institute (the purchaser) decides for availing of CMC/AMC services. Contract for CMC/AMC shall be decided on expiry of warranty but rates (not more than 5% inclusive of all taxes for 6th to 10th year) will be frozen at the price of an issued purchase order before the release of payment by the Institute (the purchaser). However, the Institute (the purchaser) may decide not to enter into any CMC/AMC contract without assigning any reason for the same, which shall be binding upon the bid.



SPECIFICATIONS FOR ICU BEDS 4 MOTOR 5 FUNCTION

4 Motor ICU bed Specification
Technical Specifications for ICU Beds
1. The bed should have four motors with the function of back raise, knee raise, Hi-lo, Trendelenburg, and reverse Trendelenburg, One button cardiac chair, One button CPR
2. Each operation is activated using electric actuators.
3. Manual CPR (quick release) & Electric CPR function should be provided.
4. The back raise function should have retraction and extension motion to reduce pressure and shearing on the patient.
5. Low bed height should be 320- 370 mm (without mattress) with an indicator to see from a distance that the bed is at the lowest height.
Measurement / Dimension
1. Back Raise: 0-70 degrees
2. Knee Raise: 0-25 degrees
3. Trendelenburg/Reverse Trendelenburg: 0 ± 12 degrees
4. Mattress base height: 320-760 mm – Low bed height to minimize injury in case of patient fall.
5. Overall size: 990-1000 mm (W) x 2,200-2300 mm (L) +/- 10 mm
6. Safe working load: 230 kg
Side rails
1. Split side rails with foot side open, foldaway movement with embedded control panel for patient & Caregiver. Side rails can bear a weight of 50 kg or more than that to provide better stability.
2. Side rails are to be swing away type and can be lowered so that side rails would not be in a way while caregiving or transferring a patient.
3. Side-rails are provided with stopper levers that can lock them when in use. The lock is constructed so that side rails cannot be unlocked when a load is applied in the downward direction of the side rail or the outward direction of the bed. - FOR PATIENT SAFETY
4. The bed comes equipped with a buffering mechanism to soften shocks and impacts that occur when side rails are lowered.

5. The outside of both side-rails at the head end comes with a recessed side-rail with a Bi-lateral integrated Control panel.
6. The inside of both side rails at the head end comes with a recessed control panel for the patient.
7. Both side-rails at the head end have a grip position and a shape so that patients can easily hold on to them when standing up after back raising.
8. There are angle indicators on the outside of both side rails at the head end to indicate the back raise angle.
9. There are angle indicators on the outside of both side rails at the foot end to indicate Trendelenburg angle.
10. To ensure the safety of the patient, the voltage for the Side-rail integrated panel and patient control panel should be 5 V.
11. The Side-rail integrated panel should have a switch to enable or disable the patient control panel to prevent operation errors.
12. The Side-rail integrated panel should be with a battery allowing the bed to be operated in case of power failure or lack of power supply.
Mattress base
1. The mattress base structure is divided into four areas, the back, hip, knee, and foot, and the main material is HDPE Plastic which should be removable for cleaning & housekeeping purposes.
2. There should be ventilation holes inserted into each surface of the HDPE base that is designed to allow proper ventilation to flow through the base.
3. The mattress base is provided with a mattress stopper to prevent the mattress from shifting out of place or sliding downward.
4. Good quality powder coating to be used for surface finishing on the main parts to prevent rusting of structural materials and maintain surface strength.
5. Each section base allows a urine bag to be hooked on.
6. Two accessory rails (one on each side) are provided on both side surfaces of the main frame.
7. Corner bumpers are attached to the four corners of the bed to prevent scratches to the bed, walls, and other objects.
8. Four IV pole attachment holes are provided, two on the head end and two on the foot end.

Casters
1. Total locking system, single-wheel casters with a wheel diameter of 125 mm should be used for casters. The Caster operating step allows the user to switch between simultaneously locking and unlocking all four casters (swivelling and rotation), and steering (one wheel on head end only).
2. The caster wheels should be made of polyurethane resin with excellent abrasion resistance, ageing resistance, and oil resistance.
3. To improve transferability, one of the four casters should be a steering caster.
Head & Footboard
1. The headboard and footboard are made of chemical-resistant resin material and come with grips at the top that enable easy handling during transfer.
2. The headboard and footboard can be attached and detached easily and are provided with stoppers to prevent them from becoming detached at inopportune times.
3. In regards to hygienic management, the boards are to be with less unevenness, a flat shape to let wiping be easier
Accessories and Warranty term:
1. Bed to be supplied with suitable size mattress. Having durable long-lasting, elastic, and non-skid mattress cover having antibacterial and anti-fungal properties (MRSA anti-bacterial cover)
2. Bed to be supplied with one IV poles
3. Should have CE conformity & ISO certifications, and other necessary certifications for ensuring quality.
4. Power input to be 220-240VAC, 50Hz as appropriate fitted with Indian plug.

Conditions for tenderer:

1. All accessories should be from the same Original Equipment Manufacturer for the main unit.
2. Instruments must be ISO certified and a copy should be enclosed. (The ISO Certificate must be issued by any organization accredited by the Bureau of Indian Standard or accredited by the international accrediting forum "IAF" (Certificate to be attached).

3. Electrical safety conforms to standards for electrical safety IEC-60601-1 General Requirements and IEC-60601-2-25 Safety of Electrocardiograms. (Or equivalent BIS Standard).
4. Other necessary certifications if any required will be provided by the bidder for the smooth functioning of the machine.
5. Installation process should be performed by O.E.M trained service engineers/ service representatives on OEM letterhead or Service Report within 15 days of supply, with the mandatory provision of providing preventive services visit of OEM trained Service Engineer/ Service Representative quarterly per year till the completion of warranty period (i.e., 20 visits for the first 05 years) & further quarterly visits (04 visits/year) year till the completion of CMC period.
6. The equipment should have a Brand name/ Model Number embossed/etched on the equipment.
7. All the technical specifications in the compliance statement must be supported by Original Literature from the firm/ O.E.M with highlighting Numbering & flagging of all technical certificates.
8. Offered Equipment should have a strong Government Installation base.
9. Offered Equipment should have a Regional Sales Service Centre of the Original Equipment Manufacturer in the region for a 95 % uptime guarantee.
10. For the offered main unit, the essential, optional required consumables'/accessories' shelf life should be declared on the Original Equipment Manufacturer's letterhead.
11. In case of technical snag/failure/breakdown the response time for the inspection should be within 24 hours and repair within 05 days otherwise provide a service machine/ alternate arrangement to be made till the period of recovery of the breakdown of the unit, failing which attracts penal action as per the decision of institute/ hospital.
12. For offered equipment the Training of technical staff and users should be performed by Original Equipment Manufacturer trained Service Engineers at the proper designated place- at bidders' cost.
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20. Should provide 5-year CMC. CMC cannot be more than 5% of the contract value.
21. System configured application-specific educational video tutorials shall be provided as standard with the system.
22. Details of service outlet in India to render services during 5 years warranty period.

23. The principals must give a certificate if the supplier/vendor is changed during the course of the guarantee/warranty period, the principals would be responsible for the upkeep/maintenance of the quote/supplied equipment, besides honouring all the terms and conditions of CMC/AMC in letter and spirit.

SPECIFICATIONS FOR LABORATORY REFRIGERATOR

1. Temperature range should be +2 to +8 C
2. Capacity should be 500 Litres
3. Inner cabinet should be made of either durable white epoxy painted or stainless steel
    a. SS304/SS316(optional)
4. Outer cabinet should be made of powder-coated sheets
5. Inner shelves should be made of epoxy durable coated steel rods, alternatively shelves made of SS304/SS316
6. Should be CFC free, eco-friendly refrigerant (R134a)
7. Should be CFC-free, eco-friendly Cyclopentain foaming PUF insulation
8. Should have no frost, fan-assisted cooling circulation system
9. Should be ultra-fast pull-down times, auto defrost with a self-evaporating drip tray
10. Should be front to rear hot air anti-condensation
11. Should be a digital temperature controller
12. Should be double grazed safety glass doors
13. Should be low noise and green technology, energy-saving technology
14. Should be full-length elimination
15. Should be fitted with caster wheels, front two with brakes
16. Should be self-closing hinge doors
17. Should be with locks as standard
18. Should have input 220-240V, 50Hz with power code and plug
19. Should have automatic voltage stabilizer with time delay restart
20. Should be port holes with 45 mm diameter access ports on either side of the chamber (optional at extra cost)
21. Power socket: 2 Number of 5 amp and 2 number of 15 amp power sockets with a switch inside the chambers
22. Should have circular chart temperature recorder.

Conditions for tenderer:

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15. The bidder must comply with the General Financial Rules and their modifications if any issued by the Government of India- 2017.
16. Any bidder from a country that shares a land border with India will be eligible to bid in the tender only if the bidder is registered with the Competent Authority (i.e., Registration certificate issued by the Ministry of Commerce and Industry (Department for Promotion of Industry and Internal Trade- DPIIT after October 2020). If any such bidder is not registered with DPIIT they will be liable for technical disqualification.
17. Principal (OEM) must authorize only one agent to be quoted in the bid otherwise multiple quotes through different agents in the same bid will be canceled.
18. The Bidder and its OEM both have to submit a notarized affidavit on the Indian Non-Judicial Stamp Paper of Rs.100/- that the bidder has not quoted the price higher than the current financial year and last financial year supplied to any government Institute/ Organization/ reputed Private Organization. OEM also has to submit that the price quoted by the bidder in the bid is on its behalf and the lowest in the current and last financial year in the country. Therefore, if at any stage it has been found that the supplier and its OEM have quoted lower rates than those quoted in this bid; the Institute (the purchaser) would be given the benefit of lower rates by the Supplier and any excess payment if any, will become immediately payable to the Institute (the purchaser). If such an affidavit is not submitted, the bid will be outrightly rejected. (Part of technical bid).
19. Guarantee / Warranty Period: Separate offers of Comprehensive Maintenance Contract (CMC on main equipment) and Annual Maintenance Contract (AMC on main equipment) for further 5 years after expiry of 5 years of warranty (i.e., 6^{th}, 7^{th}, 8^{th}, 9^{th} and 10^{th} years) in rupees only (and on basis of percentage of price) should be included in a financial bid in the absence of which the offer is liable to be rejected. Payment for CMC/AMC shall be made only after the expiry of the warranty of 5 years, in case the Institute (the purchaser) decides for availing of CMC/AMC services. Contract for CMC/AMC shall be decided on expiry of warranty but rates (not more than 5% inclusive of all taxes for 6^{th} to 10^{th} year) will be frozen at the price of an issued purchase order before the release of payment by the Institute (the purchaser). However, the Institute (the purchaser) may decide not to enter into any CMC/AMC contract without assigning any reason for the same, which shall be binding upon the bid.

20. Should provide 5-year CMC. CMC cannot be more than 5% of the contract value
21. System configured application-specific educational video tutorials shall be provided as standard with the system.
22. Details of service outlet in India to render services during 5 years warranty period.
23. The principals must give a certificate if the supplier/vendor is changed during the course of the guarantee/warranty period, the principals would be responsible for the upkeep/maintenance of the quote/supplied equipment, besides honouring all the terms and conditions of CMC/AMC in letter and spirit.

SPECIFICATIONS FOR BLOOD DONOR COUCH

Description of Function

Blood Donor Couch is a completely automatic enveloping, variable tilt chair specially designed to make blood withdrawals easier, safe and functional, and also for other diagnostic and therapeutic areas.

Operational Requirements

1. Provides a comfortable position for the donor.
2. Variable positioning for either arm with Comfortably wide armrests.
3. Armrests have swung out as well as up and down moving facility.
4. Reclining and upright body positions with a smooth shifting to any position.
5. Both sides have supporting brackets.
6. Drawers provided for the upkeep of equipment & consumables.
7. If a vasovagal attack occurs the Donor's head needs to be lowered immediately and his legs lifted above his heart level so that blood can flow back to the brain and other vital organs. This facility should be available.

Technical Specifications

1. Comfortable chair type with soft padding for cushioning and rain cover.
2. Seat, backrest and leg rest size designed for donor comfort. It should have a step-less electric remote-controlled height adjustment of approximately 58 – 60 cm.
3. Adjustable armrest for donor's comfort and phlebotomist friendly
4. Easily tilted to head low position, electrically operated
5. Comfortable working level for the operator. Lifting capacity - Approx 200 kg.
6. 4 Lockable castors for easy mobility.
7. Storage Drawers for storing consumables & Blood Collection Monitors.
8. UP/DOWN control.
9. OPTIONS: 1. A paper roll holder can be fixed on the upper part of the chair. 2. Melodious musical Headphones can be integrated for patient relaxation while blood donation is in progress.

System Configuration Accessories, spares and consumables

1. Donor Couch -01
2. Dust Cover -01
3. Power cable -01
4. Arm Rests(pair) -01 pair

5. Remote control -01

Environmental factors

1. The unit shall be capable of operating continuously at an ambient temperature of 10 - 400 C and relative humidity of 15-90%.
2. The unit shall be capable of being stored continuous and at an ambient temperature of 0 -500 C and relative humidity of 15-90%.
3. Shall meet IEC-60601-1-2:200(Or Equivalent BIS) General Requirements of Safety for Electromagnetic Compatibility.

Power Supply

1. Power input:220-240V/ 50 Hz AC Single phase or 380-400V AC 50 Hz Three phase fitted with appropriate Indian plugs and sockets.
2. A resettable overcurrent breaker shall be fitted for protection
3. Suitable Servo controlled Stabilizer/CVT

Conditions for tenderer:

1. All accessories should be from the same Original Equipment Manufacturer for the main unit.
2. Instruments must be ISO certified and a copy should be enclosed. (The ISO Certificate must be issued by any organization accredited by the Bureau of Indian Standards or accredited by the international accrediting forum "IAF" (Certificate to be attached).
3. Should be USA FDA and/ or European CE approved by 4 digits notified body.
4. Other necessary certifications, if any, will be provided by the bidder for the smooth functioning of the machine.
5. Installation process should be performed by O.E.M trained service engineers/ service representatives on OEM letterhead or Service Report within 15 days of supply, with the mandatory provision of providing preventive services visit of OEM trained Service Engineer/ Service Representative quarterly per year till the completion of warranty period (i.e., 20 visits for the first 05 years) & further quarterly visits (04 visits/year) year till the completion of CMC period.
6. The equipment should have a Brand name/ Model Number embossed/etched on the equipment.

7. All the technical specifications in the compliance statement must be supported by Original Literature from the firm/ O.E.M with highlighting Numbering & flagging of all technical certificates.
8. Offered Equipment should have a strong Government Installation base.
9. Offered Equipment should have a Regional Sales Service Centre of the Original Equipment Manufacturer in the region for a 95 % uptime guarantee.
10. For the offered main unit, the essential, optional required consumables'/accessories' shelf life should be declared on the Original Equipment Manufacturer's letterhead.
11. In case of technical snag/failure/breakdown the response time for the inspection should be within 24 hours and repair within 05 days otherwise provide a service machine/ alternate arrangement to be made till the period of recovery of the breakdown of the unit, failing which attracts penal action as per the decision of institute/ hospital.
12. For offered equipment the Training of technical staff and users should be performed by Original Equipment Manufacturer trained Service Engineers at the proper designated place- at bidders' cost.
13. Company should quote their latest model and need to provide an affidavit for the same.
14. As a tendering process the Demonstration of the offered Equipment is Mandatory at hospital/institute premises or other designated places at the bidder's cost.
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22. Details of service outlet in India to render services during 5 years warranty period.
23. The principals must give a certificate if the supplier/vendor is changed during the course of the guarantee/warranty period, the principals would be responsible for the upkeep/maintenance of the quote/supplied equipment, besides honouring all the terms and conditions of CMC/AMC in letter and spirit.

1	**Analytical Balance: up to 200g/1gm increment**
	Description of Function
	Electronic Balance is required for the precision weighing of Lab samples.
	Operational Requirements
	Microprocessor-based single-pan Analytical Balance with High accuracy & precision is required.
	Reading of the weight by digital display.
	Electronic top-loading balances with transparent case
	The balance should have functions of piece counting, per cent weighing, formulation, dynamic weighing with automatic and manual start and provision for data interface
	Technical Specifications
	Weigh accurately up to the 3rd decimal place of one gm.
	Weighing capacity 210 gm
	Settling time 2 second
	Suitable internal and external adjustment weights.
	LCD Display
	Power Supply
	Power input to be 220-240VAC, 50Hz fitted with Indian plug
	A resettable overcurrent breaker shall be fitted for protection
	Standards, Safety and Training
	Should be FDA or CE or BIS-approved product
2	**Urinometers**
	Urinometers calibrated, Digital (Mercury-based instruments to be replaced with other
	alternatives)
	Urinometers (set requires a small amount of urine for testing, Reads specific gravity from 1.000 to 1,040)
6	**Thermometer- Digital**
	Thermometers 0-250° C
7	**Boiling Water baths**

	Useful for dual purposes. It is a combination of serological and routine rectangular water baths with holes and concentric rings.
	Standard double-wall construction.
	Immersion heaters are provided for heating to attain a temperature range from 5° C above ambient to 110° C ± 1 °C.
	Should have lids and 8-12 Holes.
	Digital temp. Indicator-cum-Controller. The equipment is to work on 220v AC 50 Hz single phase.
	Should be CE or FDA or BIS-approved product
8	**Constant temperature water bath Tank Capacity: (Temperature range 5 to 80 degree Celsius)**
	Useful for dual purposes. It is a combination of serological and routine rectangular water baths with holes and concentric rings.
	Standard double-wall construction.
	The inner chamber is made out of highly polished stainless steel sheet and the exterior is made out of thick mild steel duly finished powder-coated paint.
	Immersion heaters are provided for heating to attain a temperature range from 5° C above ambient to 80° C ± 1°C.
	Digital temp. Indicator-cum-Controller. The equipment is to work on 220v AC 50 Hz single phase.
	Chamber size in mm & inches L x W x H 300 x 225 x 175 mm Approx Capacity approx 15 ltrs. Approx.
	Should be CE or FDA or BIS-approved product
11	**Fixed volume pipettes -- 1ml,0.5ml,0.2ml,0.1ml and 0.02ml (each)**
	Samplers (Fixed volume pipettes) with different volume ranges
	1ml,0.5ml,0.2ml,0.1ml and 0.02ml
17	**Variable and fixed volume auto pipettes**
	SINGLE CHANNEL PIPETTES
	• Spring Loaded Tip Cone for connecting tips very tightly
	• Adjustment opening for adjusting pipettes to a specific liquid and volume

	• Control Button with a very low operating force, colour indication for pipette volume
	• Tip ejector with a very low operating force, positioned for perfect ergonomics
	• Volume Display: 4 Digits with magnifier
	• To provide thermal, mechanical and chemical stability piston should manufacture with a combination of Fortron and PEEK material
	ACCURACY- + 1%
	REPRODUCIBILITY - 1% - 0.5%
	Volume range
	a) Micropipettes 0.1 to 2.5µl Variability 0.1µl increment
	b) Micropipettes 0.5 to 10µl Variability 0.1µl increment
	c) Micropipettes 2 to 20µl Variability 1µl increment
	d) Micropipettes 20 to 200µl Variability 1µl increment
	e) Micropipettes 100 to 1000µl Variability 1µl increment
	f) Micropipettes 0.1 to 10ml Variability 1ml increment

SPECIFICATIONS FOR SEMI-AUTO ANALYZER

Semi Autoanalyzer	
Sl. No	Technical Specification
1	The system should have an Endpoint, kinetic, fixed time and turbidimetric mode.
2	Light source: Tungsten/ halogen or higher grade with one additional bulb.
3	Should be a microprocessor controlled general purpose bi-chromatic Photo diode photometer system with at least 6 filters ranging from 340 to 630nm.
4	Temperature 37 self-monitoring built-in incubation systems for temperature-controlled absorbance reading.
5	Should have an inbuilt printer.
6	The Minimum aspiration volume should be 250 ul.
7	Should have a measurement range from 0.001 to 2.300Abs
8	Should provide quartz, glass and plastic cuvettes.
9	Should have facility for reading results on LCD.
10	Should have quality control – two control/test QC surveys of at least 30 points, Levy Jenny plot.
11	Should have a filter half bandwidth of 10nm or lesser.
12	Should have a test programme memory of 50 or more.
13	Aspiration should be based on Bellow/Peristaltic Pump/ Vacuum pump.
15	Should be supplied with online pure sine wave UPS of sufficient capacity for a minimum back of 30 minutes.
16	Should be provided with a calibration certificate issued by the manufacturer at the time of installation and a calibration certificate should be issued for the machine by the supplier during preventive maintenance visits in the warranty/AMC period if demanded by the end user.
17	The system should have a memory at least 500 patient tests
18	The system should have an online graphic display of reactions second to second.
19	The system should have a previous blank and standard memory facility.

20	Should be supplied with a total of 2 variable pipettes with measurements of 10-100µl and 100 - 1000µl.
21	Should provide 200 ml of reagents for ALT, AST, and ALP Estimation.
22	The system should be US FDA or European CE.

Conditions for tenderer:

1. All accessories should be from the same Original Equipment Manufacturer for the main unit.
2. Instruments must be ISO certified and a copy should be enclosed. (The ISO Certificate must be issued by any organization accredited by the Bureau of Indian Standards or accredited by the international accrediting forum "IAF" (Certificate to be attached).
3. The equipment should be USA FDA and/ or European CE approved by 4 digits notified body.
4. Other necessary certifications, if any, will be provided by the bidder for the smooth functioning of the machine.
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10. For the offered main unit, the essential, optional required consumables'/accessories' shelf life should be declared on the Original Equipment Manufacturer's letterhead.
11. In case of technical snag/failure/breakdown the response time for the inspection should be within 24 hours and repair within 05 days otherwise provide a service machine/

alternate arrangement to be made till the period of recovery of the breakdown of the unit, failing which attracts penal action as per the decision of institute/ hospital.

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SPECIFICATIONS FOR ELECTRONIC PIPETTES DIGITALLY ADJUSTABLE

Electronic pipettes digitally adjustable	
S.No.	Technical Specification
1	Routine pipetting; Optimal ergonomics, lightweight
2	It should be precision and reproducibility, which means no more delays due to complicated programming or inflexible processes, and maximum reproducible results.
3	It should be able to work on 220–240-volt, power supply
4	Fatigue-free work and consistent. full control over the pipetting processes
5	Multi-function rocker
6	Function control softkeys; Selection dial
7	It should have a Separate power socket; Practical charging contacts
8	Should have a standard display with simple menu navigation
9	Rechargeable battery
10	Ergonomic display angle
11	After tip ejection, the piston automatically returns to the zero position
12	Volume range: 0.5- 10 ul, 10-50 ul,10-100 ul, 100-1000ul.
13	All functions at a glance and easily selectable and Optimal readability in every position
14	Accuracy: +/- 1%
15	Should be supplied with 5000 tips, holder rack & pipette stand.
16	A calibration certificate should be provided with the supply
17	The product should be US FDA or European CE or BIS approved. For class I products, European CE should be read as EC Declaration of Conformity along with ISO 13485 certification.

SPECIFICATIONS FOR LABOUR COT

The Labour cot Should have the following essential specifications:

1. Overall size 2100 – 2400 mm L when extended, 900mm– 1100 mm W (with and without side rails up), 400 mm to 900 mm H (without mattress) ± 05%.
2. Bed should have three sections of the high-pressure laminated top. It should have a detachable laminated top for the middle section and leg section for ease of cleaning. The leg section should be telescoped under the backrest for the lithotomy position.
3. It should have a control device for making height and back adjustments. [Manual as well as remote control].
4. Frame should be made of mild steel which should be pre-treated and powder coated.
5. Bed shall have swing-down type side railings; railings shall be made from non-rusting polymer moulded material.
6. It should have three sectional mattresses and the seat section should have a large perineal cut.
7. Mattress should be made of high resilience high-quality P.U foam with a stain-resistant cover and zip.
8. Should have a pair of bearing down patient hand grips with PVC coversand with location adjustability for patient convenience.
9. All positions should be operated by electromechanical adjustment through a handset; battery backup with an inbuilt battery charger should be provided. The handset should have indications for power on and thebattery charge.
10. It should have polymer moulded easily detachable head and foot side panels. It should have four corner rubber buffers.
11. Bed should be mounted on 12 cm – 15 cm non-rusting castor wheels with a locking mechanism. Castor should be made from high-grade non-floor-staining synthetic material. The Wheel centre should have precision ball bearing to run smoothly.
12. Should have infusion rods which have adjustable heights, quick release and attaches to all corners of the bed.
13. Should have a pair of upholstery aluminium crutches mounted on SS tubes.
14. Should have a sliding waste collection bowl at the perineal part of the table.
15. It should be able to give Trendelenburg, reverse Trendelenburg and 60 - 70 degree sitting position both mechanically and electronically.
16. It should have adjustable foot supports for nursing staff.

a. All consumables required for installation and standardization of the system are to be given free of cost.
b. Shall meet IEC-60601-1-2:2001(Or Equivalent BIS) General Requirements of Safety for Electromagnetic Compatibility. Orshould comply with 89/366/EEC; EMC-directive?
c. The unit shall be capable of operating continuously at an ambienttemperature of 10-40 deg C and relative humidity of 15-90%.
d. The unit shall be capable of being stored continuously at an ambient temperature of 0-50deg C and relative humidity of 15-90%.
e. Power input to be 220-240VAC, 50Hz fitted with Indian plug.
b. UPS of suitable rating with voltage regulation and spikeprotection for 60 minutes back up. Should be FDA, CE, UL or BIS-approved product.
c. Manufacture should have ISO certification for qualitystandards.
d. Comprehensive training for lab staff and support services tillfamiliarity with the system.
e. Comprehensive warranty for 2 years and 5 years CMC afterwarranty including UPS.
f. Electrical safety conforms to standards for Electrical Safety IEC 60601-2-38 Particular safety requirements for Electrically operated hospital beds.
g. User/Technical/Maintenance manuals to be supplied in English.

SPECIFICATIONS FOR PAEDIATRIC ACLS MANNEQUIN

1. The manikin should be designed for AHA Pediatric Advance life support mega code station (PALS) as per the 2015 AHA guidelines/ recent one.
2. The model should be used for practising ACLS for a 6-year-old.
3. The model should be realistic and look like a real 6-year-old child.
4. Should have the following features: -

A. Airway Management

- Realistic life-size intubation trainer with a flexible tongue, arytenoid cartilage, epiglottis, vallecula, vocal cords, trachea, oesophagus, and simulated lungs
- Head can be tilted forward, backward, or rotated 90 degrees to either side
- The following skills can be practised:
  - Endotracheal Intubation
  - Nasotracheal Intubation
  - Digital Intubation
  - Oropharyngeal airway insertion and suctioning
  - Nasopharyngeal airway insertion and suctioning
  - Bag-Valve Mask Ventilation

B. Cardiac/Pulse

- Manually generated carotid pulse
- Manual chest compressions
- 3-4 led ECG. With optional patient monitor: 12 lead ECG display image
- Pacing and defibrillation (25-360j)

C. IV/IO Training

- Articulating IV arm with replaceable skin and infusible vein system allows peripheral intravenous therapy and site care
- Venipuncture is possible in the antecubital fossa and dorsum of the hand
- Accessible veins include median, basilic and cephalic
- Intraosseous infusion leg with tibial tuberosity and medial malleolus landmarks

- Aspiration can be realistically simulated
- Fluid can be infused

D. Sounds

- Heart sounds synchronized with ECG
- Auscultated lung sounds synchronized with breathing, 0 - 60 BPM
- Individual lung sound selection
- Normal or abnormal bowel sounds
- Vocal sounds: Computer-generated sounds, recorded vocal sounds and real-time voice input via headset
- User-generated vocal sounds

Touch Screen Control Unit

Should be a Handheld, intuitive touchscreen remote for an easy 'pick-up-and-play experience

- Mobile - teach anywhere
- Should have the option to Operate on the fly or utilize scenarios and Themes for consistent simulation training
- Should record Time stamped activities, vital signs, and instructor comments in the event log
- Should have the facility to view log files on the device for post-simulation reflection and debriefing
- Should have the option to upload self-authored scenarios and Themes or download pre-programmed scenarios directly from relevant sources.

Patient Monitor

- Touchscreen simulated patient monitor should provide concise clinical feedback for physiological parameters.
- The monitor's colour screen should be configurable and should provide multiple simulated parameters, each presenting multi-level alarms.
- Simulated parameters should include HR, ECG, SpO2, BP, RR, Temperature, and etCO2
- The System Must have a CE certificate by 4 digit notified body.

SPECIFICATIONS FOR ADULT ACLS MANNEQUIN

- The manikin should be a full-body adult manikin with anatomically correct landmarks and sternal notch to allow students to practice identification of all anatomical landmarks relevant to adult CPR.
- The training system should contain a hand-held wireless control device for real-time CPR performance feedback with ventilation and compression as per the latest American Heart Association (AHA) guidelines
- The training system should allow further software upgradation to improve feedback with quality.
- The training system should provide realistic and appropriate resistance during chest compression which allows students to experience the amount of pressure needed to perform proper chest compressions in a real-life situation.
- The manikin should simulate natural obstruction of the airway which allows students to learn the important technique of opening the airway according to the latest guidelines.
- The manikin should permit Head tilt/chin lift and jaw thrust that allows students to correctly practice airway manoeuvres necessary when resuscitating a real victim.
- Ventilation of the manikin must be possible by artificial breathing through the mouth to mouth; mouth to nose and by bag mask-to-mouth ventilation.
- The manikin should have disposable airways and easily removable face skin to avoid cross-contamination.
- The manikin must show a realistic chest rise during ventilation through the following procedures: mouth to mouth, mouth to nose and bag mask to mouth.
- The manikin should allow placement of supraglottic airway devices: oropharyngeal and nasopharyngeal airway insertion, laryngeal mask airway, Combitube and laryngeal tube.
- The model should have eyes for pupil assessment with normal, dilated and constricted.
- The model should have automatically generated carotid pulses which are synchronized with ECG and allow realistic pulse checks during training.
- The manikin should allow the user to incorporate live defibrillation/live AED or manual defibrillators during the learning experience.

- The model should have a 4 connector 3-lead feature to allow students to monitor ECG rhythms during training.
- The model must simulate the following cardiac rhythms in the manikin:
    - Normal Sinus Rhythm (NSR)
    - Ventricular fibrillation
    - Atrial tachycardia
    - supraventricular tachycardia
    - Atrial fibrillation
    - Sinus bradycardia
    - Sinus tachycardia
    - Ventricular tachycardia without a pulse (pulseless VT)
    - Asystole
    - PEA/EMD (pulseless electrical activity / electromechanical dissociation)
- The model should connect to the defibrillator and the simulator simultaneously. The simulator must be able to generate the chosen rhythm on the monitor of the defibrillator.
- The training model should provide live feedback of vital signs on a Monitor and detailed information about chest compression (depth & Recoil), compression rate, ventilation volume and hand positioning when performing CPR.
- The model should have an intravenous arm to practice venipuncture and intravenous injection administration.
- The system should allow the transfer of feedback data to PC for overhead viewing, printing and remote storage.
- The training system should have the ability to get connected to an optional simulated patient monitor to display various vital signs.
- The training system should allow users to log different procedures done by the learners during the simulation.
- The manikin should be modular and designed to allow various limbs to be attached to enhance the training system. It should be upgradable to integrate the optional trauma /rescue limbs.
- The manufacturer must provide internationally approved certifications, ISO & CE.

- The manufacturer must supply 1 full body manikin, 1 wireless touch screen control unit, 1 carry case & a simulated patient monitor.

Patient Monitor

- Touchscreen simulated patient monitor should provide concise clinical feedback for physiological parameters.
- The monitor's colour screen should be configurable and should provide multiple simulated parameters, each presenting multi-level alarms.
- Simulated parameters should include HR, ECG, SpO2, BP, RR, Temperature, and etCO2

SPECIFICATIONS FOR ADULT BLS MANNEQUIN

The manikin should fulfil the following standards Teaching Goals –

1. Should compile with AHA 2020 recommendations.
2. The manikin should provide feedback on all 5 key points of CPR that is depth, chest recoil & rate of the compressions; interruption time and ventilation volume.
3. The manikin should be able to provide an overall CPR performance score and performance de-briefing.
4. Should provide visual graphical user-friendly feedback.
5. Should allow the instructor to monitor multiple students' performance at one time through smartphones.

Anatomy -

1. Should be a half-body manikin with accurate anatomical landmarks resembling an adult.
2. Should have nose, eyes, ear canal, and articulating mandible to teach the students C-E technique for mask holding.
3. Should allow nose pinch technique for mouth-to-mouth resuscitation.
4. Should have naturally obstructed and the airway to be cleared only when head/tilt or jaw thrust is performed.
5. Should have collar bones to identify shoulder allowing to teach tap and shout.
6. Should have nipples, sternal notch, belly button and ribs to teach hand placement for chest compression.

Hygiene -

1. Should have removable face skin and one additional face skin to be provided.
2. Should have one-way non-rebreathing lungs and be provided with one extra airway

Technical –

1. Should be portable and lightweight
2. Should be able to connect to feedback devices wireless.
3. Must have CE Certificate
4. Should support remote BLS training

SPECIFICATIONS FOR CHILD BLS MANNEQUINS

The manikin should fulfil the following standards

Teaching Goals –

1) Should compile with AHA 2020 recommendations.
2) The manikin should provide feedback on all 5 key points of CPR that is depth, chest recoil & rate of the compressions; interruption time and ventilation volume.
3) The manikin should be able to provide an overall CPR performance score and performance de-briefing.
4) Should provide visual graphical user-friendly feedback.
5) Should allow the instructor to monitor multiple students' performance at one time through smartphones.

Anatomy -

1) Should be a half-body manikin with an accurate anatomical landmark resembling a Child.
2) Should have nose, eyes, ear canal, and articulating mandible to teach the students C-E technique for mask holding.
3) Should have naturally obstructed and the airway to be cleared only when head/tilt or jaw thrust is performed.
4) Should have collar bones to identify shoulder allowing to teach tap and shout.
5) Should have nipples, sternal notch, belly button and ribs to teach hand placement for chest compression.

Hygiene -

1) Should have removable face skin and one additional face skin to be provided.
2) Should have one-way non-rebreathing lungs and be provided with one extra airway

Technical –

1) Should be portable and lightweight
2) Should be able to connect to feedback devices wireless.
3) Must Have CE Certificate
4) Must support remote BLS training

SPECIFICATIONS FOR PEDIATRIC AIRWAY MANNEQUIN

The manikin should be an anatomically accurate reproduction of a paediatric torso designed for teaching the differences in paediatric and adult anatomy for airway management procedures. The manikin should have the following features -

- Anatomically accurate airway allowing sizing and insertion of various airway adjuncts: Oropharyngeal and nasopharyngeal airway insertion
- Endotracheal tube insertion and securing
- Bag valve mask ventilation
- Tracheal suctioning
- Manually generated carotid pulse
- Closed chest compressions should be possible
- Should have CE/ISO certificate

The manikin should be supplied with 1 Pediatric Torso Trainer, 1 Can of Manikin Lubricant, 1 Carry Case and Directions for Use

SPECIFICATIONS FOR ADULT AIRWAY MANNEQUIN

- It should be an Adult upper torso with Tongue and teeth
- It should be able to teach the following Intubation Procedures

  Tracheal (oral and nasal)

  Pharyngeal (oral and nasal)

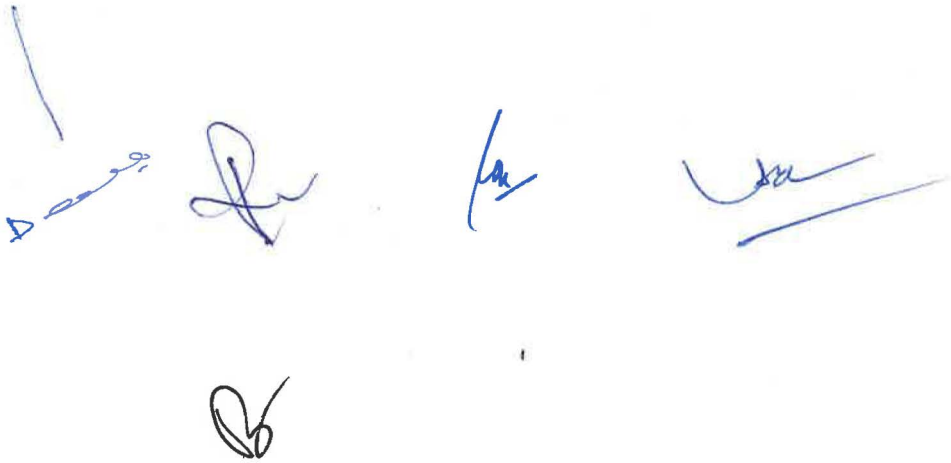
  Retrograde intubation

  Esophageal

  Fiber optic intubation (oral/nasal)

- Possibility of Sellick manoeuvre
- Right mainstem intubation
- Should be able to teach Suctioning techniques
- The Airway Management Trainer shall be an airway training manikin mounted on a practice board.
- It must be able to provide realistic and complete training in all intubation procedures tracheal-oral and nasal and the use of the Laryngeal Mask Airway and Combi tube.
- It should provide realistic anatomy, and nostrils. Lips, teeth, tongue, pharynx-oral and nasal, larynx with glottis opening, vallecula, arytenoids, vocal cords, subglottic cricoid ring, trachea, including carina lungs, esophagus and stomach.
- It must provide realistic head positioning. Neck flexion, extension and rotation, head lift and jaw movability.
- It should be able to provide realistic complications such as laryngospasm, and vomiting, and with excessive laryngoscope pressure on teeth will produce an audio signal.
- It should be able to provide realistic checking for proper tube placement with a visual inspection of lung expansion during ventilation, and auscultation of breathing sounds.
- It should be able to establish and maintain an open airway by head tilt, chin lift, neck lift and jaw thrust.
- It should permit realistic practice in lung ventilation, also with the use of Bag-Mask Ventilation.

- It should be supplied with a separate model for demonstration of airway anatomy.
- It must be able to provide the possibilities for practical training in clearing the obstructed airway by suctioning liquid foreign matter from, the oral cavity, oro- or nasopharynx, oro- or naso trachea, via endotracheal tube. Gastric drainage may also be practised.
- It should be supplied with a sturdy carrying case, directions for use, a sanitation kit, lubrication spray and a container of simulated stomach contents.
- Manufacturer must conform to the International Quality Certification i.e., ISO /CE must be provided.



SPECIFICATIONS FOR RAPID AUTOCLAVE

RAPID AUTOCLAVE

1	Sterilizer Type: Table Top Sterilizer
2	Capacity: minimum 20 L
3	Chamber Size: The sterilizer should have a Circular or Rectangular chamber.
4	Quality System Compliance: Sterilizers should comply with the quality systems as per the latest ISO 9001/ EN ISO 13485/ ISO 14001.
5	Quality Standards: Sterilizer should be US FDA/European CE certified with a four-digits notified body number.
6	Types of Cycles Process: Table Top Sterilizers should be equipped with B-process, N process/ flash cycle as per the latest EN 13060. Proof of declaration of conformity.
7	Chamber: Should be made of S.S.316 & should comply with the 97/23 to 2014/68 EU or Pressure Equipment Directive (PED) &EN 13445 norms. The chamber should have a working pressure of 2.2 bar & design pressure of up to 3.0 bar. The chamber should be equipped with an electrically heated jacket for preheating on standby mode
8	Door Design: Should have a radially opening door with at least one or two locking bolts for enhanced door safety. The doors should come with a silicon elastomeric rubber gasket to withstand temperatures up to 140°C & 20-30 psi.
9	Air Filter: Air filter should be provided for filtering the atmospheric air before entering the chamber. The filter separation efficiency should be higher than 99.998% for particle size less than 0.3µm. The air filter should be covered by warranty & CMC period
10	Cycle programs:
	• 134°C Wrapped.
	• 121°C Wrapped.
	• 134°C Flash/Rapid open instrument cycle.
	• 134°C Textile.
	• Test programs: Bowie & Dick, Leak Test.
11	Water Storage Tank: Sterilizer should have an inbuilt water reservoir with a storage capacity of up to 5 L. The water reservoirs should have easy access for cleaning & to avoid biofilm.

12	Steam Generator: Sterilizer should have an inbuilt steam generator. The steam generator design should be with integrated energy storing system for building up power for sterilization loads in a short time.
13	Control Panel: The control system should be a microprocessor-based PLC system specially designed for sterilization applications. The control system should have a CPU processor with battery backup, Digital input/output controls, analogue measuring inputs & COM ports for printer & PC connectivity.
14	Alarms: Automatic process checking & failure correction should be possible by the control system. The range of alarms should include Temperature & pressure sensor failure, phase timeout, doors not properly closed, power failure (less than 10 sec should be ignored), continuous self-checking of all the safety devices, low water level etc. All the alarms should be audio-visual.
15	Accessories: The sterilizer unit should include a rack with 3 or more levels & suitable size instrument trays should be part of the supply for every sterilizer. The Sterilizer should have a water circulation system so that no drain point & fixed water inlets are required
16	Electrical Requirement: 230V & 50 Hz electric supply.

Conditions for tenderer:

1. All accessories should be from the same Original Equipment Manufacturer for the main unit.
2. Instruments must be ISO certified and a copy should be enclosed. (The ISO Certificate must be issued by any organization accredited by the Bureau of Indian Standards or accredited by the international accrediting forum "IAF" (Certificate to be attached).
3. The equipment should be USA FDA and/ or European CE approved by 4 digits notified body.
4. Other necessary certifications, if any, will be provided by the bidder for the smooth functioning of the machine.
5. Installation process should be performed by O.E.M trained service engineers/ service representatives on OEM letterhead or Service Report within 15 days of supply, with the mandatory provision of providing preventive services visit of OEM trained Service Engineer/ Service Representative quarterly per year till the completion of warranty period (i.e., 20 visits for the first 05 years) & further quarterly visits (04 visits/year) year till the completion of CMC period.

6. The equipment should have a Brand name/ Model Number embossed/etched on the equipment.
7. All the technical specifications in the compliance statement must be supported by Original Literature from the firm/ O.E.M with highlighting Numbering & flagging of all technical certificates.
8. Offered Equipment should have a strong Government Installation base.
9. Offered Equipment should have a Regional Sales Service Centre of the Original Equipment Manufacturer in the region for a 95 % uptime guarantee.
10. For the offered main unit, the essential, optional required consumables'/accessories' shelf life should be declared on the Original Equipment Manufacturer's letterhead.
11. In case of technical snag/failure/breakdown the response time for the inspection should be within 24 hours and repair within 05 days otherwise provide a service machine/ alternate arrangement to be made till the period of recovery of the breakdown of the unit, failing which attracts penal action as per the decision of institute/ hospital.
12. For offered equipment the Training of technical staff and users should be performed by Original Equipment Manufacturer trained Service Engineers at the proper designated place- at bidders' cost.
13. Company should quote their latest model and need to provide an affidavit for the same.
14. As a tendering process the Demonstration of the offered Equipment is Mandatory at hospital/institute premises or other designated places at the bidder's cost.
15. The bidder must comply with the General Financial Rules and their modifications if any issued by the Government of India- 2017.
16. Any bidder from a country that shares a land border with India will be eligible to bid in the tender only if the bidder is registered with the Competent Authority (i.e., a Registration certificate issued by the Ministry of Commerce and Industry (Department for Promotion of Industry and Internal Trade- DPIIT after October 2020). If any such bidder is not registered with DPIIT they will be liable for technical disqualification.
17. Principal (OEM) must authorize only one agent to be quoted in the bid otherwise multiple quotes through different agents in the same bid will be cancelled.
18. The Bidder and it's OEM both have to submit a notarized affidavit on the Indian Non-Judicial Stamp Paper of Rs.100/- that the bidder has not quoted the price higher than the current financial year and last financial year supplied to any government Institute/ Organization/ reputed Private Organization. OEM also has to submit that the price quoted by the bidder in the bid is on its behalf and the lowest in the current and last

financial year in the country. Therefore, if at any stage it has been found that the supplier and its OEM have quoted lower rates than those quoted in this bid; the Institute (the purchaser) would be given the benefit of lower rates by the Supplier and any excess payment if any, will become immediately payable to the Institute (the purchaser). If such an affidavit is not submitted, the bid will be outrightly rejected. (Part of technical bid).

19. Guarantee / Warranty Period: Separate offers of Comprehensive Maintenance Contract (CMC on main equipment) and Annual Maintenance Contract (AMC on main equipment) for further 5 years after expiry of 5 years of warranty (i.e., 6^{th}, 7^{th}, 8^{th}, 9^{th} and 10^{th} years) in rupees only (and on basis of percentage of price) should be included in a financial bid in the absence of which the offer is liable to be rejected. Payment for CMC/AMC shall be made only after the expiry of the warranty of 5 years, in case the Institute (the purchaser) decides for availing of CMC/AMC services. Contract for CMC/AMC shall be decided on expiry of warranty but rates (not more than 5% inclusive of all taxes for 6^{th} to 10^{th} year) will be frozen at the price of an issued purchase order before the release of payment by the Institute (the purchaser). However, the Institute (the purchaser) may decide not to enter into any CMC/AMC contract without assigning any reason for the same, which shall be binding upon the bid.
20. Should provide 5-year CMC. CMC cannot be more than 5% of the contract value.
21. System configured application-specific educational video tutorials shall be provided as standard with the system.
22. Details of service outlet in India to render services during 5 years warranty period.
23. The principals must give a certificate if the supplier/vendor is changed during the course of the guarantee/warranty period, the principals would be responsible for the upkeep/maintenance of the quote/supplied equipment, besides honouring all the terms and conditions of CMC/AMC in letter and spirit.

SPECIFICATIONS FOR BLANKETS FOR CONVECTIVE AIR PATIENT WARMING SYSTEM

1. The blankets for the convective air patient warming system should becompatible with the basic Warming system.
2. The blankets should be lighter and resistant to puncture and fluids.
3. The blankets should be latex-free, made of 2-ply material – non-woven outer layer and Polyethylene inner layer. They should be precision dye cut to have an even airflow and smooth Surface.
4. The blankets should be disposable, 20 Pediatric blankets to beprovided with each warming System.

Specifications for convective air patient warming system

1. The convective air patient warming system should have a basicwarming unit and disposable blankets.
2. The convective air patient warming system should have fastwarming reaching 38°C within 30 sec.
3. The warming system should have temperature range settings of 30°to 34°C, 36° to 40°C and 42°Cto 46°C.
4. The warming system should have an automatic step-down facility.After 45 min temperature should come down from high mode to medium mode.
5. Should have Hepa filter of 0.2-0.3-micron filtration efficacy.
6. Multiple mounting options: Cart, bedrail, IV pole, floor & Stainlesstrolley is also available for easy transportation in ICU/Post OP.
7. Machine should have an auto power cut facility to control the settemperature and sensors to prevent patient burn.
8. Machine should have an hour meter to understand the total run time.
9. Demonstration of quoted equipment model is a must.
10. Availability of consumables and spares for the full duration ofwarranty and CMC.
11. Rates of consumables and accessories should be quoted separatelyin the financial bid.

Conditions for tenderer:

1. All accessories should be from the same Original Equipment Manufacturer for the main unit.
2. Instruments must be ISO certified and a copy should be enclosed. (The ISO Certificate must be issued by any organization accredited by the Bureau of Indian Standard or accredited by the international accrediting forum "IAF" (Certificate to be attached).
3. Should be USA FDA and/ or European CE be approved by 4 digits notified body.
4. Other necessary certifications, if any, will be provided by the bidder for the smooth functioning of the machine.
5. Installation process should be performed by O.E.M trained service engineers/ service representatives on OEM letterhead or Service Report within 15 days of supply, with the mandatory provision of providing preventive services visit of OEM trained Service Engineer/ Service Representative quarterly per year till the completion of warranty period (i.e., 20 visits for the first 05 years) & further quarterly visits (04 visits/year) year till the completion of CMC period.
6. The equipment should have a Brand name/ Model Number embossed/etched on the equipment.
7. All the technical specifications in the compliance statement must be supported by Original Literature from the firm/ O.E.M with highlighting Numbering & flagging of all technical certificates.
8. Offered Equipment should have a strong Government Installation base.
9. Offered Equipment should have a Regional Sales Service Centre of the Original Equipment Manufacturer in the region for a 95 % uptime guarantee.
10. For the offered main unit, the essential, optional required consumables'/accessories' shelf life should be declared on the Original Equipment Manufacturer's letterhead.
11. In case of technical snag/failure/breakdown the response time for the inspection should be within 24 hours and repair within 05 days otherwise provide a service machine/ alternate arrangement to be made till the period of recovery of the breakdown of the unit, failing which attracts penal action as per the decision of institute/ hospital.
12. For offered equipment the Training of technical staff and users should be performed by Original Equipment Manufacturer trained Service Engineers at the proper designated place- at bidders' cost.
13. Company should quote their latest model and need to provide an affidavit for the same.

14. As a tendering process the Demonstration of the offered Equipment is Mandatory at hospital/institute premises or other designated places at the bidder's cost.
15. The bidder must comply with the General Financial Rules and their modifications if any issued by the Government of India- 2017.
16. Any bidder from a country that shares a land border with India will be eligible to bid in the tender only if the bidder is registered with the Competent Authority (i.e., Registration certificate issued by the Ministry of Commerce and Industry (Department for Promotion of Industry and Internal Trade- DPIIT after October 2020). If any such bidder is not registered with DPIIT they will be liable for technical disqualification.
17. Principal (OEM) must authorize only one agent to be quoted in the bid otherwise multiple quotes through different agents in the same bid will be canceled.
18. The Bidder and its OEM both have to submit a notarized affidavit on the Indian Non-Judicial Stamp Paper of Rs.100/- that the bidder has not quoted the price higher than the current financial year and last financial year supplied to any government Institute/ Organization/ reputed Private Organization. OEM also has to submit that the price quoted by the bidder in the bid is on its behalf and the lowest in the current and last financial year in the country. Therefore, if at any stage it has been found that the supplier and its OEM have quoted lower rates than those quoted in this bid; the Institute (the purchaser) would be given the benefit of lower rates by the Supplier and any excess payment if any, will become immediately payable to the Institute (the purchaser). If such an affidavit is not submitted, the bid will be outrightly rejected. (Part of technical bid).
19. Guarantee / Warranty Period: Separate offers of Comprehensive Maintenance Contract (CMC on main equipment) and Annual Maintenance Contract (AMC on main equipment) for further 5 years after expiry of 5 years of warranty (i.e., 6^{th}, 7^{th}, 8^{th}, 9^{th} and 10^{th} years) in rupees only (and on basis of percentage of price) should be included in a financial bid in the absence of which the offer is liable to be rejected. Payment for CMC/AMC shall be made only after the expiry of the warranty of 5 years, in case the Institute (the purchaser) decides for availing of CMC/AMC services. Contract for CMC/AMC shall be decided on expiry of warranty but rates (not more than 5% inclusive of all taxes for 6^{th} to 10^{th} year) will be frozen at the price of an issued purchase order before the release of payment by the Institute (the purchaser). However, the Institute (the purchaser) may decide not to enter into any CMC/AMC contract without assigning any reason for the same, which shall be binding upon the bid.

20. Should provide 5-year CMC. CMC cannot be more than 5% of the contract value.
21. System configured application-specific educational video tutorials shall be provided as standard with the system.
22. Details of service outlet in India to render services during 5 years warranty period.
23. The principals must give a certificate if the supplier/vendor is changed during the course of the guarantee/warranty period, the principals would be responsible for the upkeep/maintenance of the quote/supplied equipment, besides honouring all the terms and conditions of CMC/AMC in letter and spirit.

SPECIFICATIONS FOR RADIANT WARMER WITH BASSINET

1. It should have capabilities to be used as a double-walled Incubator or as a radiant Warmer system and when needed remove the need of transferring the neonate
2. It should have Servo humidity with humidity up to 95%
3. Its Humidity to be given in vapour form and not in moisture form
4. It should have an integrated control and display system withtrending for control settings, thermal parameters etc.
5. It should have a control and display panel in a central location so that itcan be viewed from all 3 sides.
6. It should have an air velocity of <10 cm /sec measured 10 cm abovethe centre of the mattress.
7. It should have dual Thermistor Probes
8. It should have dual probes so that temperature can be measuredfrom 2 places of the infant.
9. Bassinet
    a) Should allow tilt for Trendelenburg as well as reverse Trendelenburg position
    b) It should have 360 degrees rotating and translating mattress to access the baby and reduce touches
    c) Mattress should be Pressure diffusing mattress to avoid Pressure stress and Skin problems
    d) Should be suitable on both sides of the vertical column to facilitate intubation
    e) Should have a continuous variable bed tilting mechanism for a bed tilt on either side
    f) Should have motorized variable height adjustment mechanism to vary the cradle/baby bed between from the ground, should be able to adjust the height of the bed from either side of the warmer
10. It should have a sound level <50dBa measured 10 cm above thecentre of the mattress
11. It should have internal continuous 12-degree tilting control
12. It should have 8 Tubing access ports
13. It should have adjustable audible alarms
14. It should use a Microfilter of 0.5 microns with 99.8%
15. It should have Patient temperature measurement accuracy of +- 0.3degree C between 30-40 Degrees C

16. It should have up and down facility of the system which can becontrolled from both sides
17. It should have a movable drawer from both sides for extra leg space
18. It should have an integrated In Bed Scale with a weight measuringrange of 300-8000 gm with weight trends and a TARE facility
19. It should have the facility of Servo Oxygen facility for oxygenenrichment
20. Heating unit of the radiant warmer should be suitable foraccommodating the X-Ray unit and should have a self-lock facility.
21. Alarms
    a) Audiovisual alarms with a display of text messages about thealarms
        i. Probe failure
        ii. Heater failure
        iii. High and low baby temperature (more than 0.5 deg Cdifference)
        iv. Power failure
        v. System failure
        vi. Silence/reset switch
22. In Incubator mode it should match Temperature variability andDistribution standard of IEC-601-2-19
23. All metal parts of the equipment should be corrosion-resistant and Epoxy/ Powder coated
24. All consumables required for installation and standardization of the system are to be given free of cost
25. Should be supplied with:
    a. Examination Light – 1 Nos
    b. IV Pole – 1 Nos
    c. Reusable Skin Probe – 10 Nos
    d. Disposable skin probe - 20 Nos
    e. In bed weighing scale – 1 No
26. The rates of consumable accessories should also be quoted separately
27. Items covered under warranty/CMC

a) The rates of consumables and accessories should also be quotedseparately in the financial bid.

30. Power supply

a) Power input to be 220-240VAC, 50Hz

b) Suitable Auto voltage corrector with a spike protector should be available.

31. The unit shall be capable of being stored continuously at an ambienttemperature of 0-50 deg C and relative humidity of 15-90%

32. The unit shall be capable of operating continuously at an ambient temperature of 20-40 deg C and relative humidity of 15-90%.

Conditions for tenderer:

1. All accessories should be from the same Original Equipment Manufacturer for the main unit.
2. Instruments must be ISO certified and a copy should be enclosed. (The ISO Certificate must be issued by any organization accredited by the Bureau of Indian Standard or accredited by the international accrediting forum "IAF" (Certificate to be attached).
3. Should be USA FDA and/ or European CE be approved by 4 digits notified body.
4. Other necessary certifications, if any, will be provided by the bidder for the smooth functioning of the machine.
5. Installation process should be performed by O.E.M trained service engineers/ service representatives on OEM letterhead or Service Report within 15 days of supply, with the mandatory provision of providing preventive services visit of OEM trained Service Engineer/ Service Representative quarterly per year till the completion of warranty period (i.e., 20 visits for the first 05 years) & further quarterly visits (04 visits/year) year till the completion of CMC period.
6. The equipment should have a Brand name/ Model Number embossed/etched on the equipment.
7. All the technical specifications in the compliance statement must be supported by Original Literature from the firm/ O.E.M with highlighting Numbering & flagging of all technical certificates.
8. Offered Equipment should have a strong Government Installation base.
9. Offered Equipment should have a Regional Sales Service Centre of the Original Equipment Manufacturer in the region for a 95 % uptime guarantee.
10. For the offered main unit, the essential, optional required consumables'/accessories' shelf life should be declared on the Original Equipment Manufacturer's letterhead.
11. In case of technical snag/failure/breakdown the response time for the inspection should be within 24 hours and repair within 05 days otherwise provide a service machine/ alternate arrangement to be made till the period of recovery of the breakdown of the unit, failing which attracts penal action as per the decision of institute/ hospital.

12. For offered equipment the Training of technical staff and users should be performed by Original Equipment Manufacturer trained Service Engineers at the proper designated place- at bidders' cost.
13. Company should quote their latest model and need to provide an affidavit for the same.
14. As a tendering process the Demonstration of the offered Equipment is Mandatory at hospital/institute premises or other designated places at the bidder's cost.
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16. Any bidder from a country that shares a land border with India will be eligible to bid in the tender only if the bidder is registered with the Competent Authority (i.e., Registration certificate issued by the Ministry of Commerce and Industry (Department for Promotion of Industry and Internal Trade- DPIIT after October 2020). If any such bidder is not registered with DPIIT they will be liable for technical disqualification.
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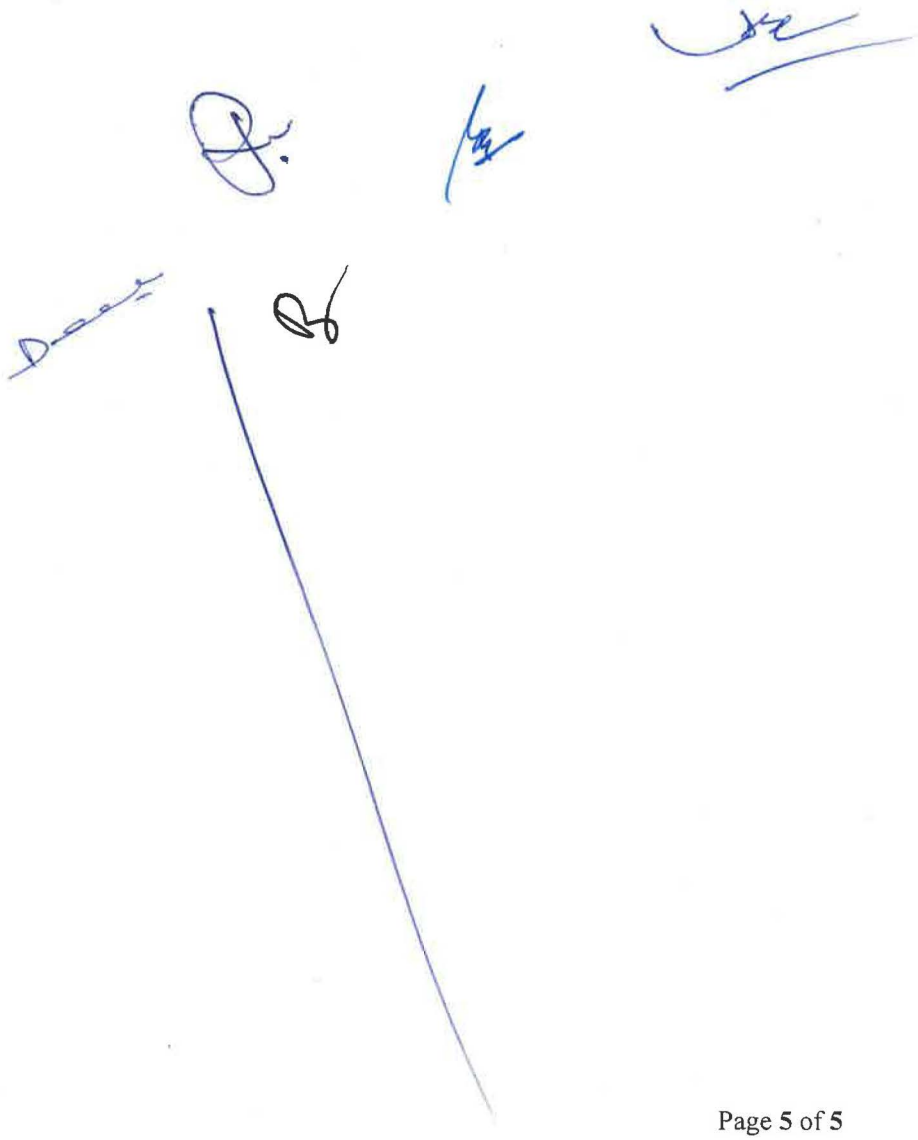
18. The Bidder and its OEM both have to submit a notarized affidavit on the Indian Non-Judicial Stamp Paper of Rs.100/- that the bidder has not quoted the price higher than the current financial year and last financial year supplied to any government Institute/ Organization/ reputed Private Organization. OEM also has to submit that the price quoted by the bidder in the bid is on its behalf and the lowest in the current and last financial year in the country. Therefore, if at any stage it has been found that the supplier and its OEM have quoted lower rates than those quoted in this bid; the Institute (the purchaser) would be given the benefit of lower rates by the Supplier and any excess payment if any, will become immediately payable to the Institute (the purchaser). If such an affidavit is not submitted, the bid will be outrightly rejected. (Part of technical bid).
19. Guarantee / Warranty Period: Separate offers of Comprehensive Maintenance Contract (CMC on main equipment) and Annual Maintenance Contract (AMC on main equipment) for further 5 years after expiry of 5 years of warranty (i.e., 6^{th}, 7^{th}, 8^{th}, 9^{th} and 10^{th} years) in rupees only (and on basis of percentage of price) should be included in a financial bid in the absence of which the offer is liable to be rejected. Payment for CMC/AMC shall be made only after the expiry of the warranty of 5 years, in case the Institute (the purchaser) decides for availing of CMC/AMC services. Contract for CMC/AMC shall be decided on expiry of warranty but rates (not more than 5%

inclusive of all taxes for 6th to 10th year) will be frozen at the price of an issued purchase order before the release of payment by the Institute (the purchaser). However, the Institute (the purchaser) may decide not to enter into any CMC/AMC contract without assigning any reason for the same, which shall be binding upon the bid.

20. Should provide 5-year CMC. CMC cannot be more than 5% of the contract value.
21. System configured application-specific educational video tutorials shall be provided as standard with the system.
22. Details of service outlet in India to render services during 5 years warranty period.
23. The principals must give a certificate if the supplier/vendor is changed during the course of the guarantee/warranty period, the principals would be responsible for the upkeep/maintenance of the quote/supplied equipment, besides honouring all the terms and conditions of CMC/AMC in letter and spirit.



SPECIFICATIONS FOR SUTURING MANIKIN

Should comprise the following:

(a) Lifelike synthetic surgical pads for the practice of surgical suturing, cutting, and ablation techniques with the following features:

1. Synthetic tissue pads should be capable of exhibiting realistic puncture resistance, suture-holding electrocautery, RF ablation devices, harmonic blades, laser scalpel ultrasound equipment and plasma knife performance for real-life training in surgical techniques.
2. Should have been validated for tensile modulus, abrasion resistance, penetration force, coefficient of friction, thermal conductivity, dielectric constant, etc. under the same physical conditions as the live tissue it is designed to simulate.
3. Synthetic tissue should respond to stimulus much like real living tissue.
4. Following pads should be supplied
    a) Basic suture pad suitable for Injection, Implantation and Cutdown training skills practice

    Should have Adult Skin and Subcutaneous Fat layers

    Should have an Overall Thickness of 6-7mm

    i) Large Pad 20cm x 20cm- 05 nos

    ii) Small Pad 10cm x 10cm- 05 nos

    b) Abdominal Suture Pad suitable for Injection, Implantation, Cutdown, Stoma repair, Wound drain, Stomach Tube Placement skills practice

    Should be real life with Layers of Adult Skin, Subcutaneous Fat, Bulk Fat, Skeletal Muscle, Rectus Fascia, Scarpa's Fascia

    Should have an overall thickness of 20-25mm

    i) Large Pad 20cm x 20cm- 05 nos.

    ii) Small Pad 10cm x 10cm- 05 nos.

    c) Muscular Suture Pad suitable for Injection and Implantation skills practice

    Should be real life with Layers of Adult Skin, Subcutaneous Fat and Skeletal Muscle

    Should have an overall thickness of 20-25mm

    i. Large Pad 20cm x 20cm-05 Nos

    ii. Small Pad 10cm x 10cm-05 nos

(b) Suture Evaluation Simulator

1. Suture Evaluation simulator for Teaching and training in suturing techniques and its quantitative evaluation.
2. Should have Three selectable training modes for different training purposes viz

a) Evaluation Mode
b) Learning Mode
c) Examination mode

3. Should be suitable for training in simple interrupted suture and instrument typing
4. Should have inbuilt sensors to measure force and tension to the skin and Should be equipped with an inbuilt camera for Image Evaluation
5. Should be supplied with a PC/Laptop with specialized software to store and evaluate the suture and image data and provide a comprehensive quantitative evaluation of suturing techniques of the student.
6. The control system should have pre-recorded movies/examples of suturing techniques
7. It should evaluate suture skills on six parameters and help identify areas of improvement
   a) Time taken b) Force on the tissue c) Suture tension
   d) Spacing of sutures e) width of stitches f) wound dehiscence
8. Should have suture skin made of up life like special silicon providing True-to-life needle tip resistance.
9. Should be supplied complete with skin suturing unit with base -1 no, Laptop with evaluation software- 1 no, Simulated skin – 40 nos., Customized Storage case- 1 no

SPECIFICATIONS FOR GLUCOMETER

GLUCOMETER

1	**Technical Specification**
1.1	The measuring range should be 20 to 600 mg/Dl
1.2	Arterial, Venous and capillary whole blood specimen capability
1.3	The sampling methodology should be electrochemical
1.4	The sampling volume should be less than 10 microlitres
1.5	Should have the LCD display
1.6	Should have an automatic shut-off.
1.7	Should be supplied along with QC and calibration kits.
1.8	Should have memory for at least 10 patient results.
2	**Standards, Safety and Training**
2.1	The manufacturer should have ISO certification
2.2	The product should be European CE/ US FDA/BIS approved
2.3	Should be supplied with 500 disposable strips
2.4	The unit Price of the strip should be quoted separately and it will be valid for 2 years.

SPECIFICATIONS FOR SPINE BOARD

SPINE BOARD

1	Should be in plastic material of high strength and waterproof.
2	It should have 4 rules for the quick and total fixing of the head Immobilizer and two cavities when the board lays on the floor, and when the base is blocked in the traditional usage or accommodation in the ambulance. way, that allows avoiding damage to rip-off straps during the movement.
3	It should be supplied with 3 belts with rapid unhooking buckle of good quality.
4	Should have maximum radio transparency to examine without compromising on patient's condition.
5	Length: 180 to 185 cms approx.
6	Width: 40-50 cm approx.
7	Weight: < 6 kg approx.
8	Load capacity: 145 kg (Min.)
9	The manufacturer should be ISO 13485:2016

SPECIFICATIONS FOR SUCTION MACHINE

	SUCTION MACHINE
1	Rating of Motor – continuous.
2	Suction Bottle Capacity - 2 x 2000 ml minimum Polycarbonate/ Poly Sulfonate bottle (with safety valve)
3	Gauge - 0 to 760 mm Hg
4	Vacuum Maximum - 660 mm Hg.
5	Pump - Oil lubricates the rotary pump
6	Suction Tubings - ID 7 mm, 5m long and non-collapsible.
7	Should have airtight lids interconnected with both jars.
8	Should have a noiseless Operation
9	Should provide a filter to absorb moisture and water particles entering the rotor
10	Should have a safety valve to prevent the entry of fluids into the machine in case the suction jar fills up.
11	Should be a well-designed, cabinet made of Stainless Steel 304 Grade.
12	Should have the facility to adjust suction pressure.
13	Should bear ISI / CE mark
14	Should operate from 200 to 240Vac, 50 Hz input suppl

SPECIFICATIONS FOR CRASH CART

1. Overall Size: 1030 mm L x 595 mm W.
2. Platform Dimension (Top Polymer Molded Panel): 560 mm L X 370 mm W.
3. Height (Floor to Top Polymer Molded Panel): 950 mm.
4. Maximum height (Floor to eye level detachable fully S.S top shelf): 1610 mm.
5. Four Drawers with centralized locking.
6. Upper Drawer ABS tray: 560 mm L X 340 mm W X 65 mm H.
7. Middle Drawer ABS tray 2 nos: 560 mm L X 340 mm W X 145 mm H.
8. Cardiac Massage Board: 710 mm X 390 mm X 6 mm thick.
9. Lower Drawer ABS tray: 550 mm x 330 mm x 230 mm.
10. Poly Carbonate Partition plates for the top and second drawer.
11. Integrated with Chart / File holder, 2 nos of Catheter Holder, 1 no of Trash bin.
12. Crash cart mounted on twin wheel 125 mm dia non-rusting castor two with brakes and two without. Castor is made from high-grade non-floor-staining synthetic materials with integrated thread guards. The wheel centre has precision ball bearing to run smoothly.
13. Base structure provided with rubber buffer, one on either side.
14. Framework is made from a tube size: of 25.4 mm x 1.2 mm (18 G).
15. Pull out cardiac massage board made of MDF of minimum size 710 mm x 390 mm x 6 mm laminated on top and bottom of a laminate of 1 mm and 0.6 mm respectively. MDF shall have water-resistance properties and it should be made from eco-friendly material.
16. Safe Working Load & Patient bearing capacity - 50 kg.
17. Oxygen cylinder stand epoxy powder coated, on one side.
18. All stainless steel wherever used should be 304 grades. S.S parts finished with Matt Polish.
19. M.S. tubular parts, linkages, and flats aluminium base are to be In-house, pre-treated/ shot blasted and Epoxy powder coated with a coating thickness of 50 to 100 microns.
20. All Process Parameters to be as per documented IMS Procedures for Quality Assurance (ISO 9001:2015, ISO 14001:2015, OHSAS 18001:2007 & ISO 13485:2003 Quality Management System Company should be European CE Certified. Dealers participating should enclose a certificate from their Parent manufacturer company.
21. Cardiac Massage Board: 710 mm X 390 mm X 6 mm thick.
22. Defib tray holder platform of 300 mm X 200 mm.

23. S.S detachable top shelves one without lid and one with 5 polycarbonate partitions and cover lid at eye level.
24. Poly Carbonate Partition plates.
25. Scissor Holder
26. I.V Rod S.S with two hooks.
27. The sizes may vary by ± 5%.

SPECIFICATIONS OF PORTABLE COLOUR DOPPLER SYSTEM WITH ECHO PROBE

1. The equipment should be capable of operating in B Mode, M Mode, Color M Mode, Color Doppler, Color Power Doppler, PW modes, one-touch 2D image optimization,
    a) The system should have an integrated trolley with height adjustable.
2. Triplex imaging should be standard on the system.
3. System should be offered with a 2D frame rate of 700 frames/sec or better.
4. No. of effective processing channels should be 5,00,000 or more.
5. The system must display at a maximum depth of 30 cm and shall process a dynamic range that is at least 150db.
6. System must be offered with the following application: Cardiac, Vascular, Small Parts, MSK, abdomen, Continuous wave Doppler imaging.
7. It must support transducers with linear, transesophageal echocardiography (TEE), Cardiac and curved array probes.
8. The system shall have a broadband architecture with an operating frequency of at least 1 -15 MHz
9. The system shall have the ability to enhance tissue margins and improve contrast resolution by reducing artefacts. Image processing technology to reduce clutter and speckle artefacts.
10. System must be offered with enhanced tissue harmonic imaging in standard configuration.
11. System must be offered with a frequency compounding facility or equivalent technology.
12. Equipment should offer auto measurement, 2D, Simpson tool to calculate LV (left ventricle) area and volume, 2D, area-length tool used to calculate LA (left atrium) area and volume, Stress echocardiography.
13. System should have zoom capability.
14. The system shall provide the user with a minimum of 8 generic digital callipers.
15. The system must have dedicated calculation packages for all applications.
16. System should have Cardiac Quantification Advanced,3D Quantification, Cardiac 2D Quantification (a2DQ), Automated Cardiac Motion Quantification, Strain

Quantification, Intima-Media Thickness (IMT) measurements, and Microvascular Imaging.

17. The system should offer Laptop style alphanumeric QWERTY keyboard.
18. The boot uptime of the machine should be less than 45 seconds.
19. The system should have an LCD screen size of 15" inches or better.
20. Equipment should have the facility of 3 lead ECG inputs.
21. System should have a multiport adapter that allows simultaneous connection of up to three transducers.
22. The system shall have the ability to function by AC power supply or battery power with the same degree of functionality, a fully charged new battery yields approximate 45-minute battery life under continuous use without AC.
23. The system shall support the DICOM function with the ability for storage, print, and work list, and also be ready to connect PACS.
24. The system shall have a Digital Video Interface (DVI), S-Video, VGA, USB, and audio output with provision for a 500 GB HDD.

S. No.	Transducer for Adult and Paediatric	Functions	Number
1	2-5 MHz (±1 MHz) multi-frequency, broadband curved array transducer with biopsy guide	Abdomen, Gynaecology, Lung, Nerve, Musculoskeletal, Early Obstetrics, Obstetrics, Spine	01
2	6-13 MHz (±2 MHz) multi-frequency, broadband linear array transducer with biopsy guide	vascular, nerve imaging	01
3	1-5 MHz (±1 MHz) multi-frequency, broadband phased array transducer	Abdomen, Cardiac, Focused Cardiac, Lung, Obstetrics, Orbital, Transcranial Doppler (TCD)	01

Conditions for tender:

1. All accessories should be from the same Original Equipment Manufacturer for the main unit.
2. Instruments must be ISO certified and a copy should be enclosed. (The ISO Certificate must be issued by any organization accredited by the Bureau of Indian Standards or accredited by the international accrediting forum "IAF" (Certificate to be attached).
3. Should be USA FDA and European CE be approved by 4 digits notified body.
4. Other necessary certifications if any required will be provided by the bidder for the smooth functioning of the machine.
5. Installation process should be performed by O.E.M trained service engineers/ service representatives on OEM letterhead or Service Report within 15 days of supply, with the mandatory provision of providing preventive services visit of OEM trained Service Engineer/ Service Representative quarterly per year till the completion of warranty period (i.e., 20 visits for the first 05 years) & further quarterly visits (04 visits/year) year till the completion of CMC period.
6. The supplied equipment to be covered under a 5years comprehensive warranty and post-completion 5 years paid CAMC, in which all accidental damages/ breakage, leakage/ punctures, manufacturing defects and wear and tear of all sorts will be covered.
7. The equipment should have a Brand name/ Model Number embossed/etched on the equipment.
8. All the technical specifications in the compliance statement must be supported by Original Literature from the firm/ O.E.M with highlighting Numbering & flagging of all technical certificates.
9. Offered Equipment should have a strong Government Installation base.
10. Offered Equipment should have a Regional Sales Service Centre of the Original Equipment Manufacturer in the region for a 95 % uptime guarantee.
11. For the offered main unit, the essential, optional required consumables'/accessories' shelf life should be declared on the Original Equipment Manufacturer's letterhead.
12. In case of technical snag/failure/breakdown the response time for the inspection should be within 24 hours and repair within 05 days otherwise provide a service machine/ alternate arrangement to be made till the period of recovery of the breakdown of the unit, failing which attracts penal action as per the decision of institute/ hospital.

13. For offered equipment the Training of technical staff and users should be performed by Original Equipment Manufacturer trained Service Engineers at the proper designated place- at bidders' cost.
14. Company should quote their latest model and need to provide an affidavit for the same.
15. As a tendering process the Demonstration of the offered Equipment is Mandatory at hospital/institute premises or other designated places at the bidder's cost.
16. The bidder must comply with the General Financial Rules and their modifications if any issued by the Government of India- 2017.
17. Any bidder from a country that shares a land border with India will be eligible to bid in the tender only if the bidder is registered with the Competent Authority (i.e., Registration certificate issued by the Ministry of Commerce and Industry (Department for Promotion of Industry and Internal Trade- DPIIT after October 2020). If any such bidder is not registered with DPIIT they will be liable for technical disqualification.
18. Principal (OEM) must authorize only one agent to be quoted in the bid otherwise multiple quotes through different agents in the same bid will be canceled.
19. The Bidder and its OEM both have to submit a notarized affidavit on the Indian Non-Judicial Stamp Paper of Rs.100/- that the bidder has not quoted the price higher than the current financial year and last financial year supplied to any government Institute/ Organization/ reputed Private Organization. OEM also has to submit that the price quoted by the bidder in the bid is on its behalf and the lowest in the current and last financial year in the country. Therefore, if at any stage it has been found that the supplier and its OEM have quoted lower rates than those quoted in this bid; the Institute (the purchaser) would be given the benefit of lower rates by the Supplier and any excess payment if any, will become immediately payable to the Institute (the purchaser). If such an affidavit is not submitted, the bid will be outrightly rejected. (Part of technical bid).
20. Guarantee / Warranty Period: Separate offers of Comprehensive Maintenance Contract (CMC on main equipment) and Annual Maintenance Contract (AMC on main equipment) for a further 5 years after the expiry of 5 years of warranty (i.e., 6^{th}, 7^{th}, 8^{th}, 9^{th} and 10^{th} years) in rupees only (and on basis of percentage of price) should be included in a financial bid in the absence of which the offer is liable to be rejected. Payment for CMC/AMC shall be made only after the expiry of the warranty of 5 years, in case the Institute (the purchaser) decides for availing of CMC/AMC services. Contract for CMC/AMC shall be decided on the expiry of warranty but rates (not more

than 5% inclusive of all taxes for the 6th to 10th year) will be frozen at the price of an issued purchase order before the release of payment by the Institute (the purchaser). However, the Institute (the purchaser) may decide not to enter into any CMC/AMC contract without assigning any reason for the same, which shall be binding upon the bid.

SPECIFICATIONS FOR PORTABLE X-ray MACHINE:

General specifications:

1. State of Art High-frequency microprocessor controlled Portable X-Ray system with integrated Computed Radiography system having following features:

a. Compact, lightweight, easily transportable mobile High-Frequency X-Ray unit for bedside x-Ray rays, trauma, Intensive care units, Operation theatres and the Radiology department.

b. The unit should be fully counterbalanced and can be positioned to suit different bed heights. The unit should have the facility of vertical swing and horizontal rotation of the tube head to ensure X-Ray of any anatomy even within limited space.

c. The unit must have an effective braking system for parking and transport.

d. The exposure release switch should be detachable with a cord of sufficient length (at least 3 m)

2. The Generator:

a. Microprocessor controlled high frequency/inverter type of high frequency (80 kHz or more) for constant output.

b. It should have a power rating of at least 4kW or more

c. It should have a digital display of mAs and kV.

d. KV range: 40 kv to 100kV or more

e. mA range: 10 mA to 100mA or more

f. KV selection: 40 kV to 100 kV, selectable in 1 kV steps

g. mAS selection: 0.1 to 250 mAS

h. It should have overloading protection.

i. It should have an APR feature

3. X-Ray Tube and Collimator:

a. Stationary / Rotating anode having focal spot size less than 2mm

b. Output of the tube should match that of the generator.

c. Light Beam diaphragm/ Double layer Collimator with auto cutoff switch. The light intensity shall be at least 160 lux at 1 mtr distance from the focal spot.

4. **The** unit should operate on a single-phase power supply and should have a plug in the facility to any standard wall outlet with automatic adaptation to line voltage 200 to 240volts, 15Amp plug.

5. The Leakage radiation level at 1 meter from the focus should be lessthan 70 mR. Products having minimal leakage radiation levels will bepreferred. (Please attached relevant test report)
6. The Systems should be fully safe concerning

a. Overcurrent

b. Overvoltage

c. Maximum loading of tube

7. Power input to be220-240VAC, 50Hz fitted with Indian plug.

Conditions for tenderer:

1. All accessories should be from the same Original Equipment Manufacturer for the main unit.
2. Instruments must be ISO certified and a copy should be enclosed. (The ISO Certificate must be issued by any organization accredited by the Bureau of Indian Standards or accredited by the international accrediting forum "IAF" (Certificate to be attached).
3. Should be USA FDA and/ or European CE be approved by 4 digits notified body.
4. Should be AERB approved product.
5. Other necessary certifications, if any, will be provided by the bidder for the smooth functioning of the machine.
6. Installation process should be performed by O.E.M trained service engineers/ service representatives on OEM letterhead or Service Report within 15 days of supply, with the mandatory provision of providing preventive services visit of OEM trained Service Engineer/ Service Representative quarterly per year till the completion of warranty period (i.e., 20 visits for the first 05 years) & further quarterly visits (04 visits/year) year till the completion of CMC period.
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9. Offered Equipment should have a strong Government Installation base.
10. Offered Equipment should have a Regional Sales Service Centre of the Original Equipment Manufacturer in the region for a 95 % uptime guarantee.

11. For the offered main unit, the essential, optional required consumables'/accessories' shelf life should be declared on the Original Equipment Manufacturer's letterhead.
12. In case of technical snag/failure/breakdown the response time for the inspection should be within 24 hours and repair within 05 days otherwise provide a service machine/ alternate arrangement to be made till the period of recovery of the breakdown of the unit, failing which attracts penal action as per the decision of institute/ hospital.
13. For offered equipment the Training of technical staff and users should be performed by Original Equipment Manufacturer trained Service Engineers at the proper designated place- at bidders` cost.
14. Company should quote their latest model and need to provide an affidavit for the same.
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19. The Bidder and its OEM both have to submit a notarized affidavit on the Indian Non-Judicial Stamp Paper of Rs.100/- that the bidder has not quoted the price higher than the current financial year and last financial year supplied to any government Institute/ Organization/ reputed Private Organization. OEM also has to submit that the price quoted by the bidder in the bid is on its behalf and the lowest in the current and last financial year in the country. Therefore, if at any stage it has been found that the supplier and its OEM have quoted lower rates than those quoted in this bid; the Institute (the purchaser) would be given the benefit of lower rates by the Supplier and any excess payment if any, will become immediately payable to the Institute (the purchaser). If such an affidavit is not submitted, the bid will be outrightly rejected. (Part of technical bid).
20. Guarantee / Warranty Period: Separate offers of Comprehensive Maintenance Contract (CMC on main equipment) and Annual Maintenance Contract (AMC on main

equipment) for further 5 years after expiry of 5 years of warranty (i.e., 6th, 7th, 8th, 9th and 10th years) in rupees only (and on basis of percentage of price) should be included in a financial bid in the absence of which the offer is liable to be rejected. Payment for CMC/AMC shall be made only after the expiry of the warranty of 5 years, in case the Institute (the purchaser) decides for availing of CMC/AMC services. Contract for CMC/AMC shall be decided on expiry of warranty but rates (not more than 5% inclusive of all taxes for 6th to 10th year) will be frozen at the price of an issued purchase order before the release of payment by the Institute (the purchaser). However, the Institute (the purchaser) may decide not to enter into any CMC/AMC contract without assigning any reason for the same, which shall be binding upon the bid.

21. Should provide 5-year CMC. CMC cannot be more than 5% of the contract value.
22. System configured application-specific educational video tutorials shall be provided as standard with the system.
23. Details of service outlet in India to render services during 5 years warranty period.
24. The principals must give a certificate if the supplier/vendor is changed during the course of the guarantee/warranty period, the principals would be responsible for the upkeep/maintenance of the quote/supplied equipment, besides honouring all the terms and conditions of CMC/AMC in letter and spirit.