कार्यालय अधिष्ठाता
स्व. श्री लखीराम अग्रवाल स्मृति चिकित्सा महाविद्यालय रायगढ़
Bendrachuwa, Raigarh, Chhattisgarh, Ph-07762-215619, E-mail: gmcraigarh.2013@gmail.com

क्रमांक / चिकि. / क्रय / 2016 / 5719 रायगढ़, दिनांक 14/12/2016

/ / निविदा सूचना / /

स्व. श्री लखीराम अग्रवाल स्मृति चिकित्सा महाविद्यालय रायगढ़ एवं संबद्ध चिकित्सालय के लिए बड़े चिकित्सा उपकरणों (Major Equipments) के क्रय हेतु निर्माता / अधिकृत विक्रेता / प्रदायकर्ता फर्मो से खुली निविदा आमंत्रित की जाती है। निविदा हेतु विस्तृत शर्तो की जानकारी, निविदा प्रपत्र, अधोहस्ताक्षरकर्ता के कार्यालय से आवेदन पत्र प्रस्तुत कर राशि रू. 1500/– (एक हजार पांच सौ रूपये मात्र) नगद अथवा डिमाण्ड ड्राफ्ट (अधिष्ठाता, स्व. श्री लखीराम अग्रवाल स्मृति चिकित्सा महाविद्यालय रायगढ़ के नाम पर) जमा कर प्राप्त किया जा सकता है। निविदा संबंधित विस्तृत जानकारी हेतु चिकित्सा महाविद्यालय रायगढ़ के वेबसाइट www.gmcraigarh.com पर अवलोकन कर सकते है।

निविदा बिक्री की तिथि	:	19.12.2016 से 10.01.2017 समय 02:00 बजे तक।
निविदा जमा करने की अंतिम तिथि	:	10.01.2017 समय 03:00 बजे तक।
निविदा खोलने की तिथि	:	10.01.2017 समय 04:00 बजे।

अधिष्ठाता
स्व. श्री ल. अ. स्मृ. चिकि. महाविद्यालय
रायगढ़ (छ.ग.)

OFFICE OF THE DEAN

Late Shri Lakhiram Agrawal Memorial Medical College, Raigarh (C.G.)

BendraChuwa, Raigarh (C.G.), Ph. 07762-220742, E-mail: gmcraigarh.2013@gmail.com

No./ MC/Purchase/2016-17/5718 Raigarh, Dated ..14.12.2016

Tender for Supply of Medical Equipment Items

Sealed tenders are invited on behalf of Govt. Of Chhattisgarh for supply of **Medical Equipment** Items required for Lt. Shri Lakhiram Agrawal Memorial Medical College, Raigarh (C.G.) from Manufacturer/Authorized Dealer and Supplier from all over India. The bidder must be registered with the Commercial Taxes Department having a valid TIN for the supply of **Medical Equipments** items. The Tender Documents can be obtained from the office of the Dean, Late Shri Lakhiram Agrawal Memorial Medical College, Raigarh (C.G.) on payment of **₹1500**/- (Non-refundable) as Tender document fee during office hours by giving an application on plain paper or can be downloaded from the website: www.gmcraigarh.com. In case of online form, the Tender should be accompanied by DD of **₹1500**/- (Non-refundable) as cost of the Tender document. Interested parties can submit their offers manually/by Speed Post/by Courier duly superscripted "**Tender for Supply of Medical Equipment Items**" along with DD/Bankers Cheque of ₹300000/- as EMD drawn from any nationalised bank favouring "**Dean, Late Shri Lakhiram Agrawal Memorial Medical College, Raigarh (C.G.)**" in sealed envelopes on or before **10.01.2017** up to **03:00 PM** and will be opened on **same day** at **04:00** PM. The Bidder or their representative may be remain present during opening of the tender.

Dean
Lt. Shri Lakhiram Agrawal Memorial Medical College Raigarh (C.G.)

The Bidders are expected to go through all instructions, terms & conditions as specified in the bidding documents. Failure to furnish complete required information or submission of a bid with incomplete information may result in rejection of the bid.

ELIGIBLITY CRITERIA

1. Bidders must be only manufacture of the Equipment items concerned.
2. Should have average turnover of Rs. 01 Crore during the last three years.
3. Should have at least 03 year's experience in manufacturing Equipment.
4. The bidder must be registered with Commercial Tax Department, having valid TIN.
5. The Bidder must submit latest VAT Clearance Certificate.
6. The Proposal Should be accompanied by Earnest Money Deposit (EMD) of Rs. 300000/- by DD/Bankers Cheque Drawn from any nationalized bank favouring Dean, Late Shri Lakhiram Agrawal Memrial Medical College, Raigarh (C.G.)
7. The Bidder should have valid PAN of the applicant firm.

SUBMISSION OF PROPOSALS

The Pre-Qualification, Techno Commercial and the Price bids are required to be submitted in separate envelopes. Envelope containing financial bid shall not include any other document related to bidding. All three envelops are to be enclosed in one envelope which shall be addressed to the **Dean, Late Shri Lakhiram Agrawal Memorial Medical College, Raigarh (C.G.)** superscripted "Tender For Supply of **Medical Equipment Items**."

EVALUATION OF BIDS (Three Bid System)

The bids shall be evaluated in three stages :-

1. **Stage–1**, Pre-Qualification (Envelope "A") shall be opened and only those bidders shall qualify for stage–2 of bidding, whose Pre-Qualification bid meets the eligibility criteria mentioned in the aforesaid clauses.
2. **Stage-2**, Techno commercial Bid of only those bidders shall be considered whose pre–qualification bid meets the eligibility criteria.
3. **Stage–3** Price Bids (Envelope "C") of only those bidders shall be opened who passed the above two stages on the basis of the rate comparison, the contract shall be awarded for Lowest Bid for each item.

Terms and Conditions

1. Only manufacturer or authorized dealers/stockist and supplier from all over India are eligible to bid.
2. Dealers or supplier/stockist should submit valid **Tender Specific authorization** from Primary Manufacturer only. Authorization should be exclusively for the tender of Dean, Medical College Raigarh. **Non-specific/General authorization will not be accepted under any condition.**
3. Tender document should accompany with demand draft or banker cheque of Rs. **3 Lakhs** as EMD in favour of Dean, Lt. Shri Lakhiram Agrawal Memorial Medical College, Raigarh (C.G.) from Nationalized Bank Only. **FDR will not be accepted as EMD.**
4. EMD of unsuccessfully bidder will be returned from date of finalization of rate of items. EMD of successful bidder will remain with buyer till the validity of tender rate.
5. Rate will remain valid for 12 months only.
6. Bidders should have valid Sale Tax/Vat Tax clearance certificate from competent authority and should also have PAN & TAN No.
7. Bidder Should be engaged in Medical Equipment Items Business and have annual turnover more than 01 Crore last for three consecutive years.
8. Items supplied by the bidder must have at least 18 months before the expiry date as on the date of supply.
9. Price should be quoted in Indian Rupees. It should be firm and final and F.O.R. to destination and inclusive of all taxes. No other taxes and duties will be paid over and above the quoted price. The CST/VAT should be mentioned separately.
10. Price Bid Should be typed written. **Handwritten Price Bid will not be accepted.** Use of Whitener/eraser in price bids is not acceptable. The Items which are not quoted by bidder has to be marked as "-" in Price Bid.
11. The damage during transport/supply of Items will be at the cost of bidder. In transit loss upto supply destination has to be borne by bidder.
12. The payment will be made after supply and acceptance of the Items which must be completed within the period mentioned in the supply order. Delivery period and other conditions of bidder will not be accepted and as such conditional tenders will be rejected.
13. The Medical Equipment Items supplied should be brand, new & latest.
14. Dean reserves all rights to accept or reject any or all tender without assigning any reasons therefor.
15. List of items required with specification is enclosed herewith. Bidders are required to quote their rate according to the Serial No. of item in the list. Rate quoted without giving serial no. of the list will not be considered.

16. The Quality assurance certificate (ISO, CE Certificate ISI etc.) from manufacturer should also be attached with items.
17. Quantity of items can be increased or decreased as per the requirement of the institution.
18. The supply has to be made within a period of 45 days from the date of the issuance of Purchase Order by the institute. In case of failure to do so, the institute may impose the penalty as mentioned below and deduction will be made from amount payable towards supply of Purchase order value, except in force majeure (Act of God, War, Hostilities, Invasion, Act of Foreign enemies, Mobilisation, Requisition, Embargo, Rebellion, Revolution, Insurrection, Civil War, Acts of threat of Terrorism, Riots, Commotion, Strikes, Go slow, Lock Outs, Contamination by Radio Activity from any Nuclear Fuel etc.):

Delay	Penalty
Upto 45 days	Nil
45 - 60 days	2%
60 – 90 days	3%
Above 90 days	5%

Procedure

Document to be Provided in Envelope"A" (Pre Qualification Bid) –

1. Should contain EMD in the form of DD/Bankers Cheque of appropriate Amount.
2. Firm Registration Certificate copy.
3. PAN Card.
4. Copy of Valid Sales Tax Registration (TIN).
5. Latest VAT Clearance Certificate.
6. Turn over certificate (Annexure-1).
7. In case the bidder is an authorized dealer/supplier/stockist it should submit original letter of tender specific authorization from Primary Manufacturer. Authorization should be exclusively for this tender.
8. List of past supplies with performance certificate from end users in Govt./Semi Govt./Public Sector departments at least two.
9. Affidavit/Undertaking that firm has not been black listed in the past by any organization.
10. Affidavit/Undertaking that the firm has no vigilance case/CBI/FEMA case pending against supplier (Principal)
11. Affidavit/Undertaking that the firm is not supplying the same item at the lower rate quoted in the tender to any govt. organization.
12. Acceptance of all terms and conditions.

Document to be Provided in Envelope "B" (Techno Commercial Bid) –

1. Name and serial number of Item, technical catalogue and literature of each item quoted.
2. Quality assurance Certificate if any (ISI/FDA/UL/BS/ISO/IP/BP).
3. Complains statement with relation to specification and any deviation, if any.
4. Name of manufacturer along with authorization letter for item quoted.

Documents to be Provided in Envelope"C" (Price Bid)-

Should contain price of items as below –

S.N.	S.No. of Tender	Name of Equipments	Specification	Make	Unit Price	VAT/CST	Total Amount	Amount (In Words)

Dean
Lt. Shri Lakhiram Agrawal Memorial
Medical College Raigarh (C.G.)

BIDDER'S PROFILE

1. Name of the bidder : .....

2. Permanent address of the firm/Supplier : .....

   Tel No. : ..... Fax : .....

3. Registration & incorporation particulars of the firm : .....

   (Please attach attested copies of documents of registration/incorporation of your firm).

4. Permanent Account Number, Income Tax Circle.....

5. EMD DETAILS :

   DD/Bankers Cheque No..... Dated:..... Rs.....

6. TIN.....

7. Cost of Tender Document

   DD No..... Dated:..... Rs.....

I/We hereby declare that the information furnished above is true and correct. In case the above information is found incorrect at any stage, the Institute may take appropriate action as warranted.

Name and sign of the authorized person of the firm along with seal

Place:

Date:

Annexure-1

On the letter pad of Chartered Accountant

This is to certify that the total turnover in the case of M/s ..... having PAN ..... is as under :

Financial Year/Period	**Amount in Rupees(Figures)**	**Amount in Rupees(words)**
2013-14 2014-15 2015-16		
Total		

Average= Total/3

It is further certified that the above mentioned amounts have been derived from the books of accounts presented before us for the above mentioned periods.

Chartered Aecountants

OFFICE OF THE DEAN
LT SHRI LAKHIRAM AGRAWAL MEMORIAL MEDICAL COLLEGE RAIGARH (C.G.)

List of Medical Equipments

S.No.	Name of Equipments	Specification	Qty.	Unit	Department
1	2	3	4	5	6
01	Microtome Sledge large cutting	Specimen Orientation • ± 8° horizontal and vertical [optional] Cutting Stoke • 270mm Maximum specimen size: • Maximum specimen size 250x110mm Section thickness range • 0-040µm in 1µm increments Total feed range • ±8° horizontal and vertical (optional) Specimen holder • Specimen vice or quick release holder for cassettes, supercassettes and hardboard squares. Dimensions • H325 x D610 x W260mm Net weight: 40Kg	01	Nos.	Anatomy
02	Peripheral Nerve Stimulator for monitor Degree neuromuscular Block	ANNEXURE-01	02	Nos.	Anesthesia
03	Peripheral Nerve Stimulator for Nerve Block	ANNEXURE-02	02	Nos.	Anesthesia
04	Transport Ventilator	ANNEXURE-03	01	Nos.	Anesthesia
05	Intravenous Fluid Warming System For Anesthesia and intensive care	ANNEXURE-04	02	Nos.	Anesthesia
06	Mechanical DVT Prophylaxis Device Specifications	ANNEXURE-05	02	Nos.	Anesthesia
07	Cryo Therapy Unit	Stainless steel cryootherapy unit (with cylinder & spray) and liquid nitrogen storage tank	01	Nos.	Dermatology
08	Light microscope	-	01	Nos.	Dermatology
09	Microderma abrader (eg- minivac by timpac health care)	Diamond tip with cannula or hand piece for facial skin resurfacing, acne scar and stretch marks	01	Nos.	Dermatology
10	Dermachair (eg- derrmadelux by dermaindia)	Multiiposition section , one couch , adjustable height , with remote control operated	01	Nos.	Dermatology
11	Dermatoscope (eg- Heine delta 20 plus dermatoscope unit by timpac health care)	With contact plate dermatoscopy oil , dermatoscopy compendium	01	Nos.	Dermatology
12	Whole body PUVA (eg-Spigel series whole body Phototherapy unit by dermaindia)	With UVA and narrow band UVB Lamps (TL100 Watt tube Light)	01	Nos.	Dermatology

List of Medical Equipments

S.No.	Name of Equipments	Specification	Qty.	Unit	Department
1	2	3	4	5	6
13	Radiofrequency cautery (eg-surgitron dual RF by timpac health care)	High frequency (4MHz), Low Temprature	01	Nos.	Dermatology
14	Q switched Nd : YAG Laser (eg - 1.Economy model Q switched Nd : YAG Laser by timpac health care , or 2. Akira primier by dermaindia)	Wave lt- 1064,532 nm for epidermal and dermal pigmented lesion and tattoo removal	01	Nos.	Dermatology
15	Diode laser (mediostar next xl by timpac or sakura diode laser by dermaindia)	Wave length 755 – 950 nm for hair removal power upto 2400 watt	01	Nos.	Dermatology
16	BERA With ASSR With Wireless Technology	1. ABR Maine Unit should be interfaced with the computer via USB For Data Exchange. 2. ABR System Should have 2 Channel amplifiers having the capability for ipsilateral and contraLATERAL abr RESCORING. 3. Amplifier should be small in size and weight for convenient placementnear patient. 4. Amplifier should have build-in impedance measurement with LED redout at the amplifier for minimizing preparation time. 5. Must be able to combine multiple samples to one waveform. 6. Must have ability to upgrade to CE Chirp Stimulus TM. 7. Amplifier Frequency Response : 0.2 - 10000 Hz 8. Input impedance :> 1000 MW 9. Abr System Main Unit must have separate output jack for left, right and bone tranducers and a free field speaker output for.	01	Nos.	Ent & Head and Neck Surgery
17	SLR camera with accessories	-	01	Nos.	FMT
18	Wheeled Trolleys	Full Stainless Steel Folding Mortuary Trolly Mirror Type Top Full Stainless Steel Type: Coffin Accessories Style: European Style Application: Adult Material : Stainless Steel Dimension : 205*77*99cm Weight capacity: 272kg Function: body transportation	02	Nos.	FMT

List of Medical Equipments

S.No.	Name of Equipments	Specification	Qty.	Unit	Department
1	2	3	4	5	6
19	Video Camera	HD Remote Operable With Tripod Stand (Handicam)	01	Nos.	FMT
20	Autopsy Table (L-Shaped)	Autopsy Table with hydraulic high, low movement control. Table top fabricated of 14 Gauges stainless steel with built in large sink on one end. Base cabinetprovided under the table for additional storage. Single bowl sink, 2 piececonstruction for easy installation and flexibility for complete room wash down, wrist operated stainless steel FAUCET with hot and cold water flow controlvalves, "Reverse Flow". Hydro Aspirator with built in vacuum breaker.Construction 304 type stainless steel with large radius inside corners for easy Clean-up. Manufactured without rivets, bolts or other devices. Three solid Stainless steel sliding body supports, wooden headrest, tabe length-91'',Width-30'' approx. Dissection wing length-62'' width30'' approx.	03	Nos.	FMT
21	Rib, Shears, right, Left	Complete set made up of good quality stainless steel	04	Nos.	FMT
22	Paraffin Bath Embedding	ANNEXURE-06	01	Nos.	FMT
23	Cold Storage 10 Body Chamber for keeping dead Bodies.	**ANNEXURE-07**	01	Nos.	FMT
24	Automatic tissue processing machine	STP 120-1 Spin Tissue Processor Basic Instrument 100-240 V 50-60Hz with Standard Accessories.	01	Nos.	FMT
25	Pedestal Shadow less light led	Philips	06	Nos.	General Surgery
26	Colonoscope with light camera monitor	PENTAX, EPKi 7000 & EG29i 10	01	Nos.	General Surgery
27	Laproscope	High Definition DH Camera Control Unit With 03 Chip Camera w3ith 23 inch Flat screen monitor system with 0 degree telescope.	01	Nos.	General Surgery
28	-20^0 C deep freezer	-	01	Nos.	Microbiology
29	DNA and RNA Extraction kit	100 tests	04	Each	Microbiology
30	Gel documentation system	Bio – Rad	01	Nos.	Microbiology
31	Cold Centrifuge	15000 rpm, (REMI)	01	Nos.	Microbiology
32	Weight Machine Digital For Blood Bags	-	04	Nos.	Pathololgy, Blood Bank
33	Incubator	**ANNEXURE-08**	02	Nos.	Pathololgy, Blood Bank

List of Medical Equipments

S.No.	Name of Equipments	Specification	Qty.	Unit	Department
1	2	3	4	5	6
34	Portable Donor Chair	1. Two sectional constructions, duly covered with cushion seat. 2. Provision of height Adjustable seat section. 3. Top is covered with25 mm thick PU form mattress. 4. Adjustable & removable hand support for blood transfusion from both sides. 5. Folding legs and seat and back rest. 6. Light weight and Portable. 7. Standards & approvals : CE mark and EURoHS compliant. 8. Manufacturing Standard : ISO approved.	04	Nos.	Pathololgy, Blood Bank
35	LED TV 42" For Blood Donation Room	ANNEXURE-09	01	Nos.	Pathololgy, Blood Bank
36	Portable Tube Sealer	ANNEXURE-10	04	Nos.	Pathololgy, Blood Bank
37	Reagent Refrigerators with Digital Temp Display	ANNEXURE-11	04	Nos.	Pathololgy, Blood Bank
38	Digital Camera for Camps	ANNEXURE-12	01	Nos.	Pathololgy, Blood Bank
39	Plasma thawing bath	ANNEXURE-13	01	Nos.	Pathololgy, Blood Bank
40	Blood Bank Refrigerator 2-6^{0}C300 Ltr.	ANNEXURE-14	03	Nos.	Pathololgy, Blood Bank
41	Cryobath	ANNEXURE-15	01	Nos.	Pathololgy, Blood Bank
42	Platelet incubator with Agitator (60 Bags Capacity)	ANNEXURE-16	02	Nos.	Pathololgy, Blood Bank
43	Gel Blood Grouping System	ANNEXURE-17	01	Nos.	Pathololgy, Blood Bank
44	Deep Freezer (- 40 ^{o}C)	ANNEXURE-18	01	Nos.	Pathololgy, Blood Bank
45	Deep Freezer (- 80 ^{o}C)	ANNEXURE-19	01	Nos.	Pathololgy, Blood Bank
46	Refrigerated Centrifuge	ANNEXURE-20	02	Nos.	Pathololgy, Blood Bank
47	Gas analysis apparatus, Haldane's student's type	ANNEXURE-21	01	Nos.	Physiology

List of Medical Equipments

S.No.	Name of Equipments	Specification	Qty.	Unit	Department
1	2	3	4	5	6
48	Physiograph, single channel with accessories	• Student physiograph should ready to use experiments with step by step instruction protocol for each experiment to be supplied with compatible transducers and stimulator. Sampling rate ≥ 200 KHz aggregate with variable sampling rate on each channel. ADC resolution 24 bits. • Constant-current stimulator and Bio-Potentials (EMG, EOG, EEG,ECG), temperature, Pulse, respiration, isometric. • Pressure, muscle activity/ force respiration belt, hand dynamometer , pulse, respiration &temperature, heart sound, push button switch, EKG electrode, EEG & EMG paste. • Manufacturer should have ISO certification for quality standards • Should be approved to the IEC 60601-1 patient safety standard, making them safe for use with human subjects	02	Nos.	Physiology
49	Polygraph	• Number of channel : 8 channels Data Acquisition system 12 • Range: - +2 mV to +10 V and Sampling rate of 400 KHz (aggregate speed), • ADC resolution = 16 bits on all gain ranges and variable sampling speed on each channel with continuously record and display up to 32 channels of data.	01	Nos.	Physiology
50	Gas analyzer automatic for Co2, O2, N2	ANNEXURE -22	01	Nos.	Physiology
51	BM11005 Laser 2100: Single Output Emeitaly	ANNEXURE -23	01	Nos.	Physiotherapy

Dean
Lt Shri Lakhiram Agrawal Memorial
Medical College Raigarh (C.G.)

Annexure-01

Specification of Peripheral Nerve Stimulator for Monitor degree neuromuscular block and recovery

Technical specification:

- Should have a current range from 0.1 to 5mA.
- Should have a resolution of 0.01mA
- Should have a digital display for current.
- Should have short stimulus pulse duration of 0.1ms.
- Should have a frequency range from 0.1 to 99Hz.
- Should be able to monitor single twitch,Train of four,PTC and DBC.
- Should have integrated electode cable with lead.
- Should be battery operated.
- Should be supplied with 5 sets of insulated needles in varied length.
- Should have safety certificate from a competent authority CE/FDA(US)/STQC CB certificate /STQC S certificate or valid detailed electrical and functional safety test report from ERTL.copy of the certificate/test report shall be produced along with the technical bid.

Annexure-02

SPECIFICATION OF PERIPHERAL NERVE STIMULATOR FOR NERVE BLOCK

S.No.	Product Specification
01	Electro Neuro stimulator for plexus and peripheral nerve Block,with large LCD screen,adjustable impulse frequency of 1,2 and 4Hz,and have duration of 300,100,50 Qs choice of display units:mA or nC,should have safety mode button for immediately electric current cut off,should can be used under sterile should can be used under sterile conditions,Dimension:Length-200mm width-93 mm,height-mm,weight approx 205 gms,should have protective hood,conforms to IEC standards.
02	Elecro Neuro Stimulator Needle for Plexus and peripheral Nerve Blocks G-20/21/23,L-35/50/100/120/150mm
03	Stimulating Catheter for continuous plexus and Peripheral nerve Block.With split canula,metallic stylet,antibacterial filter.electric cable,syringe,dressing film,centimetre catheter. G-18,L-35/50/85/120mm

Annexure -03

SPECIFICATION OF TRANSPORT VENTILATOR

Mode : ACMV SIMV SPONT (CPAP,) Volume Guarantee (VtG & MVG) Bi-Lev (APRV)
Breath Types **Pressure Control Pressure**

Spport Volume Control	
NPPV	ON. Off (leak compensation up to 30 LPM)
VG Mode	VtG (Tidal Volume Guarantee) MVG (Minute Volume Guarantee)
SIGH	ON/OFF Synchronized Nebulizer ON/OFF Nebulizer Period Off, 5 to 60 Min
2Min 100% 02 function	ON/ OFF
Tidal Volume	30 to 2,200ml Breath Rate 1 to 99 b/min Inspiration
Time	0.1 to 3.0 sec Flow 2 to 100 L/min Pressure Control 5 to 60 cmH2O Pressure Support 0 toi 60 cmH2O
PEEP/CPAP	0 to 30 cmH2O
Pressure Trigger	-9.9 to -0.1 cmH2O Flow Trigger 1 to 20 LPM
Rise Profile	5 levels PSV Ti 0.1 to 3 sec PSV Flow Termination 10%
to 70% Volume Control	Ti/Flow
Flow Waveform	Square/Descending
FiO2	21% to 100%
FiO2 Sensor	On, OFF, Calibrate
Manual Breath	0 to 3sec
Panel Lock	On/OFF
Target VtG	100 to 2,200 ml PSV min to 5 to 60 cmH2O PSV Max 5 to 60 cmH2O
P High	3 to 60 cmH2O P Low o to 30 cmH2O T High 1 to 15 Sec
TLow	0.5 to 5 sec
Inverse I: E	30:1
Alarms Prioritization	3 Levels-Cautions, Medium, High
Low Minute Volume	0.0 to 50 L/Min
Low Pressure	Off, 1 to 98 cmH2O High Pressure 4 to 99 cmH2O High Minute
Volume	0.4 to 50 L.Min
High FiO2	31% to 99%, Off O2
Low FiO2	Off, 22% to 90% O2 Off, 1 to 99 bpm Low Vte
High Rate	Off, 10 to 2,200ml Low Vti Off, 10 to 2,200ml
Apnoea/Back-up Ventilation	10-60 sec
Check Circuit (Circuit Disconnect), Low/ Empty Battery, 02 Supply Failed, Check O2 Sensor	
Waveforms	Pressure, Flow, Volume
Loops	Pressure/Volume & Flow/ Volume
Airway Pressure LED Gauge – 10 to 120 cmH2O Peak Inspiratory Pressure 0 to 120	
cmH2O Base Pressure	0 to 99 cmH2O Mean Pressure 0 to 99 cmH2O Exhaled Tidal
Volume	0 to 10L
Exhaled Minute Volume	0 to 99L Inhaled Tidal Volume 0 to 10L Inhaled Minute
Volume	0 to 99L Actual Breath Rate 0 to 99 b/min
Peak Inspiratory Flow	1 to 120 L/min FiO2 21% to 100% I:E Ratio 1:99 to 3:1
Buzzer Level	Low/High
Keypad Buttons	Keypad buttons with audible indicator
Power Save	On/OFF
Languages	English
Width/ Depth/High	29cm/28cm/25cm
Weight	6.9 kg/15.2 lbs
O2 Mixer	Internal integral, Electronically Controlled
High Pressure	35 to 90 psi O2 (0-100%) Low Flow Port 0 to L/min O2 (0-70%) Low
Flow Blending Bag	0 to 15 L/min O2 (0-100%)
AC Power inlet	100 to 240 VAC, 50-60Hz
DC Power inlet	12 to 15 VDC
Internal Batteries	**Hot Swappable 12 h Operation**
Charging time	Up to 3 h
USB x2	Download Logs, SW Upgrade
LAN Rj45	Networking
Rs232x2	Remote Alarm and Monitoring
Rs485	Communication

Annexure-04

INTRAVENOUS FLUID WARMING SYSTEM FOR ANAESTHESIA AND INTENSIVE CARE

TECHNICAL SPECIFICATIONS:

- Portable fluid warmer device that can be used for gravity based intravenous fluid delivery.
- Weight <8-10 kg, ergonomically designed to be attached to intravenous fluid stands/or trolley based that can be shifted from one patient care area to another.
- Usage counter-counter heat exchange/or in line microwave/dry heat to warm the designated fluid.
- Able to operate in the 37^0-42^0 C range.
- An integrated visual display and/or appropriate alarms to alert high (>43^0C) temperatures. Auto-shut off facility at this temperature is preferable.
- If recirculation fluid is to be used to achieve warming then user should be alerted to low levels of recirculation fluid. Recirculation fluid changes should not be required at<1-2 week intervals.
- Able to deliver warmed fluid to the designated temperature range from 50ml -5L/hr. If a higher flow model is being quoted then the model should offer anti –air embolism safety.
- Prime volumes should be<50ml.
- Sterile disposable fluid lines/packs/individual patient cartridge for single patient should be made available at a designated stockist at reasonable cost.(< Rs500-) For institutional bulk purchases the cost of these disposable should be frozen for the duration of warranty/comprehensive maintenance contract(CMC).Price will be used for comparison.
- A pack of 100 disposable fluid lines/packs/individual cartridges for single patient use should also be supplied per unit ordered at no added cost.
- Meet the American Association of Blood Banks blood warmer standards for blood warming devices of US FDA certification that the device can be used to warm blood.
- Should operate on 220-240v 50Hz AC supply.

- Two year warranty /and 5 years Comprehensive Maintenance Contract as per institutional norms and rates will be provided.

Annexure-05

Mechnical DVT Prophylaxis Devis Specifications

Technical Specification:

Size	3.3*15.2*17.5cm
Weight	2.7kg
Power	230v,50Hz,25VA
Pressure Range	30-60mmHg
Suggested therapeutic setting	40mmHg
Cycle time	12 seconds inflation
	48 seconds deflation

ANNEXURE- 06

PARAFFIN EMBEDDING BATH

Technical Specification :-

1 Description of Function

1.1 The Paraffin Tissue Embedding Center (TEC) is a modular unit for moderate to heavy Workloads in the preparation of wax tissue blocks.

2.0 Operational Requirements

2.1 System should be modular and and complete with microprocessor control of the large 3-5 litre paraffin redervoir, base molds warming oven, tissue holding tank, work stage and cold plate;user-
friendly touch membrance pad with LED display; lighted work stage ; built-in forceps warmer; foot switch and/or push button – activated paraffin dispenser; and programmable , automatic timer controls.

3.0 Technical Specifications

3.1 Paraffin Reservoir capacity at least 3 litres

3.2 Temperature ranges:
Paraffin Reservoir : 50deg C – 70 deg C (± 2deg C)
Work Surface : 50 deg C 70 deg C (± 5deg C)
Tissue Holding Tank: 50 dwg C 70deg C (± 2 deg C)
Cold Plate : -5deg C to -15 deg C to ambient

3.3 Refrigerant : Cold Plate , Cold Spot (Peltier controlled)

3.4 There should be a Membrance keypad with LED to set and display operating parameters, Current status, running time and alarm conditions for time and temperature .

3.5 Resolution of temperature display: +/-1 deg C

3.6 Unit should have self test on power up and should display error code in case of malfunction for easy maintenance and troubleshooting. Error codes should be indivative of the system failure or a single module failure.

3.7 Dimensions: (All dimensions variation +/- 10% rounded off to integral value.)
Height of work surface: 6cm or more
Cold Plate : at least to hold 80 to 100 cassettes)

3.8 Receptacle for 6 forceps

3.9 Pre heated forceps of teo type (for small and medium size tissue)

3.10 Drain Wax should remain in melted form

4.0 System Configuration Accessories, spares and consumables

4.1 Price should be quoted for each separately: Standard size cassettes – 1000 Nos.

4.2 Larger field Magnifying lens with cold light source.

4.3 Stainless Steel Moulds of different sizes (Depth 9 to 12mm) – 80 Nos.

4.4 Paraffin Scrapper – 3 NOs.

4.5 Halogen Bulb – 12 Nos.

4.6 Fuse – 12 Nos.

5.0 Environmental factors

5.1 The unit shall be capable of being stored continuously in ambient temperature of 0 – 50 deg C and relative humidity of 15 – 90%.

5.2 The unit shall be capable of operating in ambient temperature of 20-30 deg C and Relative humidity of 80 % .

6.0 Power Supply

6.1 Power input to ve 220-240Vac, 50Hz fitted with Indian plug.

6.2 Rset table over current breaker shall be fitted for protection

6.3 Suitable voltage corrector stabilizer

7.0 Standards and Safety

SI Name Technical

7.1 Should be complaint to ISo 13485: Quality systems – Medical devices – Particular Requirements for the application of ISo 9001 applicable to manufactures and service Providers that perform their own design activites.

7.2 Should be complain with IEC 61010-1: covering safety requirements for electrical Equipment for measurement control and laboratory use

7.3 Should be FDA or CE of ISi approved product

7.4 Comprehensive training for lab staff and support services til familiarity with the system.

8 Documentation

8.1 User/Technical/Maintenance manuals to be supplied.

8.2 Certificate of calibration and inspection from factory.

8.3 List of Equipments available for providing calibration and routine maintenance support as per manufacturer documentation in service/technical manual.

8.4 List of important spareparts and accessories with their part number and costing.

8.5 Log book with instruction for daily, weekly, monthly and quarterly maintenance Checklist.

The job description of the hospital technician and company service engineer should be Clearly spelt out.

8.6 Compliance Report to be submitted in a tabulated and point wise manner clearly Mentioning the page/para number of original catalogue.

Annexure-07

Cold storage 10 Body chamber for keeping dead bodies
Technical Specifications: 10 Body Mortuary Cabinets

Technical Specification :-

Dimensions 3165mm(W) x 2420mm(D) X 1785mm(H)
Height with cooling system with
PCC platform with mm-2,200mm
Sheet Metal Skin ----------
Interior Finish 0.5 SS Sheet
Exterior Finish 0.5 SS Sheet
Insulation Rigid Polyurethane Foam (CFC free),
Density -40kg/m3
Locking Mechanism Cam-Locks embedded in foam
Standard Accessories ----------
Lamp Vapor Proof incandescent lamp
Tempereture indicator cum
Controller
Electronic with Digital display
Carriage assembly Three piece, telescopic action
Mortuary tray One-piece stainless steel tray with tubular edge and
Handles.
Refrigeration System Roof Top Mounting Unitary
Capcity (BTU/H) 10,00
Power Supply 230V/1Ph/50Hz

ANNEXURE-08

SPECIFICATION OF INCUBATOR

Technical Specification :

Designed to meet all the safety aspects. Ensures safety against electrical shock hazards, fire hazards, mechanical hazards, electro-magnetic interference etc.

General specifications		
1	Capacity	250-300 lit
2	Dimensions (in centimeters; cm)	50-60 x 50-60 x 100-120 cm (inner) 60-65 x 850-900 x 1900- 1950 cm (outer)
3	Fabricated material	Inner chamber with durable, high quality stainless steel and powder coated steel of outer side
4	Door (Double door)	Inner door should be temperature safety glass and outer door should be magnetic with silicon packing for safety.
5	Temperature range a. Display of emperature b. Temperature accuracy	To maintain 5 to 60 $_{o}$C under normal conditions LED digital display with accuracy inside sensor ± 0.1 $_{o}$C and uniformity in maintenance
6	Illumination	Four fluorescent and one extra UV light
7	Circulation fan	14-15 w/2.5-3 EA
8	Compressor	Durable, low noise (1/3 HP or better HP)
9	Timer	Continuous timer
10	Shelves	5 shelves adjustable each other
11	Safety measures	BOD with over current breaker and very high or low temperature cut off
12	Stabilizer	Suitable stabilizer to maintain compressor and to work at 220-230 V

Chip Resistant hospital white finish,

ANNEXURE-09

LED TV 42"FOR BLOOD DONATION ROOM

TECHNICAL SPECIFICATION :-

Designed to meet all the safety aspects. Ensures safety against electrical shock hazards, fire hazards, mechanical hazards, electro-magnetic interference etc.

Features:	Clock, Dlna, Fast Zapping, On/Off Timer, Pap, Parental Control, Picture Frame Mode, Quick Start, Scene Select, Sleep Timer, Teletext, Usb Play
Functionality:	Smart TV Units
Warranty:	1
Display Type:	LED
Screen Size:	42 Inches
Connectivity:	AV, DLNA, HDMI, PC Audio In, PC Audio Out, RF, USB, Video Output, Wifi
Resolution:	1920x1080
Number of selectable Picture Modes:	14
Number of Speakers:	2
Audio Output:	8 Watts
Color:	Black

ANNEXURE-10

TECHNICAL SPECIFICATIONS FOR PORTABLE TUBE SEALER

TECHNICAL SPECIFICATION :-

Designed to meet all the safety aspects. Ensures safety against electrical shock hazards, fire hazards, mechanical hazards, electro-magnetic interference etc.

1. Power supply : Ni-MH battery pack 12V, 3.5 Ah
2. Classification : Protection against electrical shock
3. Power consumption: Operating 250W (max.)/Stand by 1W.
4. Battery charger : Input 100 – 240V AC, 0.4A, 50/60 Hz
5. Output 15V DC 500mA
6. Battery charging time : Initially 16 Hrs / Recharge 8 Hrs.
7. No. of seals per charge : 1250 continuous seals from a fully charged battery.
8. RF power : 20 W
9. RF frequency : 40.68 MHz
10. RF cable length : minimum 2.0 m
11. Weight : Maximum 2.5 kg.
12. Max. diameter of the tube that can be sealed : 6 mm (max.)
13. Sealing time : Less than 3 sec.
14. Indications :Power, Charging, Battery level
15. Sealing indication in the gun.
16. Dimensions (WxDxH) mm : Should not exceed 180 x 260 x 55
17. Standards & approvals : CE mark and EURoHS compliant.
18. Manufacturing Standard : ISO and EN approved.

ANNEXURE-11

REAGENT (LABORATORY) REFRIGERATOR

TECHNICAL SPECIFICATION :-

Designed to meet all the safety aspects. Ensures safety against electrical shock hazards, fire hazards, mechanical hazards, electro-magnetic interference etc.

Amperage	6A
Capacity	23.3 cu. ft., 650-700 L
Cabinet Material	High-impact, powder-coated paint
Breaker	15A
Capacity (English)	23.3 cu. ft.
Capacity (Metric)	650-700 L
Casters	2 in. (5cm) casters (two locking, two Nonlocking), factory installed
Defrost	Automatic
Depth (English) Interior	29 in.
Depth (Metric) Interior	73.7cm
Door Count	1
Door Style	Glass
Exterior Finish	High-impact powder paint coating
Dimensions (L x W x H) Exterior	37.2 x 28 x 79.2 in. (94.5 x 71.1 x 201.2cm)
Dimensions (D x W x H) Interior	29 x 24 x 58 in. (73.7 x 60 x 147.3cm)
Height (English) Interior	58 in.
Height (English) Exterior	79.2 in.
Height (Metric) Exterior	201.2cm
Height (Metric) Interior	147.3cm
Hertz	60Hz
Length (English) Exterior	37.2 in.
Interior Finish	High-impact powder paint coating
Insulation	CFC-free
Length (Metric) Exterior	94.5cm
Plug Type	6-15P
Shipping Weight (English)	370 lb.
Shelves	4
Refrigerant	CFC-free
Shipping Weight (Metric)	168kg
Temperature Control	Microprocessor
Temperature Range (Metric)	1°C to 8°C
Type	High-Performance Refrigerator
Voltage	208/230V
Width (English) Exterior	28 in.
Width (English) Interior	24 in.
Width (Metric) Exterior	71.1cm
Doors	Single
Width (Metric) Interior	60cm
Electrical Requirements	208/230V 60Hz

- Should be CE certified

ANNEXURE-12

DIGITAL CAMERA FOR BLOOD BANKING

Designed to meet all the safety aspects. Ensures *safety against electrical shock hazards, fire hazards, mechanical hazards, electro-magnetic interference etc.*

Digital Camera : DSLR
Lens:18-105 mm

Digital Zoom: 5.8x
Display Size: 3 inch

Product:With Kit

Memory Card Format:SD;SDHC;SDXC

Camera Type: Digital SLR Cameras

Sensor Resolution:16.2 Megapixels

	DSLR
	24.3MP
	CMOS
Screen	
(Inches)	3.2
Resolution (dots)	1229K
Shooting Specs	
	EXPEED 4
	ISO 100-12800
	Auto (2 types), Incandescent, Fluorescent (7 types), Direct Sunlight, Flash, Cloudy, Shade, Preset Manual (up to 6 values can be stored, Spot White balance measurement available during live view), choose color temperature (2500 K -10000 K), all with fine-tuning
(Seconds)	30-1/4000
Burst Mode (Continuous Modes)	6.5fps
	Portrait - Landscape - Child - Sports - Close Up - Night Portrait - Night Landscape - Party/Indoor - Beach/Snow - Sunset - Dusk/Dawn

	- Pet Portrait - Candlelight - Blossom - Autumn Colors - Night Vision - Color Sketch - Miniature Effect - Selective Color - Silhouette
(PSAM)	Program AE, Shutter priority AE, Aperture priority AE, Manual Exposure
Video	
	1920 x 1080
	60fps
Media	
Storage	SD, SDHC, SDXC
	JPEG
Connectivity	
	✓
HDMI	✓
Microphone	✓
PictBridge	✓
	✓
Battery	
Type of Battery	Li-Ion
Numbers of Shots	1230
Dimensions	
Dimensions (WxDxH)	140.5 x 78 x 113 mm
Weight	750 grams
After Sales Service	
Warranty Period	1 Year

ANNEXURE-13

PLASMA THAWING BATH-

Designed to meet all the safety aspects. Ensures safety against electrical shock hazards, fire hazards, mechanical hazards, electro-magnetic interference etc.

- For quick thawing of plasma at 37 degree C.
- Removable trays made up of SS 304 rods for holding approx. 12 regular plasma filled bags.
- Microprocessor based digital controller.
- Temperature : 37 degree C
- Timer setting range 0-4 hrs.
- Display 4x7 segment LED
- Inner SS tank.
- Temperature sensing method : sealed sensor dipped directly in water.
- Integrated pump for temperature uniformity.
- Should be CE certified and EUROoHS compliant

ANNEXURE-14

BLOOD BANK REFRIGERATOR- 2-6^{0}C300 LTR.

TECHNICAL SPECIFICATION :-

Designed to meet all the safety aspects. Ensures safety against electrical shock hazards, fire hazards, mechanical hazards, electro-magnetic interference etc.

- Type: Vertical
- Temperature uniformity of 4° ± 2°C, with a maximum variation of ± 1°C between trays
- Built-in temperature recorder and controller positioned at eyelevel for better visibility and temperature monitoring.
- Factory-calibrated digital sensor dipped in liquid medium for accurate temperature measurement and display.
- Internal fan positioned at 45°ensures uniform temperature inside of the cabinet.
- Automatic switch-off of the internal fan that prevents the loss of cold air when the cabinet door is open
- In-built stabilizer for increased compressor life
- Imported door heater avoids moisture contamination in humid atmospheric conditions
- Three-pane heated glass door with safety lock and rubber gasket insulates the refrigerator from ambient temperature variation
- Separate inner acrylic door for each compartment with magnetic latch that ensures minimal loss of cooling
- Mesh type sliding stainless SS 304 steel trays that allows bags to be placed upright with sufficient airspace to reduce "sardine effect"
- CFC free refrigerants with PUF insulation
- Capacity : 300 litres.
- Total storage capacity: 144 numbers of 450 ml blood bags.
- Storage capacity per tray: 30-35 numbers.
- Number of tray: 6 trays of Stainless Steel.
- Should be CE certified and EUROoHS compliant

ANNEXURE-15

CRYOBATH

TECHNICAL SPECIFICATION :-

Designed to meet all the safety aspects. Ensures safety against electrical shock hazards, fire hazards, mechanical hazards, electro-magnetic interference etc.

Review of Technical Specifications of Refrigerated water bath (Cryobath)

The committee approved the technical specification of Refrigerated water bath (Cryobath) as follows:

1. For uniform thawing of plasma bags at preset temperature of 4.± 0, 2^0C
2. High capacity pump t facilitate optimum and uniform thawing of plasma.
3. Capacity : 10-12 bags per run or per one cycle.
4. System to prevent contamination of individual ports during thawing.
5. Microprocessor based controller for precise monitoring and controlling of temperature at 4.± 0, 2^0C
6. Other requirements :

a) Input Power supply : 230 + 10%V, 50Hz, 1.5 A Single phase AC
b) Power consumption: Muximum 1600w
c) Operating temeratur : 3.5^0C -4.5^0C
d) Programmable temp. rage: 3^0C-50^0C
e) Display resolution : 0:1^0C
f) Temp. controller: Microprocessor base digital controller
g) Stainless steel, tank of 22 guage & stainless steel lid of at least 20 gauge.
h) Time taken for one process: Not more than 2 hours for plasma bags store at 40^0C.
i) Tray: Stainless steel, removable tray of individual compartments ofr holding plasma bags.
j) External dimension (WxDxH) : should be les than 850x500x800mm (± 10%).
k) Castor wheels: Mounted on lockable castor wheels.
l) Temp. sensing method: scaled sensor dipped directly in the water.
m) Weight: Less than 70 Kg.
n) Drain Line with shut off valve can be connected to existing plumbing.

7. Certifications:
   - Product certification: CE Class H A or US FDA certified
   - Quality Certification: ISO certified.
   - Protection against electric mechanical hazards: Preferably having imitational safety reuirements of EN61010-1.

The representation/complaints received from the manufactures during the pre-bid meetings for past 5 years have also been examined while finalizing these technical specifications and wherever found necessary suitable modifications have been incorporated.

ANNEXURE-16

PLATELET INCUBATOR WITH AGITATOR

TECHNICAL SPECIFICATION :-

Designed to meet all the safety aspects. Ensures safety against electrical shock hazards, fire hazards, mechanical hazards, electro-magnetic interference etc.

Platelet Incubator

- Should be designed to meet all international safety requirements of EN60601-1. Ensure safety against electrical shock hazards, fire hazards, mechanical hazards, electromagnetic interference etc.
- Should have flicker free CFL to provide uniform lighting.

1. Should have a provision to store the agitator for 48 platelet bags.
2. Should have a transparent outer door for clear visibility.
3. Door should have one hand operation with locking facility.
4. Should be able to maintain a temperature of 22 +/- 2 C.
5. Should have a digital temperature indicator.
6. Recording is made (in ink) on a weekly, circular chart paper (Option inkless recording) with 2 hours battery back-up for continuous operation during power failure with data logger.
7. Single digital temperature sensor for both recording and controlling
8. Should have audible visual high/low alarm for temperature control, battery on/low, sensor failure, agitator off, power failure, compressor and system.
9. Should have forced air circulation method for the uniformity of the temperature at all sides of the incubator.
10. Chamber mounted electrical outlet agitator should be available.
11. Inner chamber should be made of stainless steel and outer cabinet powder coated.
12. Power supply: 220-240 volt at 50Hz single phase
    - Should be CE certified and EUROoHS compliant Platelet Agitator
    - Should have pause switch enabling interruption of agitation for removal or replacement of platelet storage bags in the machine, and automatic restart in 10 seconds.
    - Should have flat bed agitator reduces sheer stress damage on the platelet.
13. Should be able to store a minimum of 48 random platelet bags
14. Should be flat bed agitator.
15. Gentle side to side motion with 60-70 stroke/minute.
16. Shelves:
    a. Should be made of good quality
    b. Coated with bacteria resistant material
    c. Perforated so that air circulation on both sides of bags.
    d. Should be made of _non-slip_ material.
    e. Removable shelves.
17. Heavy duty ball bearing gear motor for noise less and continuous operation for 24 hours a day throughout the year.
18. Safety feature:
    a. Audio alarm for temperature fluctuation
    b. Auto stop for agitation when the door is opened
    c. Power failure alarm
19. Push buttons switch with pause function for temporary stoppage of the motion.
20. Power supply: 220-240 volts at 50Hz single phase.
21. Should meet the National/ International standards laid down such as ISO/CE certified and EUROoHS compliant etc.

ANNEXURE-17
GEL BLOOD GROUPING SYSTEM

TECHNICAL SPECIFICATION :

Designed to meet all the safety aspects. Ensures safety against electrical shock hazards, fire hazards, mechanical hazards, electro-magnetic interference etc.

1. **Purpose of Equipment:** A single system Comprises of a Centrifuge, Incubator and Reader for Blood g and Cross matching. The Tehcnology should be approved by DCGI/FDA/NACCO.
2. **CENTRIFUGE : -**

I. Centriruge should be able to perform centrifugation of all the cards used for Blood Grouping and Cross (ABO Blood group system)
II. Centrifuge head should be accommodate minimum 12 cards having V- shape tubes.
III. Rpm, time and function should be displayed (LCD) on the screen in languages including English.
IV. Centrifuge should be microprocessor controlled base.
V. Equipment should have automamatic balance control of the centrifuge head.
VI. Speed of centrifuge should be 1030± 5 rpm.
VII. RCF of centrifuge should be 85 ± 1g.
VIII. Centrifuge time should be prefixed for 10 minutes.
IX. System should open automatically door lock assembly after end of the process.
X. Machine should be C E Compliant.
XI. Power 110V-240 V / 50-60 HZ.

3. **INCUBATOR :-**

I. Instrument should be able to incubate the Gel Cards at 37 °C
II. Incubator should be accommodate minimum 24 Cards.
III. Incubator time should be programmable.
IV. Should be microprocessor controlled base.
V. Power : 110V-240V / 50-60Hz.
VI. Operational temp : 5 to 45 °C
VII. Temperature should be fixed at 37 °C ± 1 °C
VIII. Instrument should be C E Compliant.
IX. Incubation time should be displayed on the screen.
X. Compatible for the incubation time set up from 1Min to 60 Min.

4. **The company should provide following combinations of cards / Reagents :**

I. Saline / Coombs cards with 6 'V' bottom shaped micro tubes containing polyspecific AHG for Coombs match, IAT, DAT based on Sephadex Gel technology.
II. The technology should not have any washing step and should avoid non specific results.
III. Sephadex Gel based Monospecific DAT to pic up IgG, IgA, lagM, C3c, C3d on the red cells.
IV. Gel based Forward/Reverse Blood grouping cards with minimum 6 'V' shaped bottom tubes and should pick up (DVI) phenotypel,.
V. The company should offer complete panel of ready to used liquid red cell reagents for antibody screenir identification including the Anti-D prophylaxis panel for Rh negatives.
VI. The company should offer Sephadex Gel based Rare Antigen cards (complete profile as well as single a cards)
VII. Elution kit for eluting the auto antibodies attached to RBC's.
VIII. The company should have its own panel of cards, cells and reagents for quality control.
IX. The Company should provide user list.

5. **Reader for Gel cards :**

Semi automated Immunohematology analyser should be able to read and interpret all the tests based on Sephadex Gel Technology for Cross Matching on Coombs and enzyme phase to pick both lgG and lgM Antibodies, Blood Grouping, Partial D typing, Antibody screening and identification etc.

The instrument should have capacity to accommodate 1 card with minimum 6 V shaped tubes based on Gel technology.

There should be Full Positive identification of the Gel Cards.
The instrument should exhibit different gradation of reaction (4+,3+,2+,1+, & -Ve).
The instrument should be able to validate, store, print and send the result to host computer.
There should be complete traceability of tests, results and operator.
Machine should be CE marked.
Power requirements : 110-240V / 50-60 Hz.

The equipment quoted should be CE Certified or USFDA approved.

Tehcnical Manual in English with operational details should be provided with each unit.

ANNEXURE-18

SPECIFICATION OF DEEP FREEZERS – (-40^{0}C)

TECHNICAL SPECIFICATION :

Designed to meet all the safety aspects. Ensures safety against electrical shock hazards, fire hazards, mechanical hazards, electro-magnetic interference etc.

1. Should be suitable for plasma storage in blood banks.
2. Temperature range -20^0 C to -40^0 C and adjustable with a setting accuracy of +0.10^{0}C
3. Internal capacity minimum 400 liters Vertical Cabinet (upright).
4. Powder coated solid outer cabinet to prevent corrosion.
5. Inner cabinet should be made of stainless steel.
6. Separate inner doors to prevent cold loss.
7. It should have more than 4 inner shelves of stainless steel (adjustable) with inventory racks.
8. Automatic closing of the front door below a opening angle of 90^0 degree.
9. Hold over time 2 hrs at ambient temperature.
10. Microprocessor control for operation with integrated audio visual temperature alarm function with digital monitoring display.
11. Minimum 4 hours battery back for display back up.
12. Seven days graphic temperature recorder with range of 0^0 C to -50^{0}C, with data logger.
13. Heavy duty hermitically sealed compressor air cooled refrigeration system, maintains inner temperature below -40^{0}C
14. Refrigerant should be CFC free
15. Cooled down time – Full load of plasma bag at 25^{0}C. Maximum of 5 hours for all packs to reach below – 5^{0}C. A full load of plasma bags to reach -20^{0}C.
16. Optional : Access port for C02 back up system for refrigeration.
17. Reliable mounting and fixtures to ensure minimize noise and vibration.
18. Should have lockable castors for free and easy mobility
19. Heating device on frame to avoid condensation
20. Alarm history: Temperature maximum and minimum, average temperature during alarm period, time of duration of alarm.
21. Have the possibility to check the internal temperature on display, during power failure.
22. Door opening audio and visual display alarm.
23. Casing & door should have vacuum insulation panel with polyurethane foam.
24. Automatic defrosting preferred.
25. Should have compressor running time < 60 to 70%
26. Should have facility for connection to external monitoring system
27. To be operational on 220 to 240 Volts at 50 Hz. Single phase.
28. Should meet the National/International standards laid down in the medical refrigeration such as ISO/CE/BIS/FDA etc.
29. A Line Voltage Corrector **as per the specification provided below** should form part of standard configuration. **Line Voltage Corrector**
30. Should be EUROoHS compliant

ANNEXURE-19

SPECIFICATION OF DEEP FREEZERS (- 80^{0}C)

TECHNICAL SPECIFICATION :

- Should be a Vertical model
- Should come with a fully stainless steel interior.
- Chamber Temperature range should be -50°C to -80°C (at 22-30°C ambient temperature)
- Inner chamber volume should be 300 litres.
- Total storage capacity should be 320 bags of 250 ml plasma bags.
- Storage capacity per compartment should be 80 bags.
- Should have 3 adjustable stainless steel trays.
- Should have 4 compartments.
- Inner door should be made of stainless steel grader 304.
- Door insulation should be 125 mm thick PUF insulation with rubber gasket sealing.
- Door handle should be with a self pushing mechanism so as to minimize the effort required while door opening.
- Heating near the door opening should be using the discharge line of compressor.
- Cabinet insulation should be 125 mm thick PUF insulation.
- Should be mounted on lockable castor wheels
- It should have two hermetically sealed compressors and should be automatically regulated according to the freezer load.
- Should use Primary refrigerant R404a (CFC free) & Secondary refrigerant R508a (CFC free)
- Temperature method by RTD sensor PT100 placed in stainless steel bracket.
- Should have 7 days circular chart recorder. It should be positioned at eye-level making it more convenient and accessible.
- Chart range should be -100° to +50°C
- Temperature indicator should be digital with resolution of 0.1°C and should come with batter back up.
- Should give user friendly alarms and indications about any abnormalities.
- Should have castor wheels (front lockable and rear non lockable)
- Should be supplied with suitable voltage stabilizer.
- Should be CE certified and EUROoHS compliant.

ANNEXURE-20

SPECIFICATIONS OF REFRIGERATED CENTRIFUGE

TECHNICAL SPECIFICATION :-

1. For separation of blood components like packed cells, platelet rich plasma, platelet concentrate, Cryoprecipitate & Buffy Coat.
2. Micro processor controlled system to make operation automatic.
3. Programmable memory : Memory with tamper proof facility.
4. Swing bucket blood bank rotor : With Metal Buckets of volume 6x1900-6x2000 ml capacity to accommodate 2 bags each of 450 ml blood bags with additive solution
5. Each removable plastic oval cups should accommodate maximum 2 quadruple bags of 450 ml volume with additive solutions.
6. Centrifugal force : Minimum ceiling – 5000 g
7. Micro processor controlled rotor speed to within 10 rotations per minute (rpm) of set value
8. Acceleration and deceleration profiles shall be available.
9. Temperature range -10^{0}C to + 40^{0}C _Micro processor controlled rotor temperature within 10C regardless of the centrifuge speed_
10. Programmable time : 0 – 99 minutes with minimum revolution of 1 minute.
11. Digital display of temperature, speed and time. No. of digit resolution etc. shall be indicated in the offer.
12. Motor imbalance detection: Automatic shut down of centrifuge if rotor load is out of balance with appropriate indicator.
13. Stainless steel chamber: Easy to clean, corrosion resistant with provision of both drain and condensed water collection container
14. Power requirement : 220/240 volts, 50 Hz. Single phase.
15. The equipment shall be suitable for operation from 0 to 40^{0}C at 90% relative humidity.
16. Electronic circuitry shall be tropicalised for this ambient condition.
17. The equipment shall have lockable castors
18. It shall have a security lock to prevent unintentional switch off and also unauthorized opening of the equipment
19. A heavy duty line voltage corrector (LVC) as per below specification and a Digital Double pan balance is required for weighting buckets should form part of standard configuration, however, single pan digital balance may also be considered if the purpose of equal weight on both opposite cups can be ensured. Make of LVC & Pan have to be specified.

Specification of Line Voltage Corrector:

20. Copper wound single phase automatic line voltage corrector conforming to IS:9815 (PT.1)/94 with latest amendments or Equivalent international standards fitted with a voltmeter and switch to indicate output/input voltage as under:
    - Capacity /rating: as per the requirement of the equipment
    - Input voltage; 160 to 260 volts, 50 cycles
    - Out put voltage; 220 volt to 240 volts
    - The equipment should be supplied with 2 meter chord at input & fitted with plugs of appropriate rating (15 amp)
    - Make of the line voltage corrector shall be indicated.
21. Should have provision for interphase to connect with external information system such as LIS/HIS
21. Accessories; Inserts with hook adapters , to spin buffy coat or small volume blood and balancing weights.
22. Should meet the National / International standards laid down such as ISO/CE/BIS/FDA etc.

.....

ANNEXURE-21

Gas analysis apparatus, Haldane's student's type

Technical Specification: -

- The computerized metabolic system provides all vital parameters such as ECG, heart rate, pulmonary volumes and capacities, respiratory gases and metabolic measurements.
- The system should calculate VE Expired minute volume , VO2 oxygen consumption , VCO2 carbon dioxide production , RER respiratory exchange ratio, ECG, HRV, Body Temperature and Pressure Saturate BTPS, Standard Temperature and Pressure Dry STPD, (VE / VO2), (VE / VCO2) etc. and should generates a number of graphs like Metabolic 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.
- It should plot real time flow & volume loops. ECG switch box (lead I, II, III, aVL, aVF, aVR and V1 to V6) for real time cardiac axis & vector analysis etc.
- The Oxygen sensor should have minimum range of 5-100% oxygen and resolution of at least 0.02% & the carbon dioxide sensor with minimum range 0-8% of carbon dioxide and resolution of at least 0.1% and variable flow range of 0-185 ml/min for best performance and results.
- The bio-potentials signal conditioners, supplied must be approved to IEC, CE & ISO.

.....

Annexure –22

Gas Analyzer Automatic for Co2, O2, N2

Technical Specification :-

The system should be able to

- Record & measure VO2 oxygen consumption , VCO2 carbon dioxide production, VE Expired minute volume , RER respiratory exchange ratio, ECG, HRV, Body Temperature and Pressure Saturate BTPS, Standard Temperature and Pressure Dry STPD, (VE / VO2), (VE / VCO2) etc. and should generates a number of graphs like Metabolic 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-head and 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 least 0.1% and variable flow range of 0-185 ml/min for best performance and results.
- To perform online and offline analysis up to 32 channels.
- Supplied with breathing accessories and Douglas bags.
- To plot real time flow & volume loops. ECG switch box (lead I, II, III, aVL, aVF, aVR and V1 to V6) for real time cardiac axis and vector analysis.

• IEC 60601-1 & ISO 9001:2008 certified & making them safe for use with human subjects.

• An obligatory demonstration of the equipment and necessary training.

• To be supplied with , branded computer & UPS.

Annexure –23

BM11005 Laser 2100: Single Output Emeitaly

Technical Specification :-

Graphic 320x 240 DPI LCD Display

16 bit microprocessor

82 Memorised Programmes

50 Protocols for Memorisation

Smart Card with 50 Protocols to memorise

Color display, touch screen

Smart card stores new work protocols

Intrelock device for remote blocking

Laser Emission Indicator

Self diagnosis and error signaling

Control by Microcontrollers

Facility to upgrade the equipment through website/smart card

High human tissue penetration

Facility to use large size probe (upto 375 W power) on the same unit

Technical Features :

Maximum Power : 25 mW (Depending on the probe used)

Wavelenght : 905 nm

Frequency : 1-10, 000 Hz

Function mides : Continuous and Pulsed

Upto 82 preset Protocols and 50 work cycles for patient

Timer : 1-99 Minutes
