No. F. 5(1-35)/Store/DHS/2016-2017
GOVERNMENT OF TRIPURA
DIRECTORATE OF HEALTH SERVICE

Dated, Agartala the_01/09/ 2016

To
The Director of Information Cultural Affairs,
Govt. of Tripura: Agartala.

Subject: -Wide publication of Notice Inviting Tender through Website/News papers for the procurement of equipments/instruments for CTVS-OT and DSA Cum CATH-LAB at AGMC & GBP Hospital for the year 2016-2017.

Sir,

I am enclosing herewith 11(eleven) copies of Notice Inviting Tender. dated __01/09/2016 and request you to kindly arrange for publication of the same in the "Times of India"(Mumbai)Ed, "The Telegraph"(Kolkata) Ed, "The Statesman"(New Delhi) Ed, "The Hindu" (Chennai) Ed & 4(four) Local Daily News Papers (A-Category)

Yours faithfully,

Director of Health Services,
Govt. of Tripura : Agartala.

Enclo: As stated above.

Copy to:-

1. The P.R.O., I.E.C. Bureau, Directorate of F.W & P.M., Govt. of Tripura, Agartala.
2. The In Charge , Receive & Dispatch Section, Health Directorate, Agartala.
3. The Directorate of Information Technology, Govt. of Tripura, ITI Road, Indranagar, Agartala with request to publish the N.I.T. in the **website www.tripura.gov.in.**
4. The Nodal Officer, Health & F/W Deptt. Agartala with request to publish the N.I.T. in the website www.health.tripura.gov.in

Director of Health Services,
Govt. of Tripura : Agartala

GOVERNMENT OF TRIPURA
DIRECTORATE OF HEALTH SERVICES

No. F. 5(1-35)/Store/DHS/2016-2017 Dated, Agartala the _01/09/2016

NOTICE INVITING TENDER

Tenders in sealed cover are hereby invited in 2(Two) bids (Technical & Financial bid) for the year 2016-17 **(Valid up to 31.03.2018)** by the Director of Health Services, Government of Tripura, Agartala on behalf of the Governor of Tripura, (A) **For major item** of equipments/instruments from resourceful, experienced, reliable and bonafied renowned, licensed **manufacture**r/**importers** for CTVS-OT and DSA Cum CATH-LAB at AGMC & GBP Hospital, Agartala. (B) **For minor** equipments/instruments tender may be floated by **manufacturer or authorized distributor.**

Details of terms & conditions of NIT & items specifications can also be downloaded from the **Website-www.helath.tripura.gov.in and www.tripura.gov.in.** The sealed tender would be received at the office of the undersigned up to **16-00** hours of **03/10/2016** by Speed Post /Registered Post / Courier service only , mentioning the name of courier service / Speed post with consignment number.

Tenders are likely to be opened on **06/10/2016**, at 11.30 AM at the office of the DHS, Govt. of Tripura, Agartala, if possible. Tenderers or their representative may remain present at the time of opening of the tenders.

On the top left side of the sealed envelope, tender inquiry number, date, and due date of receipt of tender and name & address of tenderers should be mentioned.

Director of Health Services
Government of Tripura, Agartala

GOVERNMENT OF TRIPURA
DIRECTORATE OF HEALTH SERVICES

No. F. 5(1- 35)/Store/DHS/2016-2017 Dated, Agartala the 01/09/2016

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The details specification of equipments/instruments for CTVS-OT and DSA Cum CATH-LAB is enclosed with tender form in annexure-A

The tender will remain valid up to **31-03-2018**.

TERMS AND CONDTIONS

1. Checked list :- The tenderers should be submitted the following documents with technical bid:-

Sl.No	Name of documents.	Page
1.	EMD with DD Number & name of the Banks	
2.	List of the item with specification for which rate is quoted	
3.	Self attested copy of PAN card of tenderer	
4.	Self attested copy of VAT registration certificate of tenderer.	
5.	No conviction/no pending conviction certificate attested/issued by notary for preceding 3(three) years on Rs. 100(One hundred) non Judicial (notary) stamp paper.	
6.	Authorization certificate. If any.	
7.	Valid manufacturer license / Importers license/Trade license of distributor	
8	Experience certificate/ documents of supply order should be enclosed from the Government Medical College of India where the agency supplied the items for at least 2(Two) years in the preceding 5(Five) years.	
9.	Quality Assurance Certificate like ISI, BIS, ISO, FDA or any other approved standard of manufacturer	
10.	Undertaking stating that all information furnished with the tender are true & correct and the agency will execute the full supply of the ordered quantity and they will abide by the terms & conditions of N.I.T., if their quoted rate is approved.	

2. Tender will be received by Speed Post/Registered Post/Courier Services only in sealed cover mentioning the name of courier service / Speed post with consignment number, addressed to "Director of Health Services, Government of Tripura, Gurkhabasti Complex, P.O:- Kunjaban, Agartala-799 006" up to 16.00 hours of **03/10/2016**. Tender received after the aforesaid date and hours shall be rejected. The Director of Health Services shall not remain responsible for any postal delay. Tenderer is requested to provide detailed address along with phone and fax number and S.T.D. Code No. for easier communication.

3.. On the top left side of the sealed envelope, tender inquiry number, date, and due date of receipt of tender and name & address of tenderers should be mentioned.

Details of terms & conditions of NIT & items specifications can also be downloaded from the Website-www.helath.tripura.gov.in. Tenders are likely to be opened on **06/10/2016**, at 11.30 AM at the office of the DHS, Govt. of Tripura, Agartala, if possible. Tenderers or their representative may remain present at the time of opening of the tenders.

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4.. The interested bidders shall submit the bids in two parts, namely "Financial Bid" and "Technical Bid". The 2(two) Bids should be put in 2(two) separate sealed envelope, indicating on the cover as to which one is the Technical Bid and which one is the financial Bid. The 2(two) envelopes shall, thereafter, be placed inside a large sealed cover and the same may be submitted. The Technical Bid shall contain all details regarding the item offered by the bidder, compliance of terms and Conditions, submission of documents etc. in other words, everything except the rate offered. The "Financial Bid" shall contain the rate offered by the bidder. While processing the bid the Technical Bids will be opened first and the eligible bidders meeting requirement will be short-listed. Thereafter, financial bids of only short listed bidders will be opened for consideration.

5.. Equipments/instruments for CTVS-OT and CATH-LAB Machine with detailed specification and name of manufacturer, quoted by the bidder, is to be enclosed in the Technical bid. preference will be given to the equipments with the higher and better technical specifications if user satisfy.

6.. The firm should have **service centre** either at Guwahati, Kolkata or at Agartala itself.

7.. Equipments/Instruments for CTVS-OT and CATH-LAB must be supplied directly by the manufacturers itself or by its authorized distributors and should obtain Sales Tax Clearance before delivery. An authorized representative of the firm should remain present during delivery of the ordered quantity. Authorized distributors shall have to furnish appropriate credential from the firm they represent.

8.. The supply order of Equipments/Instruments for CTVS-OT and CATH-LAB Machine must be completed within 90(Ninety) days from the date of issue of order. A penalty @ 1% on the total value shall be charged for every week or part of week of delay beyond stipulated date of supply up to maximum 10(Ten) weeks . There after supply order will be treated as cancelled.

9.. 5% of the value of ordered quantity will have to be deposited as security money by demand draft from any Nationalized Bank by the firm within 20(twenty) days time from the date issue of supply order.The Security money will be released after completion of full supply within the stipulated period or it may be kept for the next supply order whichever is applicable.

10.. The bidder will have to quote rate for 5(Five) years. CAMC(Comprehensive Annual Maintenance Contract with spare parts) after the warranty period of 5(Five) years for the items which costs above Rs.1,00,000/-(Rupees One lakh), for other items the rate of which are below Rs.1,00,000/-(Rupees One lakh) the agency shall have to provide **after sale service.** Payment of C.A.M.C. will be paid on bills basis after submission of service report from the In-Charge of respective institutions. The supplier has to execute an agreement bond with the authority for Comprehensive Annual Maintenance Contract (CAMC).

11. The approved agency has to be arranged the training for all technical staffs at least for 4(Four) weeks duration on site for major equipments by the application expert and 1(One) week for the minor equipments

12.. The Income Tax/Sales Tax will be deducted from the bill as per guideline of the Government, if applicable.

13.. Any enhancement of rate within the validity period of contract will not be considered except for imposition of any levy or increase in existing levy by the Government. Any undue request may lead to cancellation of the order.

14.. Payment of successful tenderer shall be made on bill basis only. 80% payment will be made on receipt of material and balance 20% after completion of installation of the items ordered for. No advance payment shall be made under any circumstances.

15.. In case of supply of each and every item the label of packing, should bear the inscription "Tripura Govt. Supply, Not for Sale" in indelible ink. Relaxation, if needed, is entitled as per discretion of procuring authority.

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16. The Earnest Money Deposit (EMD) for an amount of **Rs. 50,000/-(Rupees Fifty thousand**) will have to be furnished by Account payee Demand Draft only from any Nationalized Bank.in favour of the Director of Health Service Govt. of Tripura. The Earnest money shall be valid for a period of forty five (45) days beyond the validity period of tender. The E.M.D. will be released after validity period of contract in case of successful tenderer and that of unsuccessful tenderer will be released after finalization of tender.

17. Price quoted should be met F.O.R. Door delivery with installation charges at concerned health institutions for which supply order will be issued, .

18. No insurance charge is admissible and successful tenderer will be responsible for any breakage and loss in transit on way to destination.

19. Any default or breach of contract/ non-execution of supply order or If any information is found incorrect & false, shall lead to **forfeiture** of earnest money/security deposit of successful tenderers beside to such action as may be considered appropriate by the Director of Health Services, Government of Tripura including black listing/delisting the tenderers for the future. they will execute the full supply of the ordered quantity and they will abide by the terms & conditions of N.I.T., if their quoted rate is approved.

20.. Necessary electrical appliances and furniture required for installations have to be supplied by the approved firm.

21. The agency shall have to be quoted the rate on the cumulative basis i.e. basis rate + Tax+ average of five years CAMC rate. Abnormal low rate and high rate comparison to market rates will not be considered.

22.. The Director of Health Services, Government of Tripura, Agartala reserves the right to accept or reject any tender without assigning any reason thereof and tender may be accepted or rejected in part or in whole.

23.. In case of legal dispute the jurisdiction will be the Tripura High Court, Agartala

24. 5% security deposit against value of ordered quantity of items and EMD deposit at are relaxed for public sector undertaking subject of production of documents with the tender.

25.. The Director of Health Services, Govt. of Tripura, Agartala reserves the right to unilaterally terminate contract or cancel the acceptance or the rate or supply order at any time without notice before expiry or the period for which rate are now invited.

Director of Health Services,
Government of Tripura: Agartala.

LIST OF REQUIRED ITEMS FOR CARDIOTHORACIC SET-UP AT AGMC & GBPH, AGARTALA

(WITH SOME ADDITIONAL ITEMS)

A. MAJOR EQUIPMENTS: In General both US-FDA and European CE certifications are essential, unless otherwise specified for particular item.

1. Heart-Lung machine with provisions for ECMO–1 No.
2. Temperature control module (water heater/cooler)—1 No.
3. Anesthesia workstation (Boyle's apparatus for cardiac anaesthesia with Anaesthetic ventilators and high end multi-parameter monitor) —2 No.
4. C-arm mobile image intensifier—1 No.
5. ABG (arterial blood gas analyzer) machine—03 No.
6. Maneuverable Cardio-thoracic OT table—1 No.
7. Cell saver machine (for auto transfusion)—1 No.
8. IABP (intra aortic balloon pump) device—1 No.
9. Dedicated Echocardiography Machine with TEE (Trans Oesophageal Echocardiography) probe —1 No.
10. Multichannel Cardiac OT Monitors (ECG, IBP-4, NIBP, SpO2, EtCO2,cardiac output , RR, temperature-2)—2 No.
11. Composite multichannel Monitors(ECG,NIBP, IBP-2, SpO2,RR,EtCO2, Temp-2)—13 No.
12. Defibrillators with internal & external paddle—4 No.
13. Roof mounted LED OT light with camera—01 No.
14. Temporary dual chamber pacemakers—5 No.
15. Good quality Diathermy/Electrocautery machine—02 No.
16. Flexible Video bronchoscope—1 No.
17. Intubating Fibre Optic bronchoscope-1 No.
18. CRRT(Continuous Renal Replacement Therapy) machine-1 No.
19. Haemodialysis machine-1 No.
20. Central monitoring System-2 No.
21. ICU Ventilators—10 No.
22. Digital mobile X-ray machine—01 No.

B.MINOR EQUIPMENTS: In general US-FDA or European CE certifications are essential, unless otherwise specified for particular item.

23. ICU beds(Electrical &Maneuverable)—08 No.
24. ACT (activated clotting time) machine—3 No.
25. Sternotomy saw (regular & oscillating) with driving unit—2 No.
26. SLR Digital camera- 01 No.
27. ECG Machine-04 No.
28. Xenon Surgical head lights—03 No.
29. Binocular loupe 4X zoom—04 No

30.Patient warming Machine & Blanket—10 No.
31.Pulse-oxymeters-6 No.
32.Syringe pumps –60 No.
33.Laryngoscope with all size blade-10 sets
34.Ambu bag - (adult, pediatric & infant)-5 each
35.Bain Circuit-(adult & pediatric)-06 each
36.Intubating LMA(Laryneal mask airway) & bougie—5 set
37.Rigid bronchoscope-1 No
38.Central Suction machine(floor)—6 No.
39.Central Suction machine(wall mounted)—15 No.
40.X-ray LED View box(Large Screen)—08 No
41.Refrigerator-6 No.
42.Fumigation machine-6 No.
43.Computer with printer and UPS-10 No.**
44.Horizontal Square Autoclave—2 No.
45.ETO gas sterilizer-2 No.
46.ETO sealing device(to be quoted with ETO sterilizer)—2 No.
47.Formalin Chamber-6 No
48.Ultrasonic instrument washer-2 No
49.Hot air oven (for drying)-2 No
50.Automatic Washing machine and Disinfector—3 No.
51.Sequential Pneumatic Leg Compression device—10 No.
52.BIPAP machine-15 No.
53.Glucometer-15 No.
54.Nebulizer-15 No.
55.RO water plant for haemodialysis –01 No.
56.LED Examination light—03 No.
57.Nelson pot(steam inhalation)-15 No.**
58.Bed side table with locker -15 No.
59.Motorized Suction machine—10 No.
60.Electric kettle-6 No.**
61..Dressing trolley-5 No.

C. CTVS INSTRUMENTS

62. Full set of instruments for cardiovascular and thoracic surgery (Indian & Imported) and Essential Disposables.

(** SPECIFICATION not given.)

LIST OF IMPORTED INSTRUMENTS:-

Both US-FDA & European CE certifications mandatory. Stertilisation Container should be provided along with Instrument set. The container should meet international standards of quality and approved for steam sterilization procedures . Each instrument should have Unique Article Number and Manufacturer's name and manufacturing country Name printed on it. Country of origin certificate should be provided if required

1. Curved mosquito artery forceps-- 20 pc
2. TC Metzenbaum Dissecting scissors-curved(7",9")—5 each
3. TC Mayo Dissecting Scissor, Curved, 7",9 "–5 each
4. TC Valve cutting scissor 9"—3 pc
5. TC Micro tip scissors—5 pc
6. DeBakey Tissue Forceps Straight,(2mm Tip-- 6" 7", 1mm Tip--6" 7")—4 pc each
7. DeBakey Derra atraumatic side biting C-Clamp(small, Medium, large)—2 pc each
8. cooley Derra Atraumatic side biting C- Clamp(small, Medium, large)—2 pc each
9. aortic cross clamp curved(small, medium, large)—3 pc each
10. Ring tip forceps 7"—6 pc
11. Coronary probe(1mm,1.5mm,2mm,,2.50mm,)—2 pc each
12. TC(TC=Tungsten Carbide) Castroviejo needle holder, straight (5.5", 7") for 5-0,6-0, // 7-0,8-0 needles—2 pc each
13. Titanium Castroviejo needle holder, straight (5.5",7") for 5-0,6-0,//7-0,8-0 needles---01 pc each
14. Titanium spring pott's scissors(forward 60 degree and reverse cutting)7 inches---02 pc each
15. Fine curved bull-dog clamps for coronary with applicator—10 pc
16. TC Lillehei-Pott's Micro tip scissors curved(5",7",9") (TC=Tungsten Carbide)—02 pc each
17. TC Gerald micro-tip dissecting forcep ,straight, serrated 7"—04 pc
18. TC Potts-smiths Scissor Angled,(60° Angle, 125 degree reverse cutting) 7 1/4"—02 pc each
19. Fine sump suction bullet tip—04 pc
20. self retaining epicardial fat retractor(fine & small)—04 pc
21. Microtip Nerve hook—04 pc
22. Orthopedic Electric drill(Battery operated) with bit set-01pc

LIST OF INDIAN INSTRUMENTS:- ISO certification mandatory.

1. Finochietto rib spreader(Large, medium and small sizes)--2 each
2. Morse Rib spreader(double bladed) small, medium & large sizes—2 each
3. IMA retractor with detachable hooks (large and medium)—2 each
4. Self retaining chest retractor for valve (medium, small)—2 each
5. B.P. handle(no.3,4,7)—5 each
6. Towel clip(medium size)—40 pc
7. Curved artery forceps(size 3",5",7")—20 pc each
8. Straight artery forceps(size 3",5")—20 pc each
9. Curved mosquito forceps—30 pc
10. Sponge holder—10 pc
11. TC Metzenbaum Dissecting scissors-curved(7",9")—5 each
12. TC Mayo Dissecting Scissor, Curved, 7",9 "–5 each
13. TC Valve cutting scissor 9"—3 pc
14. Suture cutting scissors—10 pc
15. Tube cutting scissors—10 pc

16. TC Micro tip scissors—5 pc
17. Utility Scissor, Black, 7 1/2"—6 pc
18. Lengenbeck retractor—10 pc
19. Czerny retractor 17.5 cm—10 pc
20. Cats paw retractor—10 pc
21. Deavers retractor(large,medium, small)—5 pc each
22. Doyen retractor—3 pc
23. Allis tissue forceps(5”,6”,7”,9”)—15 pc each
24. Babcock forceps (5”, 7”)—06 pc each
25. Russian tissue forcep (7”,9”)—5 pc each
26. Kocher forceps(5”,7”)—20 pc each
27. DeBakey Tissue Forceps Straight,(2mm- 6”7”,1mm-6”7”)—6 pc each
28. Dissecting forceps straight Fine toothed(6”,7”)—5 each
29. Dissecting forceps straight non tooth (long jaw)—5 pc
30. Adson Tissue Forceps 1x2 Teeth, 4"—10 pc
31. Volsellum(9”,10”)—5 each
32. Duval Lung Forceps 1" Jaw, 8"—6 pc
33. Right angle dissecting forceps(7”,8”,9”)—3 each
34. Fine tip right angle dissector(7”)—4 pc
35. IVC passer(C-clamp)—4 pc
36. TC wire cutter—5 pc
37. Rib approximator—5 pc
38. TC bone nibbler/ valve roungers(fine tip for Valve) UP/DOWN/Straight—02 pc each
39. Frazier Suction Tube 8 French—10 pc
40. Suction Tube Stainless Steel—6 pc
41. Scapula retractor(medium size)—4 pc
42. Lung retractor—4 pc
43. Self retaining mastoid retractor (small, medium & large)—04 pc each
44. Green Retractors Fenestrated, 8 1/2"—10 pc
45. Hegar dilator set(sizes 4 to 24 double ended)—2 sets
46. Snugger rod for purse string sutures—20 pc
47. Atrium retractor with backward bend (medium & large)—2 pc each
48. VSD retractor (small size)—8 pc
49. Eye-lid retractors—12 pc
50. Suture organizers—10 pc
51. Tubing/line organizer—6 pc
52. TC Crile-Wood Needle Holders, Serrated, 10" (TC=Tungsten Carbide)—10 pc
53. TC Mayo Hegar Needle Holders, Serrated, 6"—10 pc
54. TC Mayo-Hegar Needle Holders, Serrated, 8"—10 pc
55. TC Pin Cutter Angled, Double Action, 8 1/2"—6 pc
56. TC Ryder Micro Needle Holders, Serrated, 8"—10 pc
57. TC Sternal Wire Twisters - 7"—10 pc
58. TC Lillehei-Pott’s Micro tip scissors curved(5”,7”,9”) (TC=Tungsten Carbide)—02 pc each
59. TC Gerald micro-tip dissecting forcep ,straight, serrated 7”—10 pc
60. TC Potts-smiths Scissor Angled,(60° Angle, 125 degree reverse cutting) 7 1/4"—02 pc each
61. Fine nerve hook—12 pc
62. Fine metal suction cannula (10 french)—10 pc
63. Coronary snugger rod—06 pc
64. S.S.tray(large)—20 pc
65. Wire bending & cutting Plier-04 pc

66. wire plate cutting pliers 17.5cm
67. Instrument Drum(Large-10pc, medium-06pc & small-06pc)
68. Kidney tray 12 inches-10
69. S.S.Bowls(10cm—05pc, 14 cm—05pc, 16cm—05pc, 18cm—05pc, 50cm—10pc)
70. Vein loop retractor—02 pc
71. Rib raspatory(right & left)—02 pc each
72. Periosteal Elevator—04 pc
73. Hand drill with bit set-01 pc
74. Mallet-02 pc
75. Bone chisel-02 pc
76. Orthopedic screw driver-02pc
77. Tubing clamp 18cm—20 pc
78. Ball & socket Towel Clip(5")—10 pc
79. wire basket 480x255x50mm—02 pc
80. Satinsky vasc. clamp 24cm –02 pc
81. endarterectomy stripper (2mm,3mm,4mm,6mm,8mm) x 55cm—01 each
82. varicose vein stripper with small olive—02 pc
83. Vascular spatula 3mm x 17cm slight curved--02 pc
84. Bone cutter-02 pc

LIST OF ESSENTIAL DISPOSABLES:-

1. Malleable Coronary shunts(sizes 1.25,1.5,1.75,2.0,2.25,2.5,2.75,3.0)—5 sets
2. Blower mister set—10 pc
3. Silicone ¼" tubing —10 pc
4. Cardiac stabilizing device with Chest spreader for CABG—02 pc
5. Star fish/Urchin like heart positioning device—03 pc
6. Aortic punch(size 3.5,4.0,4.5)—2 pc each
7. Pacing cable—20 pc
8. Pacing wire---10 box
9. Asepto syringe—20 pc
10. Umbilical cotton tape—20 box
11. Vascular rubber sling—20 b0x
12. Vascular liga clips (yellow,blue) with 04 sets of Applicators—30 box
13. Bone wax—10 box
14. Fogarty balloon catheter(size-3.0,4.0,5.0,6.0)—10 pc each
15. Patient warming blanket—20 box
16. Snugger tubings—20 box.

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ADDITIONAL ITEMS:

MAJOR ITEM:

63. High Frequency Oscillatory Neonatal Ventilator—01
64. . OT Boom/Pendant(for anesthesia)—01 .
65. OT Boom/Pendant(for perfusion)—01 .
66. Echocardiography machine (for OPD)--01

MINOR ITEMS:

67. Negative pressure wound therapy system.--02
68. ICU bed (manual & Height adjustable)—06
69. Over Bed table-15
70. Crash trolley/cart--05
71. Patient monitor mount-12
72. Aerosol Disinfector—04
73. Computerized Spirometer system(PFT)—01
74. syringe needle destroyer-10
75. electric sterilizer--1

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ORIGINAL SPECIFICATIONS –ITEM WISE:

EQUIPMENT SPECIFICATION:

ITEM 01. Technical Specifications for Heart Lung Machine & temperature control module:

1. 5- PUMP CONSOLE

(i) The unit should have 5-pump console compactly arranged with separate power supply and control modules. Should have easy access connectors for interchanging the pump.

(ii) Each individual roller pump should be capable of running independently on 180-270 V/50- 60 Hz supply.

(iii) Should have a spill proof base.

(iv) The unit should be supplied with a **Battery backup** for all five pumps, all safety systems and accessories for a minimum of 60 minutes. Switch over from main power to battery backup should be automatic and immediate. The battery unit should be built in to the pump base and it should be recharged automatically when the system is operating with main power supply.

(v) Individual pump heads should have Harvey Roller pumps with facility for tubing to be used, adjustable from ¼" to 5/8" through 3/8" and ½" including 1/16" for cardioplegia by easily changeable mechanism.

(vi) **At least two pumps should be able to deliver pulsatile flow**.

(vii) Individual pump heads should have digital display of the total infusion volume in litres and delivery time, the flow rates in LPM and in RPM

(viii) Each Pump should have easy mechanism for occlusion setting for different thickness of tubes available in the market, 1/32" to 3/32".

(ix) Should have unidirectional hand crank facility as a critical safety feature. Hand crank loading should be from top for faster access.

(x) The Console should have a compact base mount for the entire pump heads together, with poles and handles.

(xi) Should have variable, changeable tubing holders in each pump head: 1/4", 3/8", ½", 5/8" and double ¼".

(xii) Should have movable oxygenator holder.

(xiii) Roller pump should have a self diagnostic circuit with provision to detect and display critical alarm conditions.

(xiv) **Should have a venous control module with single pole mast with electronic venous line occluder**.

(xv) Should have a monitor mount with adjustable monitoring arm

(xvi) Instrument tray positionable with long monitoring arm

(xvii) Lightweight surface table; writing surface.

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2. MONITORS

(i) **PRESSURE MONITOR:** Facility to monitor **one arterial line pressure and one cardioplegia line pressures (total 2**); along with necessary pressure transducers, cables six (2 x 3 = 6) and domes (reusable), with accurate digital display and alarm facilities audio and visual.

(ii) **TIME MONITOR:** Facility for 4 time displays -- 2 for arterial and 2 for cardioplegia delivery. With stop, reset and start function.

(iii) **TEMPERATURE MONITOR:** 6 temperature displays for patient monitoring and for cardioplegia monitoring with digital display in Celsius with 6 necessary compatible temperature 6 probes and 6 additional probes (6x2=12 probes) with 3x2 = 6 of them for nasal, rectal and esophageal use

3. AIR- OXYGEN BLENDER

To work at 50-60 PSI for membrane oxygenator with water trap attached with necessary hoses and connections of minimum of 5 meters length and with triple flow glass flow meters.

4.SAFETY DEVICES

(i) Safety monitor should have optional capability for computer interface to retrieve perfusion data.

(ii) **ULTRASONIC AIR SENSOR**: Ultra sonic air sensor to detect bubbles to work equally well with crystalloid and blood; should be possible to fit anywhere in the circuit easily.

(iii) **LEVEL SENSOR SYSTEM:** Ultrasonic transducers to work well with crystalloid and blood with adhesive pads, with alarm settings.

5. ACCESSORIES

(i) LED lamp with flexible arm

(ii) **Stainless steel line clamps** for cardio pulmonary bypass **12** nos.

(iii) **Instrument tray with mounting arm**

(iv) **At least one thermal blanket.**

(v) **On-line measurement of PH , PCO2 & Hb for neonatal cardiac surgery (optional)**

6. SYSTEM CONFIGURATION ACCESSORIES, SPARES AND CONSUMABLES

(i) Machine cover

(ii) System should be provided with appropriate furniture like adjustable revolving chair for the perfusionist to operate the system.

(iii) The system should contain all the above accessories in Integrated or as separate accessories.

7. ENVIRONMENTAL FACTORS

(i) The unit shall be capable of operating continuously in ambient temperature of 05-45^0 C and relative humidity of 15-90%

(ii) The unit shall be capable of being stored continuously in ambient temperature of 05-45^0 C and relative humidity of 15-90%

(iii) Shall meet IEC-60601-1-2 :2001(Or Equivalent BIS) General Requirements of Safety for Electromagnetic Compatibility.

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8. POWER SUPPLY

(i) Power input to be 180-270VAC, 50-60 Hz,/440 V 3 Phase as appropriate fitted with special imported plug dedicated to the unit.
(ii) Resettable over current breaker shall be fitted for protection
(iii) Suitable Servo controlled Stabilizer/CVT**(Optional)**
(iv) UPS of suitable rating with voltage regulation and spike protection for 60 minutes back up.(Optional Accessory) **(Optional)**

9. STANDARDS ,SAFETY AND TRAINING

(i) Should be FDA or CE approved product
(ii) Electrical safety conforms to standards for electrical safety IEC-60601 / IS-13450
(iii) One engineer should be posted for a week to impart training
(iv) Manufacturer should have ISO certification for quality standards.

10. DOCUMENTATION

(i) User manual in English
(ii) Service manual in English
(iii) List of important spare parts and accessories with their part number and costing. available in stock with the supplier.
(iv) Certificate of calibration and inspection from factory.
(v) Log book with instruction for daily , weekly, monthly and quarterly maintenance checklist.
(vi) The job description of the hospital technician and company service engineer should be clearly spelt out
(vii) List of Equipments available for providing calibration and routine Preventive Maintenance Support. as per manufacturer documentation in service/technical Manual

11.provision for sevoflurane or isoflurane vapouriser.

12. OPTIONAL ITEMS

(A) One centrifugal pump including all accessories. (and consumables for five patients).

(B) Temperature control module

(i) TEMPERATURE CONTROL AND MONITOR SYSTEM WITH CARDIOPLEGIA SUPPLY AND REMOTE TEMPERATURE DISPLAY: with the following features:
(ii) Simultaneous delivery of water for **arterial and cardioplegia** heat exchangers and to **thermal blankets** to be available from suitable ports.
(iii) To work with power supply of 220± 20 V 50 Hz.
(iv) Pressure regulated blanket ports maintaining the temperature of the arterial port.
(v) Temperature display range of 0- 50° Celsius; remote accuracy of 0.3° Celsius and remote temperature display unit module with 3-temperature display.
(vi) Microprocessor based unit to control, cool, rewarm and maintain temperature.
(vii) Water outlet temperature of heat exchanger and blanket range 0-42° C.
(viii) Maximum flow performance of oxygenator heat exchanger supply port 15 – 22 LPM for fast cooling; 480mmHg maximum pressure; Blanket 1.5 to 2.5 LPM at zero head.
(ix) Built in Ice Maker to provide 50 lbs of ice in about 8 hours from 25º C water.
(x) Should be capable of providing ice water for cardioplegia independently with variable cooling rate
(xi) Rewarming facility with venous difference mode settable at 6 to 10° C gradients to hold the water bath temperature at higher than the venous blood temperature.
(xii) Temperature probe module for the operating ranges of 0-50° C.
(xiii) Temperature probes to fit in standard oxygenators (bubble / membrane)

(xiv) Optional remote control unit should be capable of taking 9 Temp. Probes and display temperature in digital readouts. Alarm limits setting for at least three probes at crucial sites.

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ITEM 03.Anesthesia Workstation (anesthesia machine with ventilator and monitor):

• Anesthesia System should be a 3 gas (O2, N2O and medical grade air)) with triple cascaded Flow Tubes for low flow concept.
• Mechanical Hypoxic guard to ensure 25% O2 Concentration.
• Anesthesia system should be with integrated Anesthesia Ventilator with volume controlled ventilation mode and pressure control ventilation mode.
• Integrated Compact breathing system with Latex free and autoclavable bellows and autoclabable soda lime canister with 800 ml capacity.
• Color LCD Display with 5.6" Screen size, with waveforms of Airway pressure & Flow waveforms, Exhaled Vte.
• Pressure/Volume & FiO2 Monitoring, with audio and visual alarms along with Airway Pressure gauge.
• Changeover Knob for Mechanical to manual ventilation.
• Should be compatible with open and semi closed circuits.
• Three Drawers with huge space for keeping the patient circuits and other accessories.
• Seletatec mounting of upto Two vaporizers provision, but equipment should be supplied with 1 vaporizer - isoflurane.
• Local support facilities should be available and should be mentioned with the details of support engineers with their contact nos.
Technical Specifications:
• Oxygen failure supply alarm - O2 supply stops by less than 220 Kpa
• Oxygen and air flow range : 0.1 litre to 10 L/min
• N2O Flow Range : 0.1 litre to 10 L/min
• N2O cut off system and alarm functions : Yes
• Pin Indexed Yoke : 1 x O2 and 1 x N2O
• Pipeline Inlet connections with suitable indexed connectors for non interchangeable between O2 , N2O and air
ANESTHESIA VENTILATOR
• Type : Integrated
• Drive Method : Proportional Solenoid Valve by Electronic Control.
• Vent Type : Rising Bellows
• Vent Mode : Volume Controlled/ Manual and pressure controlled
• Tidal Volume : 50 ml to 1500 ml
• Rate : 4 to 60/min
• I:E Ratio : 2:1 to 1:5
• Inspiratory Flow : 2 to 70 l/min, mechanically adjusted.
• Back up battery : Minimum of 6 hrs.
• Monitoring : Tidal Volume/Minute Volume/Resp rate/ Airway pressure
FiO2%/Flow Curve and Pressure Curve.

ITEM 04. C-ARM MOBILE IMAGE INTENSIFIER (C-arm) –

Technical Specification I. X-RAY GENERATOR i. Type: High Frequency minimum 20 Khz. ii. Fluoroscopy anode potential: 40 to 110Kvp (1Kvp step) iii. Fluoroscopy mA range: Normal mode : 0.5 to 4 mA iv. Power: 1.4 Kw II. X-RAY TUBE i. Should be of reputed make ii. Type: Stationary anode/Rotating

anode iii. Focal spot:0.5/1.5mm III. IMAGE INTENSIFIER i. Should be of reputed make (Thales/Toshiba) ii. Input field size maximum 9”(Triple field) iii. Grid on the entrance field: circular grid. IV. TV CAMERA SYSTEM i. Type: CCD with 752x582 pixels. ii. Memory: Minimum 25 images non-volatile storage. iii. Video Standard: PAL/NTSC V. TV monitor i. Two 17” /18”/19”or more LCD/TFT monitors ii. One for LIH and one for memory display. iii. Should have a viewing angle of 170 degree or more. VI. C-ARM CART i. SID: 880mm ii. Orbital Travel: 115º (90/25) iii. C-arm Pivotal rotation: ±180º iv. Horizontal Travel: 200mm v. Vertical Travel: 400mm vi. Panning Movement: ±10º vii. Depth of C-arm: 600mm VII. OTHER SPECIFICATONS The unit should have the following facilities i. Automatic KV and mA technique selection and manual mode ii. Cumulative exposure timer for fluoroscopy iii. Audible and Visual indication for X-ray emission. iv. 360 degree rotations of images should be possible for LIH and memory image after fluoroscopy (without radiation). v. Image vertical and horizontal reversal should be possible on the LIH image after fluoroscopy (without radiation). vi. Should not be a Personal Computer based system. vii. Iris collimation or two pairs of parallel shutters which can be controlled independently and can be rotated. viii. Should have at least 20cm distance between the focal spot and skin for radiation safety. ix. Should have a single / double steering wheel with 180º rotation. x. Two sets of sterile drape for the X-ray tube assembly, Image intensifier and C-arm and clips to hold the drape on the c-arm should be provided. xi. Cassette holder should be supplied. xii. Five lead aprons with thyroid guards xiii. The quoted model and tube should be AERB type approved. Relevant copies of the certificate should be attached with the bid. xiv. Should have a facility to export images to a flash memory (USB port). VIII. POWER REQUIREMENTS i. Single phase , 230 Vac, 50Hz ii. Suitable stabilizer should be provided along with the unit. IX. SPECIFICATION OF LEAD APRON. i. Should be AERB approved. ii. Should be light weight 0.5mm lead equivalent. iii. Should be hook and loop type (Velcro). iv. Should be supplied along with thyroid guard.

ITEM 05. Arterial Blood Gas Analyzer:

1. Should be able to measure directly PH, PCO2, PO2, Sodium, Potassium, Chloride, and Calcium in a single run. 2. Should have minimum 15 calculated parameters including SaO2,Bi-carbonate (HCO3), lactate levels and blood glucose level.Standard HCO3, Base Excess of Blood (BE), Base Excess of extra cellular fluid 3. Should have a sample through put of minimum 30 samples per hour 4. Should have an automatic calibration for all the measured parameters without the use of gas cylinder 5. Electrode should be individual with ON/OFF facility and durable. 6. Should have an inbuilt printer and minimum inbuilt memory of 100 samples 7. Warm up time should be less than 30 minutes 8. Reagent pack for doing 1000 test, one deprotieniser of 125 ml, printer paper and one three level quality control of 5ml. 9. Should work on 200-240Vac 50Hz power supply. 10.Should be supplied with on line pure sine wave UPS of sufficient capacity for a minimum back of 30 minutes. 11.Should be provided with calibration certificate issued by the manufacturer at the time of installation and calibration certificate should be issued for the machine by the supplier during preventive maintenance visit in the warranty/AMC period if demanded by the end user. 12.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. 13.All types of electrodes supplied initially shall have one year warranty and there after any types of electrodes supplied shall have six months warranty. 14.Reagents supplied should have at least six months shelf life. 15.All consumables should have at least 45 days on-board stability.

ITEM 06.Operating Table (Multifunction, electric/hydraulic driven):

Operating table for carrying out treatments, dressing interventions and operations of general surgery (3-4 surgeries daily). All exposed metallic parts shall be made from stainless, acid proof steel. The table base shall be mobile and shall have central brakes Back rest and leg rest inclination angle, Trendelenburg and reverseTrendelenburg positions and height adjustment of the table top shall be activated by electro - hydraulic system The table top shall be translucent for x-rays with 5 separate Sections Table top length approximately 2000 mmTable top width approximately 600mm Minimal height of the table 750mm Maximal height of the table 1100mm indicatively Trendelenburg at least 25º Reverse Trendelenburg at least 25º Lateral tilt at least 18º Back rest inclination angle at least +55º to -25º Head rest inclination angle at least 45º up Head rest inclination angle at least 20º down Power requirements 220 VAC ±10 % , 50Hz Accessories: Anaesthetic Screen with clamp with telescopic tubes : 1 Body restraint Strap with clamp : 1

Padded Shoulder supports : 2 Padded Leg support with swivel type clamp : 2 Padded arm Rests 450 -500 mm long with two arm Clamps : 2 Padded Lateral support with universal attachment Clamp : 2 Padded rubber mattresses with Anti Microbial agent incorporated into all components that assists in Prohibiting growth of bacteria & fungi and easy to clean and maintain and of at least of 1" thickness : 2 X5 Sections Head rest , I.V drip Stands attachable to the table Environmental factors: The unit shall be capable of being stored continuously in ambient temperature of 0 - 50deg C and relative humidity of 15-90% The unit shall be capable of operating continuously in ambient temperature of 10 -40 deg C and relative humidity of 15-90% Standards CE; EC Marked US FDA; ISO certification.

ITEM 07. CELL SAVER MACHINE (for auto-transfusion):

Name of the Item: PURCHASE OF Blood Cell Saver Blood Cell saver system- One 1 Description of Function 1.1 The cell saver system reprocesses blood for the patient and separates it into blood cells and plasma. Used in Surgical procedures in which there is rapid bleeding or high volume blood loss. It can also separate and remove clotting agents for the plasma. In this manner, blood may be prepared for long term storage or may be re-infused back into the patient during surgery. This reduces the need for blood from donors. 2 Operational Requirements 2.1 Manual & Automatic operation 2.2 Compact, portable design 3 Technical Specifications 3.1 Spinning centrifuge 3.2 Built-in programming 3.3 Built-in safety features 3.4 Sound volume control 3.5 Automatic protocols 4 System Configuration Accessories, spares and consumables 4.1 System as specified- 4.2 30 disposables should be provided with equipment 4.3 All consumables required for installation and standardization of system to be given free of cost. 5 Environmental factors 5.1 The unit shall be capable of being stored continuously in ambient temperature of 0 - 50deg C and relative humidity of 15-90% 5.2 The unit shall be capable of operating continuously in ambient temperature of 10 - 40deg C and relative humidity of 15-90% 6 Power Supply 6.1 Power input to be 180-270VAC, 50Hz fitted with Indian plug 6.2 UPS of suitable rating with voltage regulation and spike protection for 60 minutes back up. 7 Standards, Safety and Training 7.1 Should be FDA , CE or BIS approved product 7.2 Electrical safety conforms to standards for electrical safety IEC-60601-1 General Requirements 7.3 Manufacturer/Supplier should have ISO certification for quality standards. 7.4 Comprehensive training for lab staff and support services till familiarity with the system. 8 Documentation 8.1 User/Technical/Maintenance manuals to be supplied in English. 8.2 Certificate of calibration and inspection. 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 spare parts and accessories with their part number and costing. 8.5 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. ***** 4 ANNEXURE – II

ITEM 08.SPECIFICATION FOR INTRA AORTIC BALOON PUMP :

1. Latest generation IABP System. 2. Transportable, Compact IABP system with minimum 3 Hours of Battery Backup 3. Fast Pneumatics to provide accurate & reliable ventricular support enhancing augmentation & improved after – load reduction. Preferably a compressor based system for better drive-gas shuttle speed. 4. System should automatically re-calibrate fiber optic sensor in vivo every two hours. 5. Fiber optic pressure signal out-put should be available in addition to pressure monitoring site for external monitor to eliminates need for additional pressure monitoring site & transducer 6. Should have 3modes of operation, 1) Automatic, 2) Semi Automatic, 3) Manual. 7. System Should be capable of automatically selecting appropripriate Trigger i.e 1) ECG or 2) Pressure and also accurately select the inflation and Deflataion point, in Automatic Mode.3) Trigger on pacer (V pace, A pace) 4)Automatic internal trigger rate 5) A fib mode . 8. In Automatic mode of operation user should be in control of the deflation point. 9. In Automatic and Semiautomatic Mode., Single ECG Triggle should be able to track various Ventricular and Atrial Arrythmia including VE`s, Bigeminy, Trigeminy, Couplets ect and Atrial Fibrillation, without any user intervention, and still give optimal performance. 10. In Automatic and Semiautomatic Mode , Advance Software should automatically adapt the timings for various rhythms and rate variations, without any user intervention. 11. In Automatic and Semiautomatic,, it should atomically identify Atrial Fibrillation & adopt R- Wave deflation mode for better patient support, without any user intervention. 12. Should be able to trigger on 7 mmhg of Pulse Pressure when used in Pressure Trigger mode . 13. Single Key Start- up to Make it fast, user friendly and easy to use 14. Should be able to display at least 3 waveform as ECG, Invasive Pressure and Balloon Pressure waveform 15. Large Detachable Display for brighter & very good

visibility from a distance in any lighting conditions. 16. On screen indication for Helium level in the cylinder & Battery level for timely intervention and correction. 17. ECG Inflation Marker to indicate inflation period on ECG which can be useful when arterial pressure waveform is not available. 18. On screen indication of standby time and should give alarm after 20 mins, to draw user`s attention on the system being on standby. 19. System should be approved for use on all types of adult patient. 20. Alteast 5 lead ECG Skin cable input + Fiber optic signal input if fiberoptic balloon used. 21. Blood back defect for early indication of blood coming into the balloon lumen due to IABP leak. 22. Should give extensive help message to correct the alarm conditions that are specific to the alarm condition, This should help the user to over the alarm problem immediately and with ease. 23. Should be capable of removing condensation automatically without user intervention, and should be maintenance free. 24. Should have Peripheral Vascular Doppler for cheking Limb lschemia, which is tethered to the main equipment. 25. Should have automatic Altitude correction to make it safer for use during Air Transport. 26. In-built Comprehensive Service Diagnostics to help the technician to locate the fault immediately. 27. Should have capacity to connect on the hospital network. 28. System should be supplied with the following: • .ECG Cable with Leadwires : 2set • Invasive Blood Pressure Transducer : 10no.(7nos. of ordinary balloons & 3nos. of Fibreoptic balloons) Refillable Helium Cylinder compatible with the IABP system Helium(or other) GAS cylinders 2 Nos. certificate from explosives Dept. • Intra Aortic Balloon Catheter ordinary (not fiber optic) for Adult, size 40cc Qty : 5no • Intra Aortic Balloon Catheter adult for size 34cc Qty : 5no 29. IABP Machine should be compatible with both – fiber optic balloon, as well as the ordinary balloon system. 30. Entire unit should be mounted on rugged elegant cart-easy for mobility transport. 31. LCD display flat screen. 32. Advanced help screen with advise on probable cause of an alarm and its corrective actions. 33. Local after sales service must advance available and assured availability of spares for ten yrs. 34. Should be provided with service manual and operator manual. 35. Current International Technology model should be quoted. 36. Machine should be virgin and no refurbish unit shall be supplied. 37. Power supply- 230 V + 15%, 50 Hz + 3%. & rechargeable battery pack with inbuilt battery charger. 38. Tropicalisation : Operating room temp. up to 40ºC Storage room temp. up to 60ºC Relative Humidity up to 90% Non condensing 39. Operating and Detailed service manual with circuit diagram should be supplied with the equipment.

ITEM 09.

HIGH END PREMIUM ECHOCARDIOGRAPHY MACHINE with TEE probe
Description
System should be a state-of-the-art, high-end fully digital color doppler echocardiography system with (standalone - trolley based)
System should have open architecture & must be capable of 1024 or more channels for future develop
System should have multi array probe technology for Phased Array, Linear Phased Array & Curved Ph should be pin less connectors
The system shall be capable of providing the following imaging & operating modes:
B, M, LPRF, HPRF, CW, Color Angio, Tissue Doppler, Fully Steerable Pulsed Doppler
Fully steerable Continuous Wave Doppler having facility of **both 2D & 3D images mode**
Digital Cine Replay of all imaging & doppler modalities
Onscreen image clipboard storage & image recall

Digital Image Storage & Patient Archive with true scanner frame rates. When recall the images should measurement & analysis capabilities
Should be capable of doing M mode in real time / stored images & also should have a post processing cursor.
Should have Tissue Doppler
System should have B Flow & Compound imaging for better resolution as option
System should support Speckle reducing imaging for the uniform image quality across al the probes
Should have a built-in digital archival system for image storage & archival with reporting facilities. The with true frame rates
Should have an advanced Stress Echo package capable of acquiring & display of images at true scan
Should have a Digital Stress Echo package capable of acquiring & display of images at true scanner fr
Both Pharmacological & Exercise stress exam capabilities
Possibility to modify & create protocol templates
Image acquisition, review, wall segment scoring & reporting
Stress exercise with upto 2 minutes of continuous storage
Possibility of extensive post-processing of images under review
Upto 10 stress levels
Zoom capbility in Stress Echo Review
Should be able to use the TVI & Quantification while during the stress
Should have facility of ratable M mode in Tissue Doppler online & offline
Should have at least five frequencies in Tissue Harmonic Imaging in all imaging modes like B, M, PW,
Should have built-in CD / DVD Writer for directly writing images on CD / DVD. Also system should sup on Pen Drive
Should have 17" high resolution TFT Monitor
Should have a hi-fi Pan Zoom capability with live / frozen / stored images& should have capability of zo
Should be DICOM 3 compliant & export of images to MOD DICOM Media (Optional)
Should be directly compatible with color inkjet printers
Digital Cine Replay, allowing to store & replay ultrasound images including 2D, Color, Color Angio, Do the user to change gain, contrast, sweep speed, base line etc image parameters
Keyboard should be flexible, it should move Up / Down & Up / Down
System should be less weight & ergonomically designed

Should have a display of single, dual or quad images side by side
Software-driven, backlit & illuminated digital touch panel, assignable rotary knobs & keys for easy mod
System should be able to upgrade for advance future like strain & strain rate, 2D (Speckle Tracking) S
System should be able to upgrade for the advance feature for CRT evaluation should have the parame Peak to systole time (Option)
Should be quoted with Following Transducers:(Atleast 4 active probe ports are required):
Adult Cardiac Phased Array Transducer (wideband): 1 No
Pediatric Cardiac Phased Array Transducer (wideband): 1 No
Neonatal Cardiac Phased Array Probe (Wide band): 1 No
5 /10 MHz Linear Probe for vascular studies: 1 Nos.
Adult Trans-oesophageal echo probe: 1 No
Pediatric trans-oesophageal echo probe:1 No

Colour printer-one
Suitable UPS with 30 minutes backup time
Warranty for the above system & configuration should be offered with 5 years from the date of installat quoted for next 5 years after the warranty which will be considered for evaluation purpose of the bidde
Demonstration of the quoted model should be provided when asked for
The quoted model for should have CE & FDA certifications for quality & also it should have all the cert the equipment
The installation base list of the quoted model to be submitted by the bidder

ITEM 10.Multiparameter Monitor-ICU/OT/CATH-LAB:

• Eight channel high resolution colour TFT display with 12.1" screen size and auto spacing
• User Selectable Display formats and waveform colours.
• ECG monitoring - 3/5 lead with cascade waveform facility, monitoring, diagnostic

and OT modes of monitoring ECG, selectable Arrhythmia detection. Multi - lead ECG Monitoring (Simultaneous monitoring of 7 ECG leads), 12 lead Monitoring option. ECG recorder inbuilt with recording paper mandatory.
• ST segment analysis should be possible for simultaneous three leads.
• Drug Dose calculation.
• Pulse Oximetry (SpO2) Branded Nellcor Technology. Display pf plethysmograph with perfusion level indicator and SpO2 values. SpO2 range 1-100%.
• Non Invasive Blood Pressure (NIBP)
Oscillometric method for adult, child and neonate. Measurement and display of systolic, diastolic and mean pressure values of NIBP measurement.
• User selectable alarm settings.
• Mode : manual, STAT (Continuous 5 minute operation) and automatic (selectable
time interval 2-90 minutes)
• Dual Temperature - with two units (°C and °F) selectable.
• Temp Range -) - 50 Degree C. Option for differential temperature should be provided.
• Respiration: Respiratory rate 1-150bpm, sourced through ECG Cable or Carbon di oxide. Apnea alarms should be provided.
• Latest Microstream Capnography with Capnogram display and digital display for EtCO2, Inspired concentration of carbon-DI-oxide
and respiratory rate.
• Four Invasive Blood Pressure - facility for monitoring four invasive BP with waveform simultaneously IBP Range -4o to 300mm Hg. Overlapping facility.
• OPTIONAL FEATURES
1. Upgradable cardiac output - Thermo dilution method for continuous CO2 monitoring.
2. Future upgradable Anesthesia Gas Monitoring (AGM)
• COMPULSORY FEATURES
1. 72 hours non-volatile graphical/Tubular trends with zoom facility and separate dedicated trend for storing minimum 200 NIBP readings.
2. Should have multiple patient data storage facility (minimum 50 patients).
3. Should have graded and color coded visual/audio alarms.
4. Defibrillation and Cautery protection should be provided.
5. Should have IR remote facility.
6.Should be inbuilt dual channel thermal array recorder
7.Conforming to International standards-ICE 601-1, CE certification, US FDA.
Should be supplied with
(a) One 5 lead ECG Cable - 1 No.
(b) Adult sensor - 1 No.
(c) NIBP Cuffs (each one for Adult, Child and Neonatal applications), 2 Nos.
IBP reusable cable and 10 Nos, Disposable Transducer Kit, EtCO2 Monitor - Standard Accessories.

ITEM 12.Defibrillator:

•Biphasic Waveform display (min 2)
•External energy selection from 2J to 200 J biphasic.
•Charging time less than 8 secs @ 200J (with a charged Battery)
•Synchronizer and cardioversion.
•Unique disarm button (in addition to automatic time display)
•Should come with 3 lead ECG that can be measured from cables, adult external paddles, pediatric paddles.
•Heart Rate: 20 to 300 bpm with user selectable alarms.

•Should have external pacing, demand and asynchronous modes.
•Should have ability to show real heart rate without interrupting external pacing.
•Should display CPR in real time.
•Should have large internal memory that stores and prints 25 ECG events.
•Battery to last not less than 2 hours of continuous ECG monitoring or 30 full energy discharges.
•Should have facility to monitor ET CO2 SpO2 and NIBP.
•Battery indicator on display and self test on battery.
ACCESSORIES
•Paddles with remote energy selection, charge and discharge buttons on paddles.
•Pediatric padles adapters (set of 2)
•A/c 240 v V50 hz charger and mains power source.
•Adult paddles and test paddles.
•One Spare Battery.
•Roll of 50mm recording paper x 10 rolls.
•5 oz tube of defibrillation gel X 5 tubes.
•ECG Cables with leads 1 set.
•External disposable defibrillation cum pacing pad with CPR sensors - 5 Sets.
•Operation Manual, Service Manual complete.
•The equipment should be CE certified/US FDA approved.

ITEM 13. OT LIGHT –LED with camera :

Should be a Surgical Light unit incorporating the latest LED technology shadowless operating light field with the following specifications. 1. Should have Single Colour high performance LEDs with life time more than 40,000 hours. 2. Should be a dual dome and the main light and satellite should have the following specifications a. LUX intensity 1,40,000 Lux & Satellite 1,40,000 Lux or above. b. Light Field diameter shall be above 24 cm or better c. Colour temperature should be between 4000 to 4500 degree K d. Colour rendering index should not be less than 95 e. Depth of illumination should not be less than 100 cm. f. Illumination adjustment 30% to 100% g. One of the dome shall have high definition 1080 lines resolution camera with optical zoom and focus adjustment. The camera control functions shall be either with remote control / wall control panel / dome / arm. The output of the camera shall be taken out and connected to the monitor / TV provided by the user institution (Maximum distance: 100meters) h. The light dome shall be compatible for laminar air flow. 3. Should have stable illumination throughout the life period of the light. If the intensity reduces during the warranty or CMC period the LEDs has to be replaced at free of cost if required. 4. The LED's must be of a single color suitable for long term maintenance and ease of replacement. 5. Temperature rise at the surgeon head level should be less than 2 degree C. 6. Should have control panel for light focusing adjustment fixed on the dome or arms. 7. Should supply autoclavable handles 3 Nos for each dome. 8. Unit should function with 200-240Vac, 50/60 Hz input power supply. 9. 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. 10.The intensity of light should be uniform during the surgery. 11.The cost for Recording Device (DVD writer, 1 TB Memory of reputed make) shall be provided as option as per the Annexure attached herewith. The rate offered shall not be taken for evaluation. III. The cost for third arm with monitor stand with cables for video and power supply shall be provided as option. The rate offered shall not be taken for evaluation.

ITEM 14. Temporary pacemaker:

Range, ppm (PACE)	30-200
Graduation interval (PACE)	2/5 ppm {value text} please see comments2 ppm for 50-100, 5 ppm for 30-50 and

	100-200
Precision (WAVELENGTH, nm)	5% please see comments.
Rapid atrial pacing, ppm (PACE)	To 800 please see comments.
Battery (POWER NEEDED)	
Type (CONFIGURATION)	9 V alkaline/lithium
Duration,hr. (BATTERY)	216-384 typical at 70 ppm, 10 mA
Low-battery signal (BATTERIES)	Yes
DIMENSIONS (HXWXD) CM, (IN) (DISPLAY)	21.2 x 8.1 x 3.6 (8.3 x 3.2 x 1.4)
WEIGHT, g (oz) (BATTERY)	510 (18)
OFF CONTROL SAFEGUARD (BATTERY)	Control lockout
EXTENDER CABLE (BATTERY)	Optional
Meets fda safety-lead performance standard (BATTERY)	Yes
AMPLITUDE	
Atrium (AMPLITUDE)	0.1-20 mA
Ventricle (AMPLITUDE)	0.1-25 mA
PULSE WIDTH, msec	
Atrium (AMPLITUDE)	1
Ventricle (AMPLITUDE)	5-6
Sensitivity, mv	
Atrium (AMPLITUDE)	0.4-10
Ventricle (AMPLITUDE)	0.8-20
REFRACTORY PERIOD, msec	
Atrium (AMPLITUDE)	150-500
Ventricle (AMPLITUDE)	250
A-V SEQUENTIAL DELAY, msec (REFRACTORY PERIOD, msec)	20-300
STRAP HOLDER (BATTERY)	Yes
STERILIZATION TEMP. LIMIT, C (BATTERY)	52
DEFIBRILLATION SAFEGUARD (REFRACTORY PERIOD, msec)	Yes
SENSE/PACE SIGNAL (REFRACTORY PERIOD, msec)	Yes/yes

PACING MODES	
CHAMBERS	Dual
Responses (PACING MODES)	Asynchronous, inhibited
Naspe/bpeg codes (PACING MODES)	DDD, DDI, DVI, DOO please see comments for moreDDD, DDI, DVI, DOO, VVI, VOO, AAI, AOO
ADDITIONAL ATTRIBUTES (MICROMANIPULATORS)	Ventricular safety pacing; 1-key emergency DOO; automatic parameter (upper rate, A-V interval, PVARP) adjustment with rate changes; accepts cables with nonexposed pins.
FDA CLEARANCE (Interference compensation)	Yes
CE MARK (MDD) (Interference compensation)	Yes
MARKETING REGION (Interference compensation)	Worldwide

ITEM 15. Electrosurgical Unit/Diathermy (Monopolar-bipolar) :

HF electrosurgical unit shall be used to execute monopolar and bipolar surgery in many fields of application where high precision and reliability are essential Outputs of cut, coagulate and blend Maximum output 300 W for monopolar cut Activation : Double pedal switch which may be used for the monopolar and bipolar functions . Hand-switch handle Bipolar electrode with pedal switch or with automatic Start/Stop system (for coagulation only) Control The Unit shall stop automatically in case of internal error which shall be identified on Display and with audible alarm Memorization : User shall be able to use at least 4 working programs Safety : Neutral plate safety circuit shall control connections and contacts of Neutral Plate with Tissues: Defective Contact shall be notified with visual Alarm and immediate reducing of power Output circuit : floating - protected against defibrillator interferences . Shall have HF leakages less than 150mA through each electrode Power Supply : 220VAC, 50Hz Cooling: convection without fan Accessories : Single-use two button Handle , Autoclavable Handle shall be provided with a 3 Pins socket that shall fit majority of bipolar electrosurgical units Operative Foot-switch (usable as alternative to handle) Reusable neutral Plate Kit of 10 short autoclavable Electrodes Electrode wire - straight Electrode wire -

angled 45° Electrode bend - 0 4 - straight Electrode bend - 0 8 - straight Electrode hook - angled 45° Electrode wire 1 mm.- angled 45° Electrode straight slip-knot - straight Electrode angled slip-knot - straight Electrode ball point - 0 3 mm. - angled 45° Electrode ball point - 0 3 mm. – straight Bipolar Forceps : 6 Forceps shall be provided with a standard European connection Straight Forceps - 18 cm. (7"). Curved Forceps - 18 cm. (7") Curved Forceps - 20 cm. (7 3/4") Bayonet Forceps - 18 cm. (7") Bayonet Forceps - 20 cm. (7 3/4") Straight Forceps - 20 cm. (7 3/4") Cable, Bipolar Adaptor, Bipolar Cable User Manual Standards CE; EC Marked US FDA; ISO certification

ITEM 16.Technical specification of Pediatric Video bronchoscope :

Make Model Should be USFDA & CE/IEC Approved Technical specifications 1. Latest colour CCD chip technology built into the distal end 2. Superb Image quality 3. Easy to pass Endo-Therapy accessories including a balloon-equipped ultrasonic probe and various electrosurgical accessories 4. Good suction quality 5. Light weight. 6. Other characteristics: a) Field of view should be 120 degrees or more b) Depth of field should be 3-50 mm or better c) Distal end diameter should be 4.9mm or less d) Insert tube diameter should be 4.9mm or less e) Channel diameter should be 2.2 mm or less f) Should be light weight and easy to use g) Working length should be 600 mm or more h) Total length should be 890 mm or better i) UP and DOWN angulation should be 180 degrees and 130 degrees respectively or better j) Should have telescopic eye piece k) Can be fully immersed in disinfectant solution and water l) Should have autoclavable suction valve to avoid cross-contamintaion risk m) Should hve facility to check leakage by automatic pressure regulated leak tester n) Should be compatible with 150 W halogen light source 7. Good ergometeric design with simple easy to remember configuration of switches in control section facilitating single handed operation 8. Biopsy port should be below control section 9. Minimum number of remote switches on the Scope (Four). 10. Compatibility with different kind of light source 11. Automatic leakage testing facility (not pressure gauge type) 12. Fully immersible in disinfection solution. 13. Detachable accessories either preferably Autoclavable or disposable. 14. Exterior designed to minimize surface protrusions and Interior design should be simplified 15. Joint less channel configuration 16. The scope should be fully insulated to minimize any potential risk during electrocautery. 17. Standard accessories should be supplied. The accessories should be usable with other video bronchoscopes and fibreoptic bronchoscopes. 18. Video imaging system/Camera a) ¼" single chip camera with RGBb) Delivering high-resolution images and true to life colour reproduction for accuracy c) Video signal processing system boosting signal-to-noise ratio and reduces noise for clear and sharp images d) Full height display mode filling the screen vertically to provide much larger images without distortion e) More compact and slim design to and ability to fit in a compact cart occupying less space f) Large and clearly marked switches g) Capable of storing at least 40 patients' data in the form of: i) Id number ii) Patient's name iii) Sex iv) Age v) Date of birth vi) Date and time(Built in clock/stop watch) vii) Frame number viii) Picture quality selection ix) Physician x) Comments h) Image storage and retrieval settings on the front panel i) Ability to retain even when the power is tuned off (Colour, structure enhancement, white balance, iris etc.) j) It should have Image size selection capability k) Edge enhancement level can be switched between "Low", "Medium", and "High" l) It should have Image Freezing capability on the scope m) Video signal output VBS composite, Y/C, RGB, simultaneous output possible n) White balance can be performed by switch on front panel o) Colour tone adjustment "R" control ± 7 steps, "B" control ± 7 steps. p) Iris mode selection-Normal observation Peak: When focusing on and /or observing a small bright area q) Supply of Software and Hardware to facilitate accurate image display, storage of large number of data for future reference and printouts. r) Type and degree of protection against electric shock : i) Class I ii) Type BF applied part iii) Voltage, frequency, Input current, Fuse rating compatible with Indian conditions 1. The Light Source a) Easy to use b)Portable, light weight, compact c) It should be an independent module, separate from other parts of endoscopic system/ Video processor d)Lamp 150 watt and approximate life 50 hours of continuous use e) Ignition by switching regulator f) Light path diaphragm control g) Cooling should be forced air h) Instant connection with other fibre scopes where adaptors should not be required i) Pump should be built in and should supply a stable flow of either air or water for procedures, leak testing, or cleaning j) It should provide bright colour balanced illumination k) Type and degree of protection against electric shock: i) class I ii) type BF iii) Voltage, frequency, input as per Indian conditions iv) voltage fluctuation within ±10% v) relative humidity 30-75% 2. Colour Monitor a) 15" or more Medical Grade Colour Monitor 3. Leakage Tester a) With safety valve 4. Machine should be covered under 3 year warranty 5. List of consumables if any with price frozen for 5 years should be quoted separately. 6. Bidder should submit point wise compliance statement 7. Should have minimum running cost , please quote cost of a) Consumables b) AMC & CMC.

ITEM 17.Fibreoptic bronchoscope:

Optical System Field of view: 100°÷ 120° Depth of field: 3÷50 mm. Distal end Bending Section Range of tip bending: not less than Up 180°, Down 130°. Insertion tube Outer diameter: not more than 5.0mm Working length: not less than 600mm. Total lenhgth: not more than 900mm. Instrument channel Inner diameter: not less than 2.0mm. Light Source Mobile Lamp Type:Quartz halogen. Output: 150W. Cooling fan prolongs lamp life not less than 500 hours. Air/Water functions available Power consumption:not more than 250 W. Power Requirements - 220 ± 10% V. 50 Hz. standard network Weight: not more than 6 kg.

ITEM 18. CRRT Machine SPECIFICATION :

l. Treatment Mode |) SCUP(Slow Continuous Ultrafiltration) 2) CVVH(ContinuousVeno-VenousHclmofiltration) 3) CWHD(ContinuousVeno-VenousHemodialysis) 4) CwHDF(Continuous Veno-Venous Hemodiafiltration) 5) HP(Hemopertusion) 2. Pump for Treatment l) Blood Pump 2) Dialysate Pump 3) Substituate Pump 4) Filtrate Pump 3. Safety I) Electric shock protection - T)?e CF or Type BF 2) Battery backup l5min or Optional 4. Accumcy - Precise & stable gravimetric system or gravimetric balancing system 5. Flexibility l) Wide range of therapi€s 2) Cassette system and fihers 6. Easy Operation l) Color screen 2) Guided operation and integratod HELP function T.optimal|y designed to carry out highly eflicient therapies in the nephroJogical and intensive care environment B, Specifications l. Dimension and weight l) Height l50cm or l62cm 2) Width 46cm or 49cm 3) Depth 60cm 4) weight 80ke or 60kg 2. Electrical Data l) Supply l0O/120/230/240V AC + l07q 50/60H2 or 100-240Y AC + 5!" 50l60Rz 2) Current cansumption max. 1.2 A(230V) or 2.5A(240V) 3. Electric Safety l) Type of protoction Safety class I against electric shock 2) DeCree of protection Type CF against electricc shock or Type BF 4. Flow rates (depending on treatment mode) l) Blood flow 0,l0 - 500m1/min +107o or l0 - 450mVmin +l0olo 2) Substituatc flow 0,600 - 9600m1/hr, regulated or 100 - 8000m1'ftr 3i Dialysate flow 0,600 - 9600m1/hr, regulated or 100 - 8000m1/hr 4) Plasma exchange rate 0, I 0 - 5omumin, regulated 5) Ultra filtration rate 0 - 6000ml/hr, regulated or 0 - 2000myhr 5. Balancing l) Number of scales 4 or 3 2) Measuring principlegraYimetric 3) Max. load on scale 12 kg or I lkg 4) Resolution lg 5) Deviation in lineadty max. +l7o 6. Heating l) Substituate temperature up to 39'C or 40oC 2) Dialysis fluid temporature up to 39"C or 40oC 7. Features |) Screen I 0.4", TFT-LCD or High Resolution Color sqeen 2) Service menu setting via screen 8, Extracorporeal blood circuit and protoctive systems l) Arterial pressure monitoring - Display range -280 to +300 mmHg or -250 to +300mmHg - Acturacy + | ommHg or +8mmHg 2) Venous pressure monitoring - Display range -80 to +500 mmHg or -50 to +350mmHg - Accuracy +lommHg or +8mmHg 3) Transmembrane pressure monitoring - Display range - 60 to + 520 mmHg - Accuracy 110 mmHg 4) Pre-filter pressure - Measuring range 0 to +750mmHg or'50 to +500mmHg - Accuracy +10 mmHg or t8mmHg 5) Air detector - Measuring principle detection by ultrasound transmission, additional optical monitoring in venous clamp - Sensitivity drop in fluid level, air bubbles or micro foam 6) Blood leak detector - Measuring principle optical - Sensitivity S 0.5 mL blood/min HCT 32 % at maximum filtrate flow 7) Sringe pump (anticoagulants) - Continuous flow 0,0.1 - 25m1,/h or 0.0.5 - 5.0m1/h - Bolus function 0,0.1 - 5ml/Bolus C. Consist of l. Main Body l) Pump 2) Display 3) Pressure Port 4) Air Detector & Venous Bubble Catcher 5) Heater 6) Venous Line Clamp & Optical Detector 7) Blood Leak Detector 8) Operation manual 9) Service manual D. Remark l. Warranty : 3 years.

ITEM 21. ICU Ventilator:

Intensive care ventilator, for use on Pediatric/Infant- Adult patients With Graphics Display Monitor. Breath Types: VC, PC, VTPC Modes (in each breath Type): A/CMV, SIMV, SPONT, Spontaneous Breath Choices: PS, VTPC. Features: Inspiratory time at least 0-3 sec with optional pause Inspiratory flow at least 3-140 l/min Pressure support: at least 0 to 45cm H2O/mbar Tidal Volume: at least 10-800ml Resp.Rate: at least 6-150b/min Pressure Limit: 0 to 80cmH2O/mbar I:E Rate: 1:4 to 4:1 Trigger pressure or flow FiO2: 0.21 to 1.00 PEEP/CPAP: 0 to 45 cmH2O/mbar Leak Compensation Standby Condition: Allows setting to be preset and Circuit Check tests to be performed prior to starting Ventilation Open Exhalation Valve (BPRV): On/Off for Biphasic Pressure Release Ventilation Event History Log: Records 1000 events; alarm & settings Compliance Compensation: On/Off Graphical display of respiratory parameters Must be

mounted over the Mobile Medical Air Compressor. Power requirements 220 VAC ±10%, 50Hz. Internal rechargeable Battery provides an minimum. 60 minutes for complete ventilator function. Accessories : Medical Air Compressor Humidifier 1 Tube set, adults 1 Tube set, Children 1 Humidifier chamber O2-connecting Tube 5.0 m 1 Air-connecting Tube 5.0 m Humidifier : Heating power with safety thermostat and indication of operating status 1 Circuit , Adults with patient Tubes , water traps, Y-Piece,mask elbow, catheter connector 1 Circuit , Children with patient Tubes, water traps, Y-Piece,mask elbow, catheter connector 1 Carriage Articulated Bracket for rail O2-cell without housing Sensors 5 pcs set Temperature Sensor Humidifier Bag- test-lung Standards CE; EC Marked US FDA; ISO certification. Option for nebulisation .

ITEM 22. **SPECIFICATIONS FOR DIGITAL MOBILE X-RAY**

Battery Driven, compact, easily transportable digital with flat panel detector mobile radiographic unit with telescopic/articulated arm with inbuilt DAP meter suitable for bedside X-Ray for ward patients, intensive care unit and operation theatre. It must include the following:

A. Generator:

1. It should be microprocessor controlled high frequency with output 32 KW or more.
2. KV range: 40 KV to 125 KV or more.
3. Tube current: 300 mA or more.
4. It should have an electronic timer with shortest exposure time – 1ms or less.
5. It should have a digital display of mAs and KV.

B. X-Ray Tube:

1. Output should match the output of the generator.
2. It must be a rotating anode type with 3000 rpm or more.
3. Focal spot size of X-Ray tube should be between 0.6 to 1.2 mm.
4. Anode heat storage capacity should be 120 KHU or more.
5. Multi leaf collimator with FFD display should be supplied with the system.

C. Flat panel detector:

1. The flat panel detector made up of amorphous selenium/silicon with CsI scientillator size atleast 14" x 17" (Wi Fi enabled wireless).
2. The detector pixel matrix should be 2k x 2k or more with DQE atleast 65%.
3. Pixel size should be 150 μm or less.
4. The machine should have provision for detector storage compartment.
5. The image processing time after exposure should not be more than 5 sec.
6. Weight of the detector shouldn't be > 5 Kg.

D. Battery:

1. The machine should be able to run on mains as well as on battery supply. Please specify battery backup time/number of exposures.
2. The battery should also provide power for the motor to move the machine.

3. The battery should be able to be charged 80% from a normal 15A, 220-240V single phase socket in less than 4 hours & should be capable of generating at least 100 exposures.

E. Inbuilt Console:

1. The machine should have an integrated/inbuilt console with a TFT touch screen with size at least 14 inches.

2. The console should be able to view the image, and provide post processing features, using touch screen.

3.The post processing features should include zoom, contrast and brightness adjustment etc.

4.It should have image storage memory of at least 3000 images.

5.The monitor should have minimum 1.0 Mega Pixel resolution.

F. Other features:

1. The unit must have an effective braking system for parking, transport and emergency braking. The tube stand must be fully counter balanced with rotation in all directions.

2. It must have a telescopic/articulated arm for maximum positioning flexibility in any patient position. The angles in various planes to be specified by the manufacturer. The cables should preferably be concealed in the arm system.

3.The facility for exposures with remote control/detachable exposure switch should be possible.

4.Detachable exposure switch should be supplied with a chord of at least 5 meters.

5.A grid of 8:1 ratio with size atleast 14”x17” should be supplied.

6.The x-ray unit and detector should meet European CE & USA FDA approval standards.

7.The system offered should have AERB Type approval/NOC for installation and use in India.

G. Connectivity:

The machine should be fully network ready and it should be possible to transfer images and patient data from and to hospital network using LAN connectivity or wireless LAN.

H. Power Line Connection

The unit should be able to operate on single-phase power supply with plug-in facility to any standard wall outlet with automatic adaptation to line voltage 200 to 240 volts, 15 Amp plug.

I. INDEPENDENT WORK STATION FOR POST PROCESSING

1. Post-processing Workstation with a high resolution monitor should be provided with the System.

2.The workstation should have a graphics card built in and support all common DICOM functions.

3. The monitor should have minimum 2.0 Mega Pixel resolution and have capability of portrait and landscape arrangement.

4.The processor should be of Dual Core Technology or better.

5.RAM should be of minimum 2GB.

6. The HDD should be of minimum 160 GB SATA drive or better.

7.The Workstation should have a DVD writer for burning images.

8.The workstation software should support the following:

9.Patient List with capability to query / search based on various criterion such as name, id number, date of examination etc.

10.Features such as DICOM Viewing, Windowing, Zoom, Pan, Magnify, Annotate, Mark, Measure, Reporting.

11.Connectivity to DICOM printers with multi-format options to be provided.

12. The workstation should have provision to connect to external storage devices, PACS & DICOM Servers and Dry Imager for film printing.

J. Guarantee/warranty: The whole unit including x-ray tube, detector all other accessories, batteries and consumables required to run this unit should be guaranteed for TWO years.

K. C.M.C.: After expiry of guarantee/warranty, CMC should be for five years which includes x-ray tube, detector all other accessories, batteries and consumables required to run this unit.

L. APPROVALS

1. The system should have **US FDA and European CE and AERB approval** for the whole system on the date of closing of the tender. The bidder to provide any other certificate (e.g. BIS) required to import the machine in case of any imported equipment. Any other certification from from any regulatory authority will be the responsibility of the supplier

2. Registration of the installation from AERB shall be the responsibility of the successful bidder. However any documentary assistance shall be provided by the hospital authority.

3. NOC will not be accepted
4. The equipment must have typed approval of the model quoted on the date of opening of the tender

M . Any two of the three major components of the system like tube, generator, and detector should be from the same manufacturer.

ITEM 23. FULL ELECTRIC ICU BED:
1.. Overall Size : L2150 x W900 mm (Rail-down)
L2150 X W1060 mm (Rail- up)
2. Backrest Lift: 0 - 80º
3. Knee-break Lift: 0- 40º
4. Adjustable Height: 470-770 mm
5. Trendelenburg & Rev. Trend: ± 11º
6. Frame: Made by steel with Special Anti-Bacterial Powder Coating
7. Support Mattress Platform: ABS Moulding (4 sections)
8. Detachable ABS Head / Foot Board (No.H-01)
9. Tuck-away Side Rails (1/2 Length) (Zero gap between bed to trolley)
10. Side Rail with Built-in Controllers: Use Double-Side Design
11. CPR Emergency Release-handle
12. Low Voltage DC Motor with Battery Back-up (CE UL Approval)
13. Lockable Caster with ABS Cover: 150 mm(Diameter)
14. Two Sections I.V.Pole
15. Digital Scale-weight System
16. Head Section : use X-ray transparent platform

ITEM 24. Activated Clotting time machine:
Single well, 2-point clot detection, Single button operation, High visibility display, Small 6" footprint, Inexpensive. Electromagnetic Clot Detection (Tube).

ITEM 25. Sternotomy Saw with driving unit:
1. Driving Unit (Motor with MCB and Foot Control) a. 220~230V AC b. Completely enclosed c. Foot control for ON/OFF and speed d. Castors for mobility e. Stand for Unit 2. Flexible Shaft a. Minimum length 2 mtrs b. Should be autoclavable c. Push-Pull type ends 3. Sternal Saw Hand piece a. Reciprocating blade type b. Should be autoclavable c. Light weight d. Set of 5 blades 4. Should be supplied with tool kit and special container for the system. 5. Should be supplied with tool kit and special container for the system. 6. Extra Flexible Shaft (cable) 1 Nos. 7. Extra set of Sternum Saw blade (set of 5).

ITEM 27. Electrocardiograph 3 channels(ECG machine):

Recording ECG Leads: 12 standard Leads Recording Channels: 3/1 user selectable LCD display of ECG Lead switching: manual and automatic. Sensitivity, mm/mV: 5, 10, 20. Calibration signal: automatic and manual. Diagnostic frequency range 0.67–150 Hz or better Filters for mains frequency, low frequency, muscle artefact, high frequency Recorder: Recording method: thermal paper Recording speed, mm/sec: 25/ 50 user selectable Channels acquired simultaneously:1/ 3 user selectable Channels printed simultaneously:1/ 3 user selectable Other features: Portable Mains and internal rechargeable battery operation Battery operating time, minimum: 90 min. Power requirements: 220 V, 50 Hz Accessories: 1. Patient cable 2. 6 chest limb electrodes 3. 4 limb electrodes 4. 4 strap electrodes 5. 6. 1 bottle ECG Gel 7. 2 rolls of paper or Z-Fold 8. Carry bag Standards CE; EC Marked US FDA; ISO certification

ITEM 28. Xenon Surgical head light:

Xenon 350 Surgical Illuminator . Lamp Type 300 Watt Cermax Style. Lamp Life (Median) 650 hrs Power Supply PS300-12 Type , Correlated Color Temperature 5600 °K, Lumen Output 1800 Lumens, Minimum Optical NA 0.65, Lamp Replacement Side access door, no tools required Controls Main Power Illuminated Push Button Lamp On/Off (standby) Momentary Membrane Switch Intensity Adjustment Range 0% to 100% (10% Increments) Increase Intensity +10% Momentary Membrane Switch Decrease Intensity -10% Momentary Membrane Switch Full Bright Shortcut Momentary Membrane Switch Full Dim Shortcut Momentary Membrane Switch Electrical Input Voltage 100-240 VAC, 50/60 Hz Universal Input Current 6.0 A Fuse Dual 250 VAC T6.3 A, 5x20 mm Displays Accumulated Lamp Hours Red LED, 3 digit Intensity Green LED, 3 digit Lamp On Indicator Green indicator LED Accumulated Lamp Hours Reset Button Combination (Full Dim, Decrease, Lamp on/off) Classification Electrical Class 1, Type BF Water Ingress IPXØ—No Protection Operation Mode Continuous Safety, EMC and Regulatory Compliance CAN/CSA C22.2 No. 601.1 UL60601-1 CAN/CSA C22.2 No. 601.1.2 IEC/EN 60601-1-2 IEC/EN 60601-1 .Xenon Headlight LS Spot Size Range @ 16". Working Distance 40 mm to 120 mm SS Spot Size Range @ 16" Working Distance 20 mm to 60 mm. Luminaire Body Width .82" (21 mm) Suspension Linkage 2-link, 3-point articulation Xenon Headlight Fiber Fiber Length 8' or 10' (2.44 m or 3.05 m) Fiber Diameter (core) 2.8 mm Input Connector Style Storz (standard), Extended Wolf (optional adapter) Input Optical Interface Fused Glass (no epoxy) Fiber Protection 3-layer, PVC Inner Sheath, Stainless Steel Monocoil, Urethane Jacket Xenon Mobile Stand Base 5 leg, 5 casters (2 locking) Casters Neoprene, precision bearings Height 36" (914 mm) Base Diameter 23" (584 mm) Weight 17.5 lbs (8 kg)

ITEM 29. Binocular Loupes:

- Magnification: 4.0 - 4.5 x
- Working Distance: 550 - 350 mm
- Working Field Diameter: 80 - 50 mm
- Pupil Distance: 47 - 74 mm

ITEM 30. Patient warming blanket and machine:

provides safe, quiet and effective warming to patients around the world. • Small size frees up more usable workspace • Light weight makes transport and set-up a breeze • Freestanding or easily attached to an IV pole bedrail or optional rolling cart • Built-in hour meter makes it easy to monitor usage for preventative maintenance • Unique snap-fit hose swivels at three points for easy blanket attachment and positioning. Operating Temperatures High: 43° ± 3° C (109.4° ± 5.4° F) Med: 38° ± 3° C (100.4° ± 5.4° F) Low: 32° ± 3° C (89.6° ± 5.4° F) Leakage Current Meets regulatory standards for leakage current Filter High-efficiency 0.2 µm air filter Device Ratings 110-120 VAC, 60 Hz, 9.5 Amperes 220-240 VAC, 50 Hz, 4.5 Amperes 100 VAC, 50/60 Hz, 10 Amperes.

ITEM 31. Pulsoximeter:

Real-time SpO2% Oxygen Saturation Range (%SpO2) Measurement range at least 70-99% Accuracy (%SpO2) ±2% at100%~80%, ±3% at 80%~70% Real-time heart rate (BPM) Pulse Measurement range 30-250 bpm Accuracy ± 1 bpm at 30~250 bpm Display SpO2,Pulse rate, Pulse signal wave, Max/Min setup (SpO2% / BPM) Power Requirements internal rechargeable battery providing an operating time of at least 8 hours Compact design for easy transportability Accessories: 3 rolls of paper Operation manual 1 adult reusable finger Sensor 1 Neonate Sensor Standards CE; EC Marked US FDA; ISO certification.

ITEM 32. Syringe Pump:

Syringe Driver for Parenteral Infusions , in Wards, OP, ICU's and during Transportation/Transfer Single Channel. Shall accept Up to 60cc Syringes , Non-Captive Self checking of Electronics with audible call back on locked-out Controls Tamper and fluid resistant Design . ABS Casing (Impact-Resistant) Shall be fitted with IV Rod, Adjustable Height with 4 Hooks.Mobile on 5 Star Stand with Castors Internal rechargeable battery Rate: 0.1 to 99.9 ml (in 0.1 ml steps) indicatively Total volume infused: 0.1 to 999.9 ml Precision : +/-3%.Stipulated Syringes Occlusion release shall give minimum Bolus effect Syringes : 10 Types at least of LuerLock Type 10/60mL.Syringes,+ Specific Choice Pause infusion facility Alarms/Safety Infusion nearly complete Infusion complete Occlusion System malfunction Syringe unlocked Plunger disengaged Low battery Protection against Leakage Current:Type CF.Equipment Protection against Electric Shocks:Class II.Equipment Safety features: Error coding (event log) Rate change through Audible Stop Switch Audible Call back on locked-Out-Controls Automatic detection of Syringe Volume Minimum bolus on Occlusion Release at any selected Rate Communication : RS232C Interface Electrical: Electrical: Class II (double insulated) Bat.Autonomy : 8 Hrs.Minimum Power supply: 220 VAC.50.60Hz External transformer . Stabilizer Environmental factors Shall meet IEC-60601-1-2: 2001(Or Equivalent BIS) General Requirements of Safety for Electromagnetic Compatibility or should comply with 89/366/EEC; EMCdirective. The unit shall be capable of being stored continuously in ambient temperature of 0 -50deg C and relative humidity of 15-90% The unit shall be capable of operating continuously in ambient temperature of 10 -40deg C and relative humidity of 15-90% Accessories Coupler between 2 units Mobile floor stand IV stand clamp Rail clamp Standards : IEC601.1/IP33 Safety: IEC 601 / 1. CF. Compliance with EN 60601.1 and PrEN 60601-1-24. CE 0459 marking in compliance with EEC 93/42 Medical Products directive. Comply with EN60601-1-2, EN60601-2-24 EN ISO 9001:2000, EN ISO 13485:2000; EN 46001:1996 14

ITEM 40. **X-ray Film Illuminator OR VIEW BOX (LED Viewer 3 in 1):** Wall-Mount Diffuse, uniform, flicker free illumination Transparent Spring-loaded film Retainers shall grip lightly and firmly without obscuring top edge details Screen shall be recessed into the cabinet to help keep the interior dust free and eliminate side light spill The film retainers shall always operate effectively maintaining an even pressure across the full width of the illuminator. Direct Starting , Luminous Source : Daylight Command and Control on Front Side. Bipolar Switch with Pilot lamp Wall Fixations shall be provided for . Cord , Local Plug Power Supply : 220V/50Hz

The system should have facility of illumination control.

ITEM 41.Refrigerator:

For medicine storage. Upright Type Internal volume not less than 250 lt. / freezer - 40÷50 lt. Temperature controlled within the range of +2°÷ +8° C. Number of shelves – 3 or 4. With defrosting system Power Requirements: 220 ± 10% V. 50 Hz.

ITEM 42. TECHNICAL SPECIFICATION OF FUMIGATION MACHINE

with Timer Input Power : Should be 220 VAC, 4 Amp, 50 Hz Nozzle Assembly : Should be Non-rotating, non-clogging, vertex in design. Power Head Housing : should be High grade engg. Plastic tough & corrosion resistant Motor Assembly : should be High thrust double impeller motor with inbuilt circuit for thermal overload protection. Precision Metering : Should be Liquid discharge rate 0-150 ml/min. System and Adjustable by rotating knob Chemical Solution Tank : Should have Capacity 5 Ltrs. Of Non corrosive tank with graduated marking & liquid level visibility from outside Intank Air Filter : Should have Primary and secondary layer of filtration for Particular matter and moisture. Empty Weight : approx 5.0-5.5 kg High Power Jet Watts : Impellar Fan System 600 Watts Greater Spread and Reach: 40-45 ft distance & 20-25ft height Flow Rate : should have 30-50 ml/min Produce dry fog and : should be less than 1 micron Finer droplets Quotee agency should be ISO certified and warranty of minimum of one year. AMC rates for two years.

ITEM 44. TECHNICAL SPECIFICATIONS : HIGH PRESSURE AUTOCLAVE

. 1- Horizontal Rectangular High Pressure High Vacuum steam Sterilizer. 2- Chamber size shall be minimum of 2 feet width x 2 feet height x 4 feet length. 3- Should be operated on 400-440V, 3 phase with neutral, AC power supply. 4- Chamber volume shall be minimum of 420 liters. 5- Steam generator volume shall be minimum of 60 liters and should be fitted with suitable electrical heater load of 18KW, to produce steam to sterilizer. 6- The sterilizer shall have single door (Hinge type) with radial locking using shooting bolts having high pressure locking safety facility and made of good quality stainless steel 304 quality . Should provide heat resistant SILICON door gasket withstand upto 140 Deg. C. 7- The sterilizer shall have to draw the water, automatically, when needed in the inbuilt boiler. 8- Thickness of chamber of sterilizer shall be minimum 6mm and to be made of stainless steel 316 quality is capable to withstand the negative pressure (vaccum) of 24-26’’Hg created by the vaccum pump. 9- Thickness of door of sterilizer shall be minimum of 12mm and to be made of stainless steel 316 quality. 10- Sterilizer jacket shall be made of Boiler quality steel plate with a material thickness of 6-8mm. 11- Glass wool insulation thickness shall be 50mm. Insulation cover shall be made of good quality stainless steel 304 quality. 12- All connecting pipes shall be made of good quality stainless steel. 13- Stand shall be made of Mild steel with anticorrosion paint. 14- The unit shall be fitted with suitable water ring Vacuum pump, motor capacity: 3 HP, to create high vacuum of 26”hg for efficient drying and sterilization of loads.
15- Pressure gauge range shall be 0 to 6 Kg./cm2 . 16- Compound gauge range shall be – 1 to 6 Kg/cm2. 17- Safety valve range shall be 0.3 to 3.5kg/cm2. 18- The unit shall be capable of being stored continuously in ambient temperature of 0-50 Deg.C and relative humidity of 15-90%. 19- Suitable validation port shall be provided. 20- Working temperature of sterilizer is 121-134 Deg. C and the corresponding pressure is 1.2-2.1 kg/cm2. 21- Safety features of sterilizers: Door locking facility, Low water protection system, Pressure cut off facility and all other necessary safety features. 22- Equipment shall have no sharp edges, will be securely mounted and would provide adequate protection against moving and electrically energized parts. 23- Controls (e.g. switches, knobs) shall be visible and clearly identified. 24- Labels and markings shall be clear and visible.
25- Equipment shall be simple to use, operate and maintain (User friendly). It shall be designed for easy access to serviceable parts. 26- AUTOMATIC OPERATION WITH PRINTER: (A) The sterilizer shall be fitted with suitable PLC (Microprocessor) for fully automatic cycle operation instead of manual operating valve with following Features: (i) PLC based microprocessor which is incorporated with the sterilizer. (ii) Digital displays of Chamber Pressure, temperature, cycle no., Batch no., Time & date, alarm indicator, Low water indicator. (iii) Provision of ‘error code analysis’ inbuilt, Leak test, Bowie & Dick and Standard Process. (B) Printer: Printer that shall automatically and continuously monitor and record dates, time of day, load, identification no. and operating parameters. (C) The system shall be designed, primarily, for carrying out the following: Leak test cycle Bowie & Dick Process Standard Process High pressure and High Vacuum Process – vacuum holding. 27- STANDARDS & SAFETY: (A) The unit should be manufactured as per IS specifications Mark ISI:3829 and also should bear the certification. (B) Electrical safety shall conforms to standards for electrical safety IEC-60601-2-25 Safety of electrocardiograms (OR EQUIVALENT BIS Standard). (C) Electrical safety shall conforms to standards for electrical safety IEC-60601/IS-12450 (D) Equipment performance should not be affected by electro magnetic interference radiated or conducted through power lines from another device. (E) Necessary operational training / day-to-day maintenance training shall be imparted to our staff after commissioning of the equipment at site. 28-

AFTER SALES SERVICE: (A) After-sales-service/ maintenance shall be provided from your factory trained engineer. (B) Response time from time of lodging the complaint shall be 24-36 hours and total uptime in a year shall be not less than 97% including PPM. (C) Back to back warranty to be taken by the supplier from the principal to supply spares for a minimum period 10 year. (D) Should have service facility. The service provider should have the necessary equipments recommended by the manufacturer to carry out preventive maintenance test as per guidelines provided in the service/maintenance manual.
29- SPARES AND ACESSORIES TO BE PROVIDED ALONG WITH EQUIPMENT: (A) Spare fuses 10nos.shall be provided, if fuses are used. (B) Spare water reading glass and washers shall be provided (C) One number single water still (distillation) with following features: Electrically operated water still capable of providing 10 liter / hour pyrogen free distilled water, made of stainless steel, having immersion water heater(heating coils) with low water protection(low water cut off device). (D) 60 liter plastic tank to store distilled water, fitted with two outlet taps to withdraw water. 30- DOCUMENTATION – SHALL BE PROVIDED AT THE TIME OF DELIVERY: (A) Operator's / instruction/ user manual in English should be provided. (B) Installation qualification (C) Operation qualification (D) Design qualification (E) Performance qualification (F) Hydraulic test certificate (G) Material test certificate (H) Gauge calibration certificate (I) Master gauge calibration certificate (J) Warranty certificate 31- Vendor has to support the specifications with manufacturer's brochure failing which offer may be rejected. Vendor has to demonstrate the equipment at Hyderabad, within specified time limit, if asked for; failing which offer will be rejected. 32- Installation(Erection & commissioning) and training to be provided by vendor .

ITEM 47. FORMALIN CHAMBERS

FORMALIN CHAMBER : ISO CERTIFIED , WARRANTY 5 YEARS, STANDARD LARGE SIZE, SUITABLE FOR KEEPING THORACOSCOPIC/ BRONCHOSCOPIC INSTRUMENTS, MULTIPLE SHELVES, LOCK AT ONE OF THE END

ITEM 51. Intermittent Pneumatic Compression Device :

1) It should provide Sequential, Gradient and circumferential compression around the ankle, calf and then the thigh. 2) It should provide pressure of 45 MmHg at ankle, 40 MmHg calf and 30 MmHg at thigh 3) Controller should have Graphic user Interface of 3.2 inch colour LCD screen. 4) Controller material should be compatible most of hospital grade cleaning agents. 5) Controller should have USB port to make software updates easy 6) Choice of three sizes: Knee Length, thigh Length & Foot cuff. 7) Should be supplied with 3 pairs of thigh length sleeves (Medium size) 8) Cost of all types of sleeves/cuff to be quoted separately. 9) Battery backup for 8 hours for uninterrupted compression. 10) Should have trouble shooting index in the device itself. 11) System should accommodate single leg operation or both if needed 12) US FDA, ISO & CE Certified.

ITEM 53. GLUCOMETER TECHNICAL SPECIFICATION TECHNICAL SPECIFICATION

1. Should be a hand held meter 2. Should require no routine maintenance 3. Should have reading range/linearity from 20 to 600 mg/dl 4. Should have a maximum reading time of less than 10 seconds 5. Should use electrochemical technology 6. Should use a minimum blood sample less than 1.5µl 7. Should have a LCD display 8. Should have measuring unit in mg/dl. 9. Should have wide operating temperature 10.Should have a minimum memory of 50 11.Should have life time replacement offer 12.Should have easy code entry technique 13.Battery should be replaceable without using any tools. 14.Should have facility to ensure accuracy of measurements. 15.Should be supplied with three types of control solutions of each at least 20 ml 16.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 GLUCOSE STRIPS GLUCOSE STRIPS 1. Should be able to use capillary blood samples. 2. Should have a minimum 4 months shelf life after opening the strip vial. 3. All strips should have at least one year expiry date from the date of supply. 4. 50 strips should be supplied along with the equipment. 5. Strips should be available in the local market for next five years.

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ITEM 59. Motorized Suction Pump:

Suction Unit for Major Surgery Procedures . Mains-powered , mobile on 4 antistatic Castors, ABS Casing and 2 graduated Canisters of 2,000ml each made of Polycarbonate autoclavable at 121°C and disposable suction bags Shall require no maintenance nor lubrication Oil-free pump, maximum suction of at least 500 mm Hg Free flow rate at least 25 l/min Main Switch with Pilot Lamp . Fuses Pedal Action Shall be equipped with a protective thermal cut-out relay. Shall be equipped with motor-protection cap that totally prevents aspirated liquids or secretions from reaching and damaging the vacuum pump Suction command with continuous adjustment , Vacuometer 2X2,000ml Canisters with airproof screwing-cap with independent Overflow devices . Fast Connectors and silicone Tubing Power Supply : 220VAC.50Hz. Ventilation Fan for overheating Sound level: Shall be not more than 55 dBA Accessories Silicone Tubing , sterilizable Transparent Cannula Holder, Sterilizable Anti-Bacterial Filters (4) Set of 4 canulaes with Holder : Yankhauer , Soft Universal Yankhauer Diameter : 8.0/6.0mm with anti-sticking Lumen and High Suction Lumen Universal Soft Canulaes diameter : 6.0/4.0mm Frazier Canulaes (Fergusson) diameter :1,5/2.0/3.0/4.0mm Jackson Canulaes : 35x3 /45X3/25X4/35X4/45X4/55X4/60X4cm Standards CE; EC Marked US FDA; ISO certification.

ITEM 62. LIST OF INSTRUMENTS AND ARTICLES FOR CARDIOTHORACIC SURGERY:

1. Finochietto rib spreader(Large, medium and small sizes)--2 each
2. Chest retractor(double bladed) small, medium & large sizes—2 each
3. IMA retractor(large and medium)—2 each
4. Self retaining chest retractor for valve (medium, small)—2 each
5. B.P. handle(no.3,4,7)—5 each
6. Towel clip(medium size)—40 pc
7. Curved artery forceps(size 3”,5”,7”)—20 pc each
8. Straight artery forceps(size 3”,5”)—20 pc each
9. Curved mosquito forceps—30 pc
10. Sponge holder—10 pc
11. TC Metzenbaum Dissecting scissors-curved(7”,9”)—5 each
12. TC Mayo Dissecting Scissor, Curved, 7”,9” –5 each
13. TC Valve cutting scissor 9”—3 pc
14. Suture cutting scissors—10 pc
15. Tube cutting scissors—10 pc
16. Micro tip scissors—5 pc
17. Utility Scissor, Black, 7 1/2"—6 pc
18. Lengenbeck retractor—10 pc
19. Cats paw retractor—10 pc
20. Deavers retractor(large,medium, small)—5 pc each
21. Doyen retractor—3 pc
22. Allis tissue forceps(5”,6”,7”,9”)—15 pc each
23. Russian forcep (7”,9”)—5 pc each
24. Kocher forceps(5”,7”)—20 pc each
25. DeBakey Tissue Forceps Straight,(2mm- 6”7”,1mm-6”7”)—6 pc each
26. Dissecting forceps straight toothed(6”,7”)—5 each
27. Dissecting forceps straight non tooth (long jaw)—5 pc
28. Adson Tissue Forceps 1x2 Teeth, 4 3/4"—10 pc
29. Volsellum(9”,10”)—5 each
30. Duval Lung Forceps 1" Jaw, 8"—6 pc

31. Right angle dissecting forceps(7”,8”,9”)—3 each
32. Fine tip right angle dissector(7”)—3 pc
33. IVC passer—3 pc
34. DeBakey Derra atraumatic side biting C-Clamp(small, Medium, large)—3 pc each
35. cooley Derra Atraumatic side biting C- Clamp(small, Medium, large)—3 pc each
36. aortic cross clamp curved(small, medium, large)—3 pc each
37. TC wire cutter—5 pc
38. Rib approximator—5 pc
39. bone nibbler/rongaur(fine tip)—6 pc
40. Frazier Suction Tube 8 French—10 pc
41. Suction Tube Stainless Steel—6 pc
42. Scapula retractor(medium size)—3 pc
43. Lung retractor—3 pc
44. Self retaining mastoid retractor (small, medium & large)—2 pc each
45. Green Retractors Fenestrated, 8 1/2"—10 pc
46. Hegar’s dilator set(sizes 6 to 20)—3 sets
47. Snugger set—15 pc
48. LA retractor curve(small, medium, large)—3 pc each
49. VSD retractor—8 pc
50. Eye-lid retractors—12 pc
51. Suture organizers—10 pc
52. Tubing/line organizer—6 pc
53. TC Crile-Wood Needle Holders, Serrated, 10" (TC=Tungsten Carbide)—10 pc
54. TC Mayo Hegar Needle Holders, Serrated, 6"—10 pc
55. TC Mayo-Hegar Needle Holders, Serrated, 8"—10 pc
56. TC Pin Cutter Angled, Double Action, 8 1/2"—6 pc
57. TC Ryder Micro Needle Holders, Serrated, 8"—10 pc
58. TC Sternal Wire Twisters - 7"—10 pc

MICRO-SET:

1. TC Lillehei-Pott’s Micro tip scissors curved(5”,7”,9”) (TC=Tungsten Carbide)—5 each
2. TC Gerald micro-tip dissecting forcep ,straight, serrated 7”—15 pc
3. TC Potts-smiths Scissor Angled,(60° Angle, 125 degree reverse cutting) 7 1/4"—5 pc each
4. Ring tip forceps 7”—15 pc
5. Fine nerve hook—12 pc
6. Fine metel suction cannula (10 french)—10 pc
7. Liga clip applicators(yellow,blue)—5 pc each
8. Coronary probe(1mm,1.25mm,1.5mm,1.75mm,2mm,2.25mm,2.50mm,2.75mm,3mm)—5 pc each
9. TC(TC=Tungsten Carbide) Castroviejo needle holder,straight (5.5”,7”) for 5-0,6-0,7-0,8-0 needles—2 pc each
10. Titanium coated Castroviejo needle holder,straight (5.5”,7”) for 5-0,6-0,7-0,8-0 needles---2 pc each
11. Titanium coated spring pott’s scissors(forward 60 degree and reverse cutting)7”---3 pc each
12. Fine curved bull-dog clamps for coronary with applicator—10 pc

13. Malleable Coronary shunts(sizes 1.25,1.5,1.75,2.0,2.25,2.5,2.75,3.0)—5 sets
14. Coronary snugger set—5 set
15. Blower mister set—10 pc
16. Silicone ¼” tubing for Octopus device—10 pc
17. Octopus stabilizing device with Chest spreader for CABG—3 pc
18. Star fish/Urchin heart positioning device—3 pc
19. Aortic punch(size 3.5,4.0,4.5)—2 pc each

MISCELLANEOUS ARTICLES :

1. Pacing cable—20 pc
2. Pacing wire---10 box
3. Defibrillator cable with internal paddle(adult, pediatric)—3 pc
4. Asepto syringe—20 pc
5. Umbilical cotton tape—20 box
6. Vascular rubber sling—20 b0x
7. Vascular liga clip(yellow,blue)—30 box
8. Bone wax—10 box
9. Fogarty balloon catheter(size-3.0,4.0,5.0,6.0)—10 pc each
10. Bair hugger blanket—20 box
11. Eye needle—10 box
12. Snugger tubings—20 box

CORRIGENDUM /ADDENDUM / CURRENT SPECIFICATIONS FOR ITEMS:

Item No.1(Heart-Lung machine with provisions for ECMO: CORRIGENDUM.

1.	**5-PUMP CONSOLE**	
Sl. No.	**Previous Specification**	**Current Specification**
(v)	Individual pump heads should have Harvey Roller pumps with facility for tubing to be used, adjustable from ¼" to 5/8" through 3/8" and ½" including 1/16" for cardioplegia by easily changeable mechanism.	Individual pump heads should have Harvey Roller pumps with facility for tubing to be used, adjustable from ¼" to 3/8" and ½" including 1/16" for cardioplegia by easily changeable mechanism.
(ix)	Should have unidirectional hand crank facility as a critical safety feature. Hand crank loading should be from top for faster access.	Should have at least unidirectional hand crank facility as a critical safety feature. Hand crank loading should be from top for faster access.
(xi)	Should have variable, changeable tubing holders in each pump head: 1/4", 3/8", ½", 5/8" and double ¼".	Should have variable, changeable tubing holders in each pump head: 1/4", 3/8", ½" and double ¼".
(xii)	Should have movable oxygenator holder.	Currently deleted
(xvi)	Instrument tray positionable with long monitoring arm	Currently deleted
(xvii)	Lightweight surface table; writing surface.	Currently deleted
Following points are added in specification of PUMP CONSOLE		
(xviii)	Additional Air Oxygen Blender 1 unit	
(xix)	Separate cart for ECMO.	
(xx)	Heater Unit (33° C - 39° C)	
(xxi)	Centrifugal Pump 1 unit	
	Previous Specification	**Current Specification**
2.	**MONITORS**	
(i)	**PRESSURE MONITOR**: Facility to monitor **one arterial line pressure and one cardioplegia line pressures (total 2)**; along with necessary pressure transducers,cables six (2 x 3 = 6) and domes (reusable), with accurate digital display andalarm facilities audio and visual.	**PRESSURE MONITOR**: Facility to monitor **one arterial line pressure and one cardioplegia line pressures (total 2)**; along with necessary pressure transducers,cables four (2 x 2 = 4) and 200 pcs disposable domes , with accurate digital display andalarm facilities audio and visual.

(iii)	**TEMPERATURE MONITOR**: 6 temperature displays for patient monitoring and for cardioplegia monitoring with digital display in Celsius with 6 necessary compatible temperature 6 probes and 6 additional probes (6x2=12 probes) with 3x2 = 6 of them for nasal, rectal and esophageal use	**TEMPERATURE MONITOR**: 6 temperature displays for patient monitoring and for cardioplegia monitoring with digital display in Celsius with 4 necessary compatible temperature and 4 additional probes (4x2=8 probes) with 2x2 = 4of them for nasal, rectal and esophageal use

Continued to page – 2

Sl. No.	Previous Specification	Current Specification
5.	**ACCESSORIES**	
(ii)	**Stainless steel line clamps** for cardio pulmonary bypass **12** nos.	Currently deleted
(iv)	**At least one thermal blanket.**	Currently deleted
(v)	**On-line measurement of PH , PCO2 &Hb for neonatal cardiac surgery (optional)**	Currently deleted
	Following pointis added in Accessories	
(vi)	**Supplier should provide the following items at FOC :** Instrument Tray & Light weight Surface Table for writing, Line Clamp (12 nos.)	
	Previous Specification	**Current Specification**
11.	**provision for sevoflurane or isofluranevapouriser.**	Currently deleted
12.	**OPTIONAL ITEMS**	Currently deleted
(A)	One centrifugal pump including all accessories. (and consumables for five patients).	Currently deleted
(B)	Temperature control module	Temperature control module is marked separately as Item No. 02
(xiv)	Optional remote control unit should be capable of taking 9 Temp. Probes and display temperature in digital readouts. Alarm limits setting for at least three probes at crucial sites.	Optional remote control unit should be capable of taking 1 Temperature Probe measuring the gradient and display temperature in digital readouts. Alarm limits setting for the Probe at crucial site.

Following pointis added in Temperature Control module	
(xv)	Should provide Thermal Blanket 2 pcs. each for adult & paediatric use.

Item No.2(Temperature Control Module):

SPECIFICATIONS:

(xv) TEMPERATURE CONTROL AND MONITOR SYSTEM WITH CARDIOPLEGIA SUPPLY AND REMOTE TEMPERATURE DISPLAY: with the following features:

(xvi) Simultaneous delivery of water for **arterial and cardioplegia** heat exchangers and to **thermal blankets** to be available from suitable ports.

(xvii) To work with power supply of 220± 20 V 50 Hz.

(xviii) Pressure regulated blanket ports maintaining the temperature of the arterial port.

(xix) Temperature display range of 0- 50° Celsius; remote accuracy of 0.3° Celsius and remote temperature display unit module with 3-temperature display.

(xx) Microprocessor based unit to control, cool, rewarm and maintain temperature.

(xxi) Water outlet temperature of heat exchanger and blanket range 0-42° C.

(xxii) Maximum flow performance of oxygenator heat exchanger supply port 15 – 22 LPM for fast cooling; 480mmHg maximum pressure; Blanket 1.5 to 2.5 LPM at zero head.

(xxiii) Built in Ice Maker to provide 50 lbs of ice in about 8 hours from 25º C water.

(xxiv) Should be capable of providing ice water for cardioplegia independently with variable cooling rate

(xxv) Rewarming facility with venous difference mode settable at 6 to 10° C gradients to hold the water bath temperature at higher than the venous blood temperature.

(xxvi) Temperature probe module for the operating ranges of 0-50° C.

(xxvii) Temperature probes to fit in standard oxygenators (bubble / membrane)

(xxviii) Optional remote control unit should be capable of taking 9 Temp. Probes and display temperature in digital readouts. Alarm limits setting for at least three probes at crucial sites.

(xxix) Should be be both US-FDA & European CE approved.

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Item No.3(Anesthesia Work Station): CORRIGENDUM

1. Whole system should have **both US FDA and European CE certification.**
2. The anaesthesia workstation should be reliable ,advanced and microprocessor based.
3. It should be movable on 4 castors , and 2 of this will be lockable.
4. integrated light to illuminate work surface of the machine.
5. Should provide low flow anaesthesia with electronic flow meters. Mechanical hypoxic guard should be at 28% FiO2.

6. **Digital flow meter** instead of triple cascaded flow tubes to be incorporated. Permanent oxygen sensor for FIO2 monitoring.

7. 2 electronic vaporizer of same manufacturer --isoflurane, sevoflurane should be offered.

8. Should have **Breathing Warmer** to avoid water condensation in patient circuit.
9. **Battery back up** minimum 45 minutes.
10. **Multi parameter patient monitor** should be both US FDA and CE apporoved, able to
    mount on machine with good stability.4 IBP,NIBP,5 lead ECG with ST segment analysis,EtCO2, SPO2,2 temperature and optional upgradability to cardiac output monitoring.
11. Integrated suction facility.
12. **Integrated anaesthesia ventilator-**-manual ,spontaneous,control modes with pressure conrol, volume control,SIMV,PRVC ,IRV etc mode. Parameter setting should be:

    PEEP--0-40 cm water
    tidal volume-20-1000 ml or more.
    I:E -1:4 --2:1
    rate 4-60 min,

    should be able to compensate compressible volume in breathing tubing. Atleast 12 inch touch screen colour screen for display.
13. System should have integrated low flow Oxygen flow meter for administering Oxygen to patient by nasal prong or face musk.
14. The hanger and trolley should be manufactured by the manufacturer itself.

Item No.4(C-arm mobile image intensifier): CORRIGENDUM

1. Whole system should have **both US FDA and European CE certification.**

2. X-RAY GENERATOR: iv. Power: more than 15 Kw (in stead of 1.4 Kw).
3. IMAGE INTENSIFIER: i. Should be of reputed make.

Item No.5(Arterial Blood Gas Analyzer): CORRIGENDUM

1. Should have both US FDA and European CE certifications.
2. Should be Small, easy to operate and portable single Cartridge based system capable of measuring pH, PCo2, Po2, Na+, K+, Ca++, Glucose, Lactate, Hematocrit, Urea, Creatinine.
3. The cartridges should be self-contained with all the reagents, sensors & calibrating solutions required for running.
4. Tests cartridges should be stored at room temperature without any requirement for refrigeration.
5. System should be provided along with a dedicated wireless/inbuilt Thermal Printer.
6. System should be capable of recharging during operation.
7. System should use Amperometric, Potentiometric, Conductimetric sensors for measurement.
8. System should have an EMBEDDED and detachable BARCODE READER
9. System should be capable of BLUETOOTH and Wi-Fi connectivity for wireless connectivity
10. "Reagent pack for doing 1000 test, one deprotieniser of 125 ml, printer paper and one three level quality control of 5ml."—deleted.
11. "Reagents supplied should have at least six months shelf life."---deleted.
12. "All consumables should have at least 45 days on-board stability."—deleted.

Item No.6(Maneuverable Cardiothoracic OT table): CORRIGENDUM

1. Should have both US- FDA and European CE certifications.
2. Battery and mains power operation.
3. Adjustment options via corded hand control or IR remote control.
4. Body Strap for fastening on the side rails.

Item No.7 (Cell saver machine): CORRIGENDUM

1.Should have both US- FDA and European CE certifications.

Item No.8 (IABP-intraaortic balloon pump): CORRIGENDUM

1. Should have both US- FDA and European CE certifications.

Item No.09 (Dedicated Echocardiography Machine with TEE (Trans Oesophageal

Echocardiography) probe: for OT use. CORRIGENDUM.

1. System should have open architecture & must be capable of more than 5 million (in stead of 1024 or more) channels for future developments.
2. Digital Image Storage(HDD based and USB data transfer preferable) & Patient Archive with true scanner frame rates. When recall the images should able to re-analyze the images with full measurement & analysis capabilities.
3. Should be capable of doing M mode in real time / stored images & also should have a post processing M mode with 360 degrees rotatable cursor.
4. Should have both US FDA and European CE certifications.
5. Should have 19" (in stead of 17") high resolution TFT Monitor.
6. Should have facility for Mitral Valve Assessment.
7. Should be quoted with Following Transducers:(Atleast 4 active probe ports are required):

Adult Cardiac Phased Array Transducer (wideband): 1 No
Pediatric Cardiac Phased Array Transducer (wideband): 1 No
Neonatal Cardiac Phased Array Probe (Wide band): 1 No
5 /10 MHz Linear Probe for vascular studies: 1 Nos.
Adult Trans-oesophageal echo probe(4D): 1 No
Pediatric trans-oesophageal echo probe(2D):1 No

Item No.10 (Multichannel Cardiac OT monitors) for OT: Corrigendum.

1. Should have both US FDA and European CE certifications.
2. Module/connectivity port systems for parameters is mandatory.
3. IBP-4 No, Dual temperature, Capnography(EtCO2), ECG with ST segment analysis, NIBP-1, SpO2 waveform, Respiration and upgradability to Cardiac Output measurement & anesthesia gas monitoring is required.
4. Battery back up for atleast 60 minutes.
5. Large TFT display(> 16 inches) is required.

Item No.11(Composite multichannel monitors) for ICU: SPECIFICATION.

1. Should have both US FDA and European CE certifications.
2. IBP-2 No, dual temperature, Capnography(EtCO2), ECG with ST segment analysis, NIBP-1, SpO2 waveform, Respiration is required.
3. Battery back up for atleast 60 minutes.
4. Module/connectivity port systems for parameters is preferable.
5. Standard accessories to be supplied, like--(a) One 5 lead ECG Cable - 1 No.
   (b) Adult sensor - 1 No.
   (c) NIBP Cuffs (each one for Adult, Child and Neonatal applications), (d) 2 Nos.
   IBP reusable cable and (e) 10 Nos, Disposable Transducer Kit, EtCO2 kit.

Item No.12(Defibrillators with internal & external paddle): Corrigendum.

1. Should have both US FDA and European CE certifications.
2. Should provide internal defibrillation paddles(both adult & pediatric) for open heart surgery—one pair each as accessory.

Item No.13(Roof mounted LED OT light with Camera): Corrigendum.

1. Should have both US- FDA and European CE certifications.
2. Should have high performance LEDS with life minimum 50,000 hours with stable illumination throughout life.
3. Illumination intensity 1,60,000 Lux for main dome and 1,40,000 for satellite dome with intensity control facility.
4. Colour temperature should be variable from 3800 K-4400K-5000K-5600K.
5. Colour rendering index should be 93-95.
6. Full HD camera with 1080x1920 pixels, with aspect ratio 16:9, minimum 10 X optical zoom, WiFi connectivity, placed at one dome.
7. Two minimum 42 inches compatible good quality HD TV fitted one inside the OT and other outside in the seminar hall with wireless connectivity to be supplied along with.
8. Recording facility through external HDD (minimum 2 TB) to be provided.
9. 3rd arm is not required.
10. 2 numbers of autoclavable handles for each dome to be provided.

Item No.14(Temporary dual chamber pacemakers): CORRIGENDUM

1. Should have both US-FDA & European CE certifications.
2. "Precision(WAVELENGTH,nm) 5% please comments"—DELETED.
3. Requires 2 AA (1.5 V) Batteries instead of 9 V alkaline/lithium Batteries.
4. Weight range 500-700 gms instead of 510 gm.
5. Pulse width for ventricles should be 1-2 msec , instead of 5-6.
6. Strap holder for battery is optional.

Item No.15(Good quality Diathermy/Electrocautery machine): CORRIGENDUM

1. Should have both US-FDA & European CE certifications.

Item No.16(Flexible video bronchoscope): CORRIGENDUM

1. Intended for use in pediatric patients in ICU.
2. Make model should have US-FDA or European CE certifications.
3. Preferably have automatic leakage testing facility.

4. “Exterior designed to minimize surface protrusions and interior design should be simplified”—deleted.
5. “Joint-less channel configuration”—deleted.
6. “Video imaging system/camera a) ¼ single chip camera with RGB”---deleted..
7. “The light source c) should be an independent module,separate from other parts of endoscopy system/video processor”—deleted.
8. The light source d) Lamp should be LED or 300 watt Xenon with mimimum 500 hours continuous use life, with HD video processor.
9. “h) instant connection with other fibre scopes where adaptors should not be required”—deleted.

Item No.17 (Intubating Fibre-optic Bronchoscope): CORRIGENDUM

1. Make model should have US-FDA or European CE certifications.
2. Intended for use in adult patients.
3. Field of view: 100°-120°
4. Depth of field: 3-50
5. Lamp life not less than 50 hours.

Item No.18 (CRRT-continuous renal replacement therapy): for ITU. CORRIGENDUM

1. Should have both US-FDA & European CE certifications.

Item No.19 (Haemodialysis Machine): for ITU.
SPECIFICATION
Operational Requirement

10. Machine should have facility for variable Sodium, Acetate, Bicarbonate, Regulated Ultra Filtration, Sequential Dialysis (Isolated UF)
36. Upgradable to future software developments and can be linked with Patient Data Management System

III. The blood pump should be able to run at least from 50 to 600ml/min and adaptable to standard A-V blood lines and should run even in the absence of water or dialysis flow.

Technical Specifications

Should have facility for conventional dialysis and SLED(Sustained Low Efficacy Dialysis).

Battery back-up for 20-30 minutes to run complete machine with heater supply Should have Na, Bicarbonate and UF profiling

Dialysate temperatures selectable between 35°C to 39°C or wider Variable conductivity setting between 12.5 to 15 mS/cm or wider

Should have variable dialysate flow at least 350-800 ml/min and should have increasing facility in steps

Should have facility to show trends curve of all parameter for 15-20 minutes

Heparin pump with adaptability of various sizes of syringes up to 30 ml with pump flow rate from 1-10 ml/hr(0.1 ml increments)

Ultra filtration 0.1 to 2.5 litres/hr or more. The in and out fluid circuit must be separated so that there is no chance of contamination in the event of membrane rupture.

Treatment parameter should be displayed by both graph and digitally .

Should have integrated heat and chemical disinfection facility with both short and long disinfection programme with day, night and week schedule

Should have accurate feedback control conductivity mixing technique. Should have drain facility.

Should have accurate UF control by flow by volume control measurement technique. Should have Blood Volume sensor.

All important data should be pre-setted so that machine can be used anytime without feeding data every time

Should have automatic self test facility Should have auto ON/OFF Facility

Should have user friendly display system

Machine can be connected to computer to feed all data and trouble shoot whenever any problem Blood pump rate at least from 50 – 600 ml/min or wider adaptable to standard A-V blood lines

Alarm for reverse Ultra filtration and also be able to do sequential dialysis On line NIBP recording

Alarms

Audio visual alarms on limit violation of conductivity, blood leak, air leak, trans-membrane pressure, Dialysis temperature, Haemodialysis Completion, end of disinfection process, bypass and blood pump stop, dialysate empty.

System Configuration Accessories, spares and consumables

Should disclose the free of cost accessory supply including dialyzer, tubing and Bacterial fil

Environmental factors

I. The unit shall be capable of being stored continuously in ambient temperature of 0 to 50°C and relative humidity of 15-90%

II. The unit shall be capable of operating continuously in ambient temperature of 10 to 40°C and relative humidity of 15-90%

Power Supply

Power input to be 220-240VAC, 50Hz fitted with Indian plug.

UPS of suitable rating with voltage regulation and spike protection for 30 minutes back up.

Standards, Safety and Training

I. Should be US FDA & CE ("ConformitéEuropéene") Certified.

II. Should carry warranty of 03 years.

III. CMC for next 5 years.

IV. Supplier should have adequate experience and maintenance of similar equipment in at least 3 to 4 major hospitals.

V. Comprehensive training for lab staff and support services till familiarity with the system.

VI. Should build local service facility with reasonable inventory to take care of the service part

VII. The service provider should have the necessary equipments recommended by the manufacturer

to carry out preventive maintenance test as per guidelines provided in the service/maintenance manual.

Documentation

I. User/Technical/Maintenance manuals to be supplied in English.

II. Certificate of calibration and inspection.

III. List of Equipments available for providing calibration and routine Preventive Maintenance

Support as per manufacturer documentation in service/technical manual.

IV. List of important spare parts and accessories with their part number and costing.

V. 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

Optional:

Bi-carbonate delivery by solid Bi-carbonate powders (dry system) and online clearance kT/V

Automatic diagnosis of malfunctioning with on line ability to show the faults with trouble (Technical service Mode)

**Note: Warranty and CMC includes everything in Specification of the equipment and all accessories and ancillaries.

Item No.20 (Central Monitoring System):

SPECIFICATION :

1. Central station with possibility for 4 to 16 patient interface using single CPU
2. Central station should be quoted with 22" display as standard.
3. Dual display with 16 bed options.
4. Central station should display up to 4 waveforms per bed and possibility of all leads of ECG
5. Central station should have ability to connect any multiple model of patient monitors from respective company including Telemetry monitors (ie mix of monitor models from same company)
6. 2 hrs full disclosure (waveform storage) for 4 continuous waveforms as standard feature. Option of expanding full disclosure to 28, 48 or 72 hrs. System should also have option of expanding waveform storage for up to 16 continuous waveforms.
7. It should have clinical applications design to support patient assessment and clinical document such as calliper measurements, ST analysis, trend review and ventilator management.
8. 16 bed alarm surveillance should be possible.
9. Central station should have up to 72 hrs of data storage
10. Should have Remote clinical application to view a patient's near real time monitoring data and/or view of full disclosure and event view from point of care, at the point of hospital intranet access or any point in between with web based

application designed to ensure clinicians to stay informed without visit to central station.

11. Browsing facility should be thru licensed base software & 16 bed license should be provided. Any non-licensed based software will not be acceptable.

12. Should have both US- FDA or European CE certifications.

Scope of supply must include:

- 22" display with CPU
- Dual Display.
- 16 bed license for Remote clinical application.
- UPS with 15min backup
- Networking cost to be included
- Networking should use good quality component (Layer 2 switches, racks, etc) from branded companies like HP, Cisco, etc.
- Laser Network Colour printer – 1per central station

Item No.21 (ICU Ventilator): CORRIGENDUM

1. Should have both US- FDA and European CE certifications.
2. Microprocessor controlled ICU Ventilator Suitable for pediatric and adult patient .
3. Ventilator should be able to provide TV-20-1OOOml or more, PEEP-0-60, I:E 1:4--5-IMV rate-1-35
4. Should have VC,PC,SIMV(VC & PC), Pressure Support, CPAP/PEEP, Apnoea/backup ventilation, Inverse ratio ventilation, advanced mode like—APRV,VTPC and Dual mode.
5. Display monitor : Touch Screen 12 inches or more showing standard waves and loops. Airway pressure,TV, MV, respiratory frequency,FIO2,COMPLIANCE AND RESISTANCE ,should also be displayed simultaneously in the monitor.
6. Should have integrated Air Compressor from the same manufacturer.
7. Humidifier should be Servo Control Heated humidifier with reusable chamber.
8. Integrated nebulizer should be standard with supply of required reusable nebulization chamber.
9. automatic leakage and compliance compensation.
10. Battery back up: minimum 45-60 minutes or more.
11. Should have standard hinged arm holder for holding the circuit.

12. Integrated EtCO2 and Capnography should display the waveforms in the same monitor.

13. The oxygen sensor should be non-consumable. If consumable then the cost of the oxygen cell (from OEM) should be mentioned separately and the supplier should provide the Oxygen cell for at least 7 years without any extra cost.

Item No.22 (Digital Mobile X-ray machine): CORRIGENDUM

1. " M . Any two of the three major components of the system like tube, generator, and detector should be from the same manufacturer."—substituted by "**The system should have US FDA and European CE and AERB approval for the whole system and all three major components like tube, generator and detector, on the date of closing of the tender."**

Item No.23(ICU Bed—Full Electrical & maneuverable): CORRIGENDUM

1. Should have US- FDA or European CE certifications.
2. No.14. Two Sections I.V.Pole i.e. one IV Pole, and one syringe pump & IV Pole.
3. Should have provision for Oxygen Cylinder holder.

Item No.24 (Activated Clotting time Machine): CORRIGENDUM

1. European CE or US-FDA approved.
2. Supplier should supply atleast 200 pieces of ACT tube along with machine and assure availability of same in local market for next two years.

Item No.25 (Sternotomy Saw-regular& Oscillating with driving unit):
CORRIGENDUM

1. European CE or US-FDA approved.
2. Should supply provisions for Oscillating Saw for redo sternotomy.

Item No.26 (SLR Digital Camera): Specifications

SLR Digital Camera for clinical Photography with Printer .

- Reputed make ; Printer repute make; US FDA or CE certified.
- Mega pixels 10 or more
- Still and movie mode, movie clip with audio unlimited.

- Auto and manual focus.
- Large LCD 2.5‖.
- Built in Flash.
- Self Timer.
- Lenses (detachable)

  i.18 -55 mm Standard

  ii.Zoom lens

  iii.Microlens for close

  up photographs
- Printer colour repute make
- Cards reader, cables/Leads for transfer of images to computer and for printing images.
- High Storage internal memory of stick to be mentioned.
- Carrying Case

Item No.27 (ECG machine): CORRIGENDUM

1. Should provide graphical presentation of ECG axis in print out.

Item No.28 (Xenon Surgical Head Light): CORRIGENDUM

1. Should have US- FDA or European CE certifications.

Item No.29 (Binocular Loupe): CORRIGENDUM

1. Make model should have US-FDA or European CE certifications.
2. Should be Prismatic type.

Item No.30 (Patient Warming Machine & Blanket): CORRIGENDUM.

1. "Built-in hour meter makes it easy to monitor usage for preventative maintenance "—DELETED.
2. European CE or US-FDA approved.
3. Should supply 5 boxes for Warming Blankets as accessories.

Item No.31 (Pulse-oxymeter): CORRIGENDUM.

1. Additional : Should have Signal Extraction Technology for accurate reading thru motion and low perfusion.
2. European CE or US-FDA approved.
3. Should have LCD display.
4. Should provide one extra adult senor apart from standard accessories.

Item No.32 (Syringe Pump): CORRIGENDUM.

1. European CE or US-FDA approved.
2. Shall accept 10-50 ml syringes.
3. Should have LCD display.

Item No.33 (Laryngoscope with all size blades): European CE or US-FDA approved.

Technical Specification-Laryngoscope(Various)	
I	**LARYNGOSCOPE ADULT AND PEDIATRIC**
1	Should supply 4 different size standard blades and one handle for adult and pediatric separately and one short stubby handle
2	Should be stainless Steel matt finished.
3	Should provide curved blades for both adult and pediatric.
4	An extra large blade should be supplied along with each scope.
5	Should be provided with battery

	6	Should provide spare LED bulb – 4 nos
II		**LARYNGOSCOPE NEONATAL**
	1	Should supply 2 different size standard blades and one handle.
	2	Should be stainless steel matt finished.
	3	Should provide straight blades - 2Nos each
	4	Should be provided with battery
	5	Should provide spare LED bulb – 4 nos

Item No.34 (Ambu Bag—adult/pediatric/infant): specifications:

1. Should have silicon rubber below to withstand autoclave at 134 degree C.
2. Should provide autoclavable face mask and Oxygen connecting tube.
3. Should be supplied with a carry pouch.
4. Should have a bag volume of 300 ml +/- 100 ml for infant: 500 ml +/- 100ml for Children: and 1700ml +/- 100ml for adults.
5. Should have an inspiratory resistance of 3.3 cm of water.
6. Should have an expiratory resistance of 2.2 cm of water.
7. It should have controlled flow rates and ventilation, and with reduced airway pressure.
8. Should have a port in the bag to connect Oxygen.

Item No.35 (Bain Circuit—adult & pediatric): specifications:

1. Should be reusable and provide all sizes of silicone face masks

Item No.36 (Intubating Laryngeal mask airway & Bougie): specifications:

a. Should accommodate endotracheal tube up to 8 mm .
b. Silicon cuff.
c. Steel handle.
d. Airway tube with anatomical curvature.
e. Size of 3,4,5.
f. Should be reusable
g. US FDA or European CE approved.
h. Should also quote for two intubationg Bougie with central channel along with.

Item No.37 (Rigid Bronchoscope with accessories and light source): specifications:

Description of function

A rigid bronchoscope is a straight, hollow, metal tube inserted to examine inside a patient‘s airway for abnormalities such as foreign bodies, bleeding, tumors, or inflammation.

Operational Requirements

Should be sturdy system complete with light source and all accessories.

Technical Specifications

Bronchoscope tube for use in adult in various standard sizes- approx 6.5, 7.5 & 8.5 and standard length (approx 42 cm).

Should have the following accessories:

Glass window plug , Rubber window plug, Sliding adapter for sealing cap and lens, Injection cannula for positive pressure assisted ventilation system. Instrument guide for aspiration catheter and pressure tamponade. Magnifier lens system, Adapter to respirator with sealing plug. Prismatic light defector with adapter for fiberoptic light cable.

System Configuration Accessories, spares and consumables

a) Fiberoptic
light cable
b) Halogen cold light source: 12 volt 50 watt, 15
volt, 150watt
c) Telescope compatible with unit. Forward
viewing straight – 0 Degree
d) Foreign body holding forceps -30
Degree c. Lateral – 70

e) Biopsy Forceps of alligator type and
fenestrated
f). Dormia basket
g) Constant Voltage stabilizer

Environmental Factors

Shall meet IEC-60601-1-2: 2001 (Or Equivalent BIS) General Requirements of Safety for Electromagnetic Compatibility or should comply with 89/366/EEC; EMC-directive.

The unit shall be capable of operating continuously in ambient temperature of 20-30 deg C and relative humidity of 15-90%

The unit shall be capable of being stored continuously in ambient temperature and relative humidity of 15-90%

Power Supply

Power input to be 220-240 VAC, 50Hz fitted with Indian plug

UPS of suitable rating with voltage regulation and spike protection for 60 minutes back up .

Standards, Safety and Training

Should be FDA, or CE, approved product.

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

Shall be certified to be meeting safety standard IEC 60601 -2-18 part 2 particular requirements for the safety of endoscopic equipment.

Documentation

User / Technical/ Maintenance manuals to be supplied in English.

List of important spares and accessories with their part number and costing.

Compliance Report to be submitted in a tabulated and point wise manner clearly mentioning the page / para numer or original catalogue / data sheet. Any point, if not substantiated with authenticated catalogue / manual, will not be considered.

Certificate of calibration and inspection.

Log book with instructions for daily, weekly, monthly and quarterly maintenance check list. The job description of the hospital technician and company service engineer should be clearly spelt out.

List of Equipments available for providing calibration and routine Preventive Maintenance Support, as per manufacturer documentation in service / technical manual.

Item No.38 (Central suction unit–floor): specifications:

The vacuum regulator will be step-less adjustable and have large vacuum gauge providing indication of the suction supplied by the regulator. Safety trap will be provided inside the jar to safeguard the regulator from overflowing. Different color options should be available. The unit will be consisting of two reusable 2000 ml shatter resistant bottle, each made up of poly carbonate material and fully autoclavable at 134 degree centigrade. All the above items should be mounted on a Trolley having free moving castor wheels.

Item No.39 (Central suction unit –wall mounted): specifications:
Ward and ICU vacuum Unit shall be wall mounted and shall consists of followings with same make :- • Suction Controller/ Regulator • Collection bottle 600 ml with mounting arrangement. The vacuum regulator will be step-less adjustable and have large vacuum gauge providing indication of the suction supplied by the regulator. Safety trap shall be provided inside the jar to safeguard the regulator from overflowing. Different color options should be available. The unit will be consisting of reusable 600 ml shatter resistant bottle, each made up of poly carbonate material and fully auto cleavable at 134 degree centigrade.

Item No.40 (X-ray LED view Box): CORRIGENDUM.

1. Should have large screen enabling viewing of multiple CT/MRI film together.

Item No.41 (Refrigerator): SPECIFICATION

Pharmaceutical Refrigerator with uniform 4 Deg. C Temp.

1 Description of Function

Laboratory Refrigerator is used to store samples, medicines, blood bags etc under controlled temperature.

Operational Requirements

System required with weekly chart recorder and digital displays.

Capacity of storage: 300 litres or more

Technical Specifications

Temp range-should have adjustable temperature control range from +1 degree to +8 degree C, factory preset at 4 degree C.

Refrigerator system-
a)The system should have high density CFC –free urethane foam insulation to protect cabinet from ambient temperature fluctuation.
b)The system should have positive, forced, air circulation to maintain temperature uniformity at all shelf levels, with quick recovery +/- 1 degree C.
c)The system should have sensors for activating automatic defrost cycle to minimize the frost build up.
d)The system should have automatic condensate removal with no requirement for separate drainage lines.

Internal construction should be made up of high grade stainless steel (min 22 G) External construction Corrosion resistant sheet at least I mm thickness.

Internal Temp Control

a)System should have temperature control range from +1 degree C to +8 degree C. b)Temperature control resolution should be better than 0.1 degree C. c)Cooling down time of max of 150 min on half load

External ambient temp should perform in ambient temp up to +43 degree C.

Door System should lockable double glass doors for better safety

Safety system:
system should have large and clear Digital displays for the set/run parameters.
The system should have weekly chart recorder to record temperature chages with battery back up.
The system should have key operated set point for the added security
d.Battery Charger should be provided with details of battery No.: V:AH.

Alarms.
a)System should have audible/visual warnings for over-temperature under temperature and power failure with visual status reports on critical functions.
b)System should hace battery backup and connections for remote alarm contacts

Should have adjustments for uneven bases. The adjustments should be easy to use like rotating a screw at the legs in the base.

Scratch resistant internal lining of the cabinet (stainless steel or aluminium).

Should have 5-6 rolled out type drawers of stainless steel of 22G

System Configuration Accessories, spares and consumables

System as specified-

Environmental factors

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

The unit shall be capable of operating continuously in ambient temperature of 10 -40deg C and relative humidity of 15-90%

6	**Power Supply**
	Power input to be 220-240VAC, 50Hz fitted with Indian plug
	Voltage corrector/stabilizer of appropriate ratings meeting ISI Specifications.(Input 160-260 V and output 220-240 V and 50 Hz)
	Standards, Safety and Training
	Should be FDA or European CE approved product
	Electrical safety conforms to standards for electrical safety IEC-60601 / IS-13450
	Documentation
	User/Technical/Maintenance manuals to be supplied in English.
	Certificate of calibration and inspection.

Item No.44(Horizontal Square autoclave: CORRIGENDUM

1- Horizontal Rectangular High Pressure High Vacuum steam Sterilizer.
2- Chamber size shall be minimum of 2 feet width x 2 feet height x 4 feet length.
3- Should be operated on 400-440V, 3 phase with neutral, AC power supply.
4- Chamber volume shall be minimum of 420 liters.
5- Steam generator with suitable volume (~~shallbeminimumof60liters –~~DELETED)and should be fitted below the sterilizer chamber (~~withsuitableelectricalheaterloadof18KW –~~DELETED), to produce steam to sterilizer.
6- The sterilizer shall have single door vertical/horizontal automatic sliding door ~~(Hingetype)withradiallockingusingshootingbolt –~~DELETED) having high pressure locking safety facility and made of good quality stainless steel 316L (~~304~~ –DELETED) quality. Should provide heat resistant SILICON door gasket withstand upto140 Deg.C.
7- The sterilizer shall have to draw the water, automatically,when needed in the in built boiler.
8- Thickness of chamber of sterilizer shall be minimum 6mm and to be made of stainless steel 316L (~~qualityiscapabletowithstandthenegativepressure(vaccum)of24-26''Hgcreatedbythevaccumpump---~~ DELETED).
9- Thickness of door of sterilizer shall be minimum of 12 mm and to be made of stainless steel 316L quality.
10- Sterilizer jacket shall be made of (~~Boiler –~~DELETED) 316L quality steel plate with a material thickness of 6-8mm.
11- ~~(Glasswool insulation thickness –~~DELETED). Sterilizer should be equipped with chloride free mineral wool with thickness of 50 to 80 mm. Insulation cover shall be made of aluminium to ensure lesser heat dessipation. (~~goodqualitystainlesssteel304quality –~~DELETED).
12- All connecting pipes shall be made of good quality stainless steel.
13- ~~Stand~~ Frames shall be made of stainless steel.
14- The unit shall be fitted with suitable water ring Vacuum pump,(~~motorcapacity:3 HP –~~DELETED),to create high vacuum ~~of26"hg~~ for efficient drying and sterilization of loads.
15- Pressure gauge range shall be 0to6Kg./cm2.
16- ~~Compoundgaugerangeshallbe 1to6Kg/cm2~~.--DELETED
17- Safety valve range shall be 0.3to3.5 kg/cm2.
18- The unit shall be capable of being stored continuously in ambient temperature of 0-50 Deg.C and relative humidity of 15-90%.
19- Suitable validation port shall be provided.
20- Working temperature of sterilizer is 121-134 Deg.C and the corresponding pressure is 1.2-2.1kg/cm2.
21- Safety features of sterilizers: Door locking facility, Low water protection system, Pressure cut off facility and all other necessary safety features.
22- Equipment shall have no sharp edges, will be securely mounted and would provide adequate protection against moving and electrically energized parts.
23- Controls (e.g.switches,knobs) shall be visible and clearly identified.
24- Labels and markings shall be clear and visible.
25- Equipment shall be simple to use, operate and maintain (Userfriendly). It shall be designed for easy access to serviceable parts.
26- AUTOMATIC OPERATION WITH PRINTER: (A) The sterilizer shall be fitted with suitable PLC (Microprocessor) for fully automatic cycle operation in stead of manual operating valve with following Features: (i)PLC based microprocessor which is incorporated with the sterilizer.(ii)Digital display of Chamber Pressure, temperature, cycle no., Batch no., Time & date, alarm indicator, Low water indicator. (iii)Provision of 'error code analysis' in built, Leak test, Bowie & Dick and Standard Process. (B)Printer: Printer that shall automatically and continuously monitor and record dates, time of day, load, identification no. and operating parameters. (C) The system shall be designed, primarily, for carrying out the following: Leak test cycle¬ Bowie¬ & Dick Process Standard Process¬High pressure and HighVacuumProcess–vacuumholding.¬

27-STANDARDS&SAFETY: (A)The unit should be manufactured as per EN 285 Standard (~~ISspecificationsMarkISI:~~3829andalsoshouldbearthecertification—DELETED) have European CE with Medical Device Directive 93/42/EEC as amended by Directive 2007/47/EC or USFDA Certified.

Steriizer should meet the following directives.

i. Medical Device Directive 93/42/EEC as amended by Directive 2007/47/EC
ii.Pressure Equipment Directive 97/23/EC
iii. Sterilization - Steam sterilizes – Large Sterilizers EN 285 : 2006
iv. Quality Management Systems Requirements EN ISO 9001 : 2008
v. Medical Devices-Quality management systems Requirements for regulatory purposes EN ISO 13485:2003

(B)~~Electricalsafetyshallconformstostandardsforelectricalsafety IEC-60601-2-25Safetyof electrocardiograms(OREQUIVALENTBISStandard).(C)Electricalsafetyshallconformstostandardsforele ctricalsafetyIEC-60601/IS-12450~~ –DELETED
(D)Equipment performance should not be affected by electromagnetic interference radiated or conducted through power lines from another device. (E) Necessary operational training/day-to- day maintenance training shall be imparted to our staff after commissioning of the equipment at site.
28-AFTERSALESSERVICE:(A) After-sales-service/maintenance shall be provided from your factory trained engineer. (B) Response time from time of lodging the complaint shall be 24-36 hours and total up time in a year shall be not less than 97% including PPM. (C)Back to back warranty to be taken by the supplier from the principal to supply spares for a minimum period 10 year.
(D)Should have service facility.The service provider should have the necessary equipments Recommended by the manufacturer to carry out preventive maintenance test as per guide lines provided in the service/maintenance manual.
29- SPARES AND ACESSORIES TO BE PROVIDED ALONG WITH EQUIPMENT: (A) Spare fuses 10 nos. shall be provided, if fuses are used. (B)Spare water reading glass and washers shall be provided (C)One number single water still (distillation) with following features: Electrically operated water still capable of providing 10 liter/hour pyrogen free distilled water, made of stainless steel,having immersion waterheater (heatingcoils)with low water protection (low water cut off device). (D) 60 liter plastic tank To store distilled water, fitted with two outlet taps to with draw water.

30-DOCUMENTATION–SHALL BE PROVIDED AT THE TIME OF DELIVERY:
(A)Operator's/instruction/user manual in English should be provided.
~~(B)Installationqualification(C)Operationqualification(D)Designqualification(E)Performancequalificatio n(F)Hydraulictestcertificate(G)Materialtestcertificate(H)Gaugecalibrationcertificate(I)Mastergaugecalib rationcertificate —~~DELETED. (J) Warranty certificate

31-Vendor has to support the specifications with manufacturer's brochure failing which offer may be rejected. Vendor has to demonstrate the equipment ~~atHyderabad~~, within specified time limit, if asked for; failing which offer will be rejected.
32-Installation (Erection&commissioning) and training to be provided by vendor.

Item No.45 (ETO gas sterilzer): SPECIFICATION

The ETO gas sterilizer should be fully automatic type for sterilization of heat sensitive goods such as anaesthetic tubing and other plastic disposable materials etc.
The sterilization chamber should be double walled, corrosion and gas resistant of suitable alloy. The inner surface should be smoothly finished to minimize gas deposits. The chamber shall be insulated against heat emission and the jacket shall be connected to the warm water circulation arrangement.
The sterilizer door shall have a quick release locking arrangement with door opening to the side. Suitable safety interlocking arrangement shall be provided for the door so that the sterilization process does not start unless the door is properly locked in position and during the programme run it should not open.
The sterilizer shall be provided with a suitable vaccume pump and gas trap to separate and evacuate the gas.
The sterilizer shall be provided with an automatic programmable panel with memory for preset operating sequence of all programs of operation. Monitoring instruments should be provided with the ETO for proper operation and monitoring of sterilizing process such as pressure manometer, thermometer, limit selector for temperature and pressure etc.

The ETO sterilizer should be able to operate for the minimum essential following cycles programmes:

a. Sterilization cycle for heat sensitive objects that ensure temperature from 40-75 ^{O}C with subsequent aeration for protection of the operating personnel.
b. Aeration cycle/programme to extract residual gas out of the sterilized objects after each sterilization cycle.
c. Automatic chamber evacuation cycle with subsequent venting before releasing the door lock for opening, thereby prohibiting exposure of the operating personnel by gas dissolving from the chamber walls during shutdown period.
d. Gas disposal arrangement / catalytic converter.

The ETO sterilizer shall be equipped with the following accessories (but not limited to): Capacity: To be decided based up on estimated workload.

a. Sterilization basket of suitable size 1 No.

b. ETO gas cartridges 25 Nos.

[Gas cartridges should be EPA (Environmental Protection Agency Certified)]

TECHNICAL DATA:

a.	Sterilization gas	:	Ethylene oxide.
b.	Sterilization method	:	Cold sterilization of heat sensitive materials.
c.	Operating temp. Range	:	40 to 75 ^{O}C
d.	No. of doors	:	One.

Heat sealing machine (to be quoted along with)

The heat sealing machine shall be foot operated, electric heating type for sealing plastic packets/ pouches containing surgical items like sterile needles, gauge, cotton etc. to maintain sterility of the goods for surgery. The machine shall operate on thermostatic feedback system which should be able to switch off automatically as soon as it attains the required/ set temperature.

Temperature controller:	Suitable for controlling temperature up to 200 ^{O}C
Power supply:	415/220V/3 Ph/50Hz AC

Item No.48 (Ultrasonic Instrument Washer): SPECIFICATION

- The units should be a compact free-standing bench model, with a built-in tank manufactured from high-quality (316) stainless steel and a solid-state generator that sends ultrasonic (approx 42,000 cycles per second) impulses through wash water containing detergent and electrical heating; microprocessor controlled display with memory time and temperature functions.
- The electrical energy should be transformed into sound waves by transducers, fixed to the bottom of the tank.
- The tank is made of solid stainless steel (316).
- The ultrasonic cleaner should have a display and control which could be easily seen and placed above any liquid for safety and reliability.
- It should have digital read out timer and temperature setting (up to +69° C (temperature adjustable from 20 to 69 °C) monitoring.
- Degassing facility included.
- Tank of stainless steel with internal dimensions
  495 x 290 x 150 mm (L x W x D)—approx.
  – Voltage: 210-240V
  – Capacity: 18--20 liters.
  Ultrasonic cleaner should be European CE-marked.

Ultrasonic cleaner should supplied with Wire mesh basket, 471x271x130mm & Stainless steel lid.

Item No.49 (Hot Air Oven): SPECIFICATION.

SPECIFICATION FOR HOT AIR OVEN

Sl no	Item	Specification
1.	Capacity	Approximately 90 litres
2.	Shelves	1. Stainless steel construction: 3 nos. 2. Must have pilot light on shelves
3.	Temperature Range	1. 50° C to 250°C 2. Built in thermometer
4.	Walls(three layered)	1. Outer covered with stainless steel 2. Inner two walls made of stainless steel with glass wool insulation in between of minimum15mm thickness.
5.	Size	Approximately 18" X 18" X 18"
6.	Controls	1. Thermostat control 2. Digital display 3. Rotary control
7.	Heating element	Stainless steel. U shaped

8.	Air circulation fan	Must be present
9.	Power cord	Must be of acceptable durability, quality, length and current carrying capacity and should be compatible with Indian standard power socket
10.	Electrical rating	Unit should function with 200-230Vac, 50/60 Hz input power supply.
11.	Certification	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.
12.	Warranty	The Equipment including monitor and all accessories including bought out items should be under WARRANTY for a period of TWO YEARS and comprehensive maintenance contract for THREE YEARS after successful commissioning.
13.	User satisfaction certification	User certification from two reputed multispecialty hospitals certifying that they have used the same device and satisfied by its use to be provided
14.	Installation, commissioning, testing, maintenance and after sales service	1) The equipment and all accessories should be transported, installed, tested and commissioned free of cost. 2) All spare parts and consumables should be available with supplier or principals for a period of at least 10 years. 3) In case of any change of dealership in future the principals should undertake the responsibility of maintaining the equipment through the next dealer.

Item No.50 (Automatic Washing Machine and disinfector): **Required Specifications**

1. **Chamber Capacity:** Operational Volume should be 220 – 240 Lit. Washer Disinfector should be able to accommodate 5 level cart per cycle. The chamber should be made of S.S. 316L quality with electro polished washed surfaces. The chamber edges should not have the pockets & folds so as to avoid bacterial growth. The wash chamber should also be fitted with bright light for clear visibility of the washing process.
2. **Chamber construction:** Chamber should be made of S.S.316L quality.
3. **Standards & Norms:**

   The washer should be European CE or US- FDA Certified, and should meet following standards.
   - MDD 93/42/EEC (Medical Device Directive)
   - EMC (Electromagnetic Compatibility)
   - EN ISO 15883

4. **Washer should have following features:**

   - Should be equipped with process tank.For shortest possible filling and draining phases, higher capacity quick opening valves should be used so that short total process time is achieved. The design should focus on saving the environment through reduced consumptions of all utilities.
   - Cleansable spray arms should be located at the top and bottom of the chamber.
   - Wash carts should be equipped with cleansable spray arms between each shelf so as to facilitate water to reach all the surfaces which needs to be cleaned.
   - Injection wash carts should be automatically connect to water and drying air in order to clean and dry the inside of the tubular instrument.
   - The drying air should be pre-heated in a heat exchanger, which also should have a condenser for the outgoing air. This energy-saving process is necessary for shorter drying time and to reduced the energy consumption.
   - The washer should be equipped with independent temperature monitoring and validation test port according to the latest EN ISO 15883.
   - Circulating water pressure monitoring system should be available with the unit.
   - Data interface RS232 + RS485 should be available. Also the differential pressure monitoring of HEPA filter for drying should be available.
   - All electrical components should be easily accessible preferably via a sliding cabinet for easy service - ergonomic design.
   - Washer should be equipped with audible alarm that alerts if error code occurs.

5. **Doors**: Fall back type Double door should beequipped with double laminated glass doors for a full view-in-process and optimal sound and heat isolation. The door should be fall back type and should serve as loading platform.

6. **Dosing Pumps:** The washer should have 2 dosing pump for process chemicals, instrument lubricants/ enzymatic cleaners.

7. **Process Phase:** The washer should perform pre-rinsing, cleaning, post-rinsing, thermal disinfection, final rinsing and drying phases. Validated programs are secured by access code. Detergents and rinse agents should be automatically dispensed during the cycle.

8. **Accessories:** The washer should be supplied with wash cart for General surgical instruments. It should also have the loading/unloading trolley for these carts.

9. **Drying:** The washer should have fast and efficient energy saving "Dual drying mechanism" with heatexchanger, fan, condensor and HEPA-filter. The unit should have the drying sensor to ensure the drying time as per the wash load.

Item No.52 (BIPAP machine): SPECIFICATION

Technical specification of Non-invasive Ventilator (BiPAP) Machine for Adult/Paediatrics		
Should be USFDA or European CE approved		
Non invasive ventilator with advanced technology constant speed blower valve technology		
Mode of operations available:		
	a) Spontaneous (S)	
	b) Timed (T)	
	c) CPAP	
	d) Spontaneous/Timed (S/T)	
	e) Assisted Pressure Control Ventilation (APCV)	
Should have the following pressure ranges:		
	a) IPAP Pressure	4 to 30 cm H2O or more
	b) EPAP Pressure	4 to 20 cm H2O or more
	c) Rise Time	25-600 ms
	d) Inspiratory Time Setting	0.2-0.4 sec
	e) Respiratory Rate	2-50bpm
	f) Target Tidal Volume	100-2000ml/50-1000ml
Should be able to display patient data like:		
	a) Delivered Pressure	
	b) VT	
	c) Leak	
	d) Min Ventilation	
	e) Set Mode	
	f) Resp. Rate	
	s) Graphs for pressure & flow	

Should have advanced technology for triggering and cycling throughout changing breathing pattern &Leak		
Unit offered should have the latest constant speed blower with valve technology to ensure better patient-machine synchronization		
Should be supported with inbuilt expiratory sensor at patient end and patient circuit with sensor tubing should be supplied with the machine		
Should have alarm for:		
	a) High Pressure	
	b) Apnea	
	c) Low Minute Ventilation	
	d) Low VTe	
	e) High Leak	
	f) Power off	
Input Power	**100 VAC-230 VAC** at **50-60 Hz**	
Machine should be supplied with following accessories:		
	a) Reusable Patient Circuit with Senor Tube	
	b) NIV Masks (small, medium, large)	
	c) Power Cord	
	d) User Manual	
Machine should be covered under 3 year warranty		
List of consumables if any with price frozen for 5 years should be quoted separately.		
Bidder should submit point wise compliance statement		
Should have minimum running cost , please quote cost of		
	a) Consumables	
	b) AMC	
Bidder should submit user satisfactory reports for at least two institutes / hospital of repute		

Item No.54 (Nebulizer): specification

Ultrasonic Nebulizer

Description

Nebulizer is a device used to administer medication to people in forms of a liquid mist to the airways. It is commonly used in treating cystic fibrosis, asthma, and other respiratory diseases.

Operational Requirements

Heavy duty compact Nebulizer is required.

Technical Specifications

Technical Specifications Nebuliser

Compact, light weight, low noise.

Durable long life compressor. Suitable for heavy duty/ institutional (hospital) use, should be able to run uninterruptedly for one hour or more, Max Press=2.0-2.5 bars.

Should produce particle of size 1-5 micron.

Aluminium cabinet painted with epoxy powder.

Piston-type electric aspirator that offers high performance and great durability.

Protective thermal cut out relay.

Air delivery rate app. 15 L/min.

24 hours continuous work for hospital use.

System Configuration Accessories, spares and consumables

None.

Environmental Factors

Shall meet IEC-60601-1-2; 2001 9Or Equivalent BIS) General Requirements of Safety for Electromagnetic Compatibility or should comply with 89/366/EEC;EMC- directive.

The unit shall be capable of being stored continuously in ambient temperature and relative humidity of 15-90%.

The unit shall be capable of operating continuously in ambient temperature of 20-30 deg C and relative humidity of 15-90%.

Power Supply

Power input to be 220-240 VAC, 50Hz fitted with Indian plug.

UPS of suitable rating with voltage regulation, spike protection and maintenance free batteries for 60 minutes back up.

Standards, Safety and Training

Should be FDA, CE, UL or BIS approved product.
Training as required.

Documentation

User/Technical/Maintenance manuals to be supplied in English.
List of important spare parts and accessories with their part number and costing.
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.

List of Equipments available for providing calibration and routine

Preventive Maintenance Support, as per manufacturer documentation in

service/technical manual.

Certificate of calibration and inspection.
Log book with instruction for daily, weekly, monthly and quarterly maintenance check list. The job description of the hospital technician and company service engineer should be clearly spelt out.

Item No.55 (RO water plant for Haemodialysis): SPECIFICATION

1. It should have capacity to produce 250 Litre/Hour post RO water.
2. Should be of Microprocessor based double pass RO system.
3. It should have Raw water tank (6000 litres capacity), Multi grade Filter, Iron removal, Charcoal (twin) Filter, softener, Reverse Osmosis,Ultra Violet Steriliser, RO water Storage tank of 750 litres(stainless steel with conicle bottom and heater to heat water up to 100degree C with thermal insulation jacket& twin delivery pump (should be of stainless steel) etc. and should have internal plumbing for post RO water supply to each machine by Food grade PVC pipeline with character to sustain heat up to 93 degree centigrade for heat disinfection. (The pre-treatment and RO system should be fully automatic)
4. Should have pre RO micron filter for Bacterial protection
5. It should have Rinse and Flush facility for the membranes in R.O. Unit
6. It should have Conductivity meter, Pressure Gauge, Flow indicator
7. There should be adjustments for output for water saving depending on the number of machines in use.
8. Should have BIS standard / for assembled component the quality standard should be as per approval of Appropriate standard authority related to used component.
9. It should have Stainless Steel Connectors for Water Outlet at Dialysis machine connecting points.
10. The chemical, contaminants, endotoxin and microbial tests of post R.O. water should pass AAMI standards
11. The pipeline for RO water supply along with the connectors and the drainage pipe materials will be supplied by the RO vendor to the person responsible for the Turn key project of the Dialysis unit. The maintenance of the pipeline will be done by RO supplier.
12. Should carry warranty of 3(THREE) years.
13. Rate of CMC for next 5 years.

Optional:

Should have display for supply and temperature of Permeate & for Raw Water It should have fully automatic disinfection system.

**Note: Warranty and CMC includes everything in Specification of the equipment and all accessories and ancillaries in Turn key.

Item No.56 (LED examination Light):

Specifications

1. Examination light on a mobile stand with low maintenance.
2. Light should be LED technology.
3. Total LEDs should be minimum 6nos or more.
4. Intensity should be minimum 55000 Lux or more.
5. Brightness adjustment: 20-100%.
6. Minimum color temperature: 4500K or more
7. Color rendering index R9 (red): 90
8. Color rendering index Ra (red): 95
9. Life time of LED should be more than 25000 hours.
10. Total weight of the light should not be more than 25kg.
11. Should be supplied with sterilisable handle.
12. Power supply: 220-240V AC
13. Light must have US FDA or European CE certification.

Item No.58(Bed side table with locker): SPECIFICATION

1. Overall Size: 16(L) X 16(W) X 32 (H) inches(approx).
2. CRCA Sheet Constructions . Having one Box and one Drawer.
3. S.S. Top with Three side Raise edges.
4. Finish Pre-Treated and Epoxy powder Coated.
5. Certificate :-CE , ISO.

Item No.59(Motorized Suction machine): CORRIGENDUM

1. Mobile on 3 or 4(instead of 4) antistatic Castors.

Item No.61(Dressing Trolley):
SPECIFICATION

1. Approximate Size: 76 x 51 x 90 cm
2. Tubular frame Powder coated with two heavy S.S Shelves.
3. Mounted as four castors 20 cm.
4. Protective railing on four side on both shelves.
5. Available with Bowl & Bucket.

ADDITIONAL ITEMS:

Item No.63(High Frequency Oscillatory Neonatal Ventillator): Additional Item

Specifications

- Advanced microprocessor based continuous flow, pressure limited, time cycled ventilator for very low body weight infants (premature, new-borns) upto maximum 20 kg.

- Machine should supply with medical grade compressor. Machine and compressor should be from the same manufacturer to avoid the mismatch of air flow requirement.

- **Machine and compressor both should have US FDA and European CE certification**.

- Should have **minimum 10" colour touch screen display**. Loops, curves, wave forms, logbook should be available.

- Should have both invasive and non-invasive ventilation modes available in the same machine for use on neonatal and premature patients with suitable accessories.

- The ventilator should have a simple pneumatic nebuliser which should be inspiration synchronised and volume compensated. This should be supplied as standard scope of supply.

- The ventilator should be supplied with heated servo controlled humidifier F&P MR850 with suitable hoses and chambers for neonatal patients.

- Flow sensor :
    - The flow sensor should be of heated wire technology for higher accuracy.

- The ventilator should have ventilation modes as below:
    - Pressure Controlled – Control, Assist, SIMV
    - CPAP
    - **HFOV (Control + HFOV and CPAP + HFOV)**
    - **Pressure Support Ventilation (PSV)with Volume Guarantee (VG**).
    - **Nasal CPAP**

- Should have selection of measurement conditions for NTPD or BTPS. The real time data should be monitored at Y-piece for:
    - Pressure - Peak, Plateau, Mean, CPAP/PEEP
    - Expired Tidal Volume (Monitored), Expired Minute Volume, leakage in %
    - Frequency/ Rate - Set (Inspiratory), Spontaneous MV in %, total , I:E ratio
    - FiO2
    - Lung Mechanics - Resistance, Compliance , C20/C, Time constant Tc, RVR
    - Integrated graphical trend
    - Integrated alarm log of upto 100 alarms on First in First Out basis

- Should have automatic alarm settings for :
    - Disconnection, Tube blocked, Ventilation hose kinked, High/low Pressure, High/low Minute Volume, High Rate, High Tidal Volume, Apnoea / apnoea alarm time, High/low O2 % (automatic settings), Oxygen line failure, Compressed air failure, Total electronic failure (with error code)

- Machine should be supplied along with appropriate UPS for minimum 1hr battery backup.

- **Scope of supply should include**
    - Basic Unit with Trolley& hinged arm.
    - Compressor—1no
    - Servo controlled humidifier (F&P MR 850) with reusable chamber—1no
    - Silicon heated Hose set for use with MR850 for neonatal patients—1no
    - Heated Flow sensor -- 5 nos
    - Disposable Nasal CPAP Set:
        - 1x Prong, medium (pack of 10 pcs.)
        - 1x Prong, medium plus (pack of 10 pcs.)
        - 1x NeoMask, M (pack of 10 pcs.)
        - 1x Cap, L (pack of 5 pcs.)
        - 1 x Cap, XL (pack of 5 pcs.)
    - Oxygen connecting Hose – 3 meters —1no
    - Air connecting Hose – 3 meters—1no
    - Neonatal test lung with variable compliance and resistance—1no
    - Instruction Manual —1no

Item No.64 (OT Boom/Pendant for anesthesia): Additional Item.

SPECIFICATION

1.1 General Standard of Execution, Regulations

The corresponding requirements of the European Norm ISO EN 11197 (special requirements for the safety of medical supply units) Medical Device Directive (MDD) 93/42 EEC as well as the relevant rules and regulations of the law for technical work equipment (equipment safety law) and ISO/IEC (see following table) in their valid version must be fulfilled through the following specified equipment.

1.2 Individual Standards and Regulations

Standards	Basic requirement of the Medical Device Directive (MDD 93/42/EWG) • DIN EN 60601-1 / medical electrical devices • DIN EN 60601-1-2 / medical electrical devices • DIN EN 793 / medical supply units • EN ISO 14071 / medical products – Risk analysis
Classification	Class II b acc. MD Directive 93/42/EWG appendix IX UMDNS Code: 18-046

The equipment must be European CE-certified or has got the approval of the European regulatory authority according to MDD.
The quotation must include all facilities and equipment components, including necessary accessories which are required for the functionality of the equipment.
Variations or alternatives to the above-mentioned standards or to the following specified scope of performance must be specifically marked with the abbreviations ”Var.” or ”Alt”.

2. Scope of Medical Supply Unit Equipment

The supply unit must meet the high standards for a safe and reliable operation *in the OR.*
The supply unit must have upgrading capability of new functions for adaptation to future requirements.
All surfaces resistant against corrosion and disinfectants.
The functional units of the supply unit must be completely assembled and tested by the manufacturer.

2.1 General Requirements for Ceiling Supply Units

Ergonomic, optimized supply unit consisting of the following functional units:

- Ceiling fixture set for installation to concrete ceiling structure.
- Ceiling interface for connection of supply unit with electrics and gases delivered from site.
- Horizontal swiveling arm system.
- *Media column* with terminal units for medical gas supply/gas evacuation, high- and low voltage power supply according to specification.
- Workstation components such as shelves, drawers, extension arms and equipment holders for ergonomic workplace design according to customer requirements.
- Friction brakes for fixation of adjusted arm position.
- Complete unit including intermediate *ceiling construction and installation*.

The previously mentioned functional units must be coordinated mechanically, functionally and ergonomically, thus presenting a complete medical supply unit.

3 Scope of Delivery- and Technical Specification

3.1 Basic Units

3.1.1 CSU Light Load Arm System;
Arm Length 5*00+500 mm* with Media Column *1000mm*

- Arm system with two horizontal swivel arms, intermediate bearing and ceiling bearing.
- Action radius 1000 mm
- Load capacity on media column min. 120 kg
- Height of media column approx. 1000mm

3.1.2 Media Column

- Height of media column 1000 mm
- Fitting of installation components possible on 3 sides.
- Pivot bearing integrated into media column.
- Swivel range 320 - 330 °
- Adaptation to ceiling height via distance tube attached to arm system.
- Mounting system for attachment of workstation components e.g. shelves, drawers, side arms, equipment holders from front side.

- Working height of workstation components infinitely variable on media column.
- Set of control elements, consisting of 2 handles for comfortable operation of the supply unit.
- Ergonomically designed handles to support user for positioning the system.
- One-piece front plates without gaps.
- Surfaces resistant against disinfectants.

3.2 Installation Components

3.2.1 Gas Fittings

- Media column equipped with:
  - 2 x O2 (oxygen)
  - 1 x N2O (Nitrous Oxide)
  - 1 x CO2 (Carbon Di-oxide)
  - 1 x Air 4/5 (compressed air 4/5 bar)
  - 2 x VAC (vacuum)
  - 1 x AGSS (Anaesthesia Gas Scavenging System)

3.2.2 High voltage electrical installation

- Media column equipped with:
  - 10x electrical 5/15 Amp universal socket.

3.2.3 Low voltage electrical installation

- Media column equipped with:
  - 2 x RJ 45 Socket.

3.3 Workstation Components

3.3.1 Shelf for mounting at front rail system of Media Column

- Shelf for attachment to front rail system of previously described media column - 1 no.
- Surface area 530 x 480 mm (W x D)

- Load capacity min. 40 kg
- Thickness max. 22 mm
- Material: Aluminium
- Smooth, scratchproof, fade-resistant and antistatic surface.
- No sharp edges and grooves.
- Integrated rubber elements at all 4 edges for injury prevention.
- With curved, ergonomic design.
- Side rails should be provided with each shelf.

3.3.2 Drawer for mounting at shelf – 1 Pcs.

- Drawer for attachment to shelf, as previously described dimensions 430 x 340 x 170 mm (W x D x H)
- Load capacity min. 7 kg
- Special drawer runner system with exceptionally smooth sliding function self-closing function.
- Facilitated cleaning by easy removal capability of complete drawer removable front fascia.
- smooth surfaces without protruding handles .
- Future exchange of front fascia possible due to retro-fit capability

3.3.3 CVP-Pole – 1 Pcs.

- Support tube with height adjustable extension pole
- Length of support tube min. 1000 mm
- Length of extension pole min. 800 mm
- Diameter of receiving pole 25mm.
- Max load 13.5 kg
- 4 Hooks, cross orientation, for accommodation of infusion bottles

3.3.4 Double articulated arm (300+200mm) for mounting at front rail system of Media column for CVP pole – 1 pc

- For attachment of a small equipment pole Ø25 mm or CVP-pole
- with locking screw on each swivel joint
- unrestricted horizontal movement around support rail axis
- Length min. 500 mm
- Load capacity min. 35 kg

3.3.5 Double articulated arm (300 mm/200 mm elements)for mounting at front rail system of Media column for monitor – 1 pc

- For attachment of monitor with slide adapter.
- with locking screw on each swivel joint
- unrestricted horizontal movement around support rail axis
- *overall Length min. 500 mm*
- *Load capacity min. 15 kg*

3.4 Pre-installation components

3.4.1 Ceiling fixture set *anchor / bolt* mounting for ceiling supply unit

- adaptable on site to height of false ceiling, containing all necessary fixation components, e.g. sub-ceiling flange, distance tubes, reinforcement set, inter-connecting flange

Item No.65 (OT Boom/Pendant for Perfusion): Additional Item.

SPECIFICATION

1.1 General Standard of Execution, Regulations

The corresponding requirements of the European Norm ISO EN 11197 (special requirements for the safety of medical supply units) Medical Device Directive (MDD) 93/42 EEC as well as the relevant rules and regulations of the law for technical work equipment (equipment safety law) and ISO/IEC (see following table) in their valid version must be fulfilled through the following specified equipment.

1.2 Individual Standards and Regulations

Standards	Basic requirement of the Medical Device Directive (MDD 93/42/EWG) • DIN EN 60601-1 / medical electrical devices • DIN EN 60601-1-2 / medical electrical devices • DIN EN 793 / medical supply units • EN ISO 14071 / medical products – Risk analysis
Classification	Class II b acc. MD Directive 93/42/EWG appendix IX UMDNS Code: 18-046

The equipment must be European CE-certified or has got the approval of the European regulatory authority according to MDD.

The quotation must include all facilities and equipment components, including necessary accessories which are required for the functionality of the equipment.
Variations or alternatives to the above-mentioned standards or to the following specified scope of performance must be specifically marked with the abbreviations ”Var.” or ”Alt”.

2. Scope of Medical Supply Unit Equipment

The supply unit must meet the high standards for a safe and reliable operation *in the OR.*
The supply unit must have upgrading capability of new functions for adaptation to future requirements.
All surfaces resistant against corrosion and disinfectants.
The functional units of the supply unit must be completely assembled and tested by the manufacturer.

2.1 General Requirements for Ceiling Supply Units

Ergonomic, optimized supply unit consisting of the following functional units:

- Ceiling fixture set for installation to concrete ceiling structure.
- Ceiling interface for connection of supply unit with electrics and gases delivered from site.
- Horizontal swiveling arm system.

- *Media column* with terminal units for medical gas supply/gas evacuation, high- and low voltage power supply according to specification.
- Workstation components such as shelves, drawers, extension arms and equipment holders for ergonomic workplace design according to customer requirements.
- Friction brakes for fixation of adjusted arm position.
- Complete unit including intermediate *ceiling construction and installation*.

The previously mentioned functional units must be coordinated mechanically, functionally and ergonomically, thus presenting a complete medical supply unit.

3.Scope of Delivery- and Technical Specification

3.1 Basic Units

3.1.1 CSU Light Load Arm System; Arm Length 500*+500 mm* with Media Column *1000mm*

- Arm system with two horizontal swivel arms, intermediate bearing and ceiling bearing.
- Action radius 1000 mm
- Load capacity on media column min. 120 kg
- Height of media column approx. 1000mm

3.1.2 Media Column

- Height of media column 1000 mm
- Fitting of installation components possible on 3 sides.
- Pivot bearing integrated into media column.
- Swivel range 320 - 330 °
- Adaptation to ceiling height via distance tube attached to arm system.
- Mounting system for attachment of workstation components e.g. shelves, drawers, side arms, equipment holders from front side.

- Working height of workstation components infinitely variable on media column.
- Set of control elements, consisting of 2 handles for comfortable operation of the supply unit.
- Ergonomically designed handles to support user for positioning the system.
- One-piece front plates without gaps.
- Surfaces resistant against disinfectants.

3.2 Installation Components

3.2.1 Gas Fittings

- Media column equipped with:
  - 2 x O2 (oxygen)
  - 1 x Air 4/5 (compressed air 4/5 bar)
  - 2 x VAC (vacuum)

3.2.2 High voltage electrical installation

- Media column equipped with:
  - 10x electrical 5/15 Amp universal socket.

3.2.3 Low voltage electrical installation

- Media column equipped with:

- 2 x RJ 45 Socket.

3.3 **Workstation Components**

3.3.1 Shelf for mounting at front rail system of Media Column

- Shelf for attachment to front rail system of previously described media column - 1 no.
- Surface area 530 x 480 mm (W x D)
- Load capacity min. 40 kg
- Thickness max. 22 mm
- Material: Aluminium
- Smooth, scratchproof, fade-resistant and antistatic surface.
- No sharp edges and grooves.
- Integrated rubber elements at all 4 edges for injury prevention.
- With curved, ergonomic design.
- Side rails should be provided with each shelf.

3.3.2 Drawer for mounting at shelf – 1 Pcs.

- Drawer for attachment to shelf, as previously described dimensions 430 x 340 x 170 mm (W x D x H)
- Load capacity min. 7 kg
- Special drawer runner system with exceptionally smooth sliding function self-closing function.
- Facilitated cleaning by easy removal capability of complete drawer removable front fascia.
- smooth surfaces without protruding handles .
- Future exchange of front fascia possible due to retro-fit capability

3.3.3 CVP-Pole – 1 Pcs.

- Support tube with height adjustable extension pole
- Length of support tube min. 1000 mm
- Length of extension pole min. 800 mm
- Diameter of receiving pole 25mm.
- Max load 13.5 kg
- 4 Hooks, cross orientation, for accommodation of infusion bottles

3.3.4 Double articulated arm (300+200mm) for mounting at front rail system of Media column for CVP pole – 1 pc

- For attachment of a small equipment pole Ø25 mm or CVP-pole
- with locking screw on each swivel joint
- unrestricted horizontal movement around support rail axis
- Length min. 500 mm
- Load capacity min. 35 kg

3.4 Pre-installation components

3.4.1 Ceiling fixture set *anchor / bolt* mounting for ceiling supply unit

- adaptable on site to height of false ceiling, containing all necessary fixation components, e.g. sub-ceiling flange, distance tubes, reinforcement set, inter-connecting flange

Item No.66 (Echocardiography machine for OPD): Additional Item

SPECIFICATION

ECHOCARDIOGRAPHY MACHINE
Description
System should be a state-of-the-art, high-end fully digital color doppler echocardiography system (standalone - trolley based)
System should have open architecture & must be capable of 1024 or more channels for future de
System should have multi array probe technology for Phased Array, Linear Phased Array & Curve should be pin less connectors
The system shall be capable of providing the following imaging & operating modes:
B, M, LPRF, HPRF, CW, Color Angio, Tissue Doppler, Fully Steerable Pulsed Doppler
Fully steerable Continuous Wave Doppler having facility of **both 2D images & Triplex mode.**
Digital Cine Replay of all imaging & doppler modalities
Onscreen image clipboard storage & image recall
Digital Image Storage & Patient Archive with true scanner frame rates. When recall the images sh measurement & analysis capabilities
Should be capable of doing M mode in real time / stored images & also should have a post proce cursor.
Should have Tissue Doppler
System should have B Flow & Compound imaging for better resolution as option
System should support Speckle reducing imaging for the uniform image quality across al the prob
Should have a built-in digital archival system for image storage & archival with reporting facilities. true frame rates
Should have an advanced Stress Echo package capable of acquiring & display of images at true

Should have a Digital Stress Echo package capable of acquiring & display of images at true scan
Both Pharmacological & Exercise stress exam capabilities
Possibility to modify & create protocol templates
Image acquisition, review, wall segment scoring & reporting
Stress exercise with upto 2 minutes of continuous storage
Possibility of extensive post-processing of images under review
Upto 10 stress levels
Zoom capbility in Stress Echo Review
Should be able to use the TVI & Quantification while during the stress
Should have facility of ratable M mode in Tissue Doppler online & offline
Should have at least five frequencies in Tissue Harmonic Imaging in all imaging modes like B, M,
Should have built-in CD / DVD Writer for directly writing images on CD / DVD. Also system should Pen Drive
Should have 17" high resolution TFT Monitor
Should have a hi-fi Pan Zoom capability with live / frozen / stored images& should have capability
Should be DICOM 3 compliant & export of images to MOD DICOM Media (Optional)
Should be directly compatible with color inkjet printers
Digital Cine Replay, allowing to store & replay ultrasound images including 2D, Color, Color Angio user to change gain, contrast, sweep speed, base line etc image parameters
Keyboard should be flexible, it should move Up / Down & Up / Down
System should be less weight & ergonomically designed
Should have a display of single, dual or quad images side by side
Software-driven, backlit & illuminated digital touch panel, assignable rotary knobs & keys for easy
System should be able to upgrade for advance future like strain & strain rate, 2D (Speckle Trackin

System should be able to upgrade for the advance feature for CRT evaluation should have the pa systole time (Option)
Should be quoted with Following Transducers:(Atleast 4 active probe ports are required):
Adult Cardiac Phased Array Transducer (wideband): 1 No
Pediatric Cardiac Phased Array Transducer (wideband): 1 No
Neonatal Cardiac Phased Array Probe (Wide band): 1 No
5 /10 MHz Linear Probe for vascular studies: 1 Nos.

Colour printer-one
Suitable UPS with 30 minutes backup time
Warranty for the above system & configuration should be offered with 5 years from the date of ins quoted for next 5 years after the warranty which will be considered for evaluation purpose of the b
Demonstration of the quoted model should be provided when asked for
The quoted model for should have both European CE & US FDA certifications for quality & also it Electrical Safety of the equipment
The installation base list of the quoted model to be submitted by the bidder

Item No.67 (Negative pressure wound therapy system): Additional Item

SPECIFICATIONS:

- Large LCD Screen
- Over 18 hours (approx)Lithium battery run time
- Three types of Therapies are available – Continuous, Intermittent, Sinusoidal
- A pressure setting range of 0 – 250mm Hg for three therapies –

  Continuous : 50 – 250mm Hg
  Intermittent: 0 – 250mm Hg
  Sinusoidal : 50 – 250mm Hg
- Virtual silent operation - does not disturb patient while resting

- Well developed Alert System with a range of safety alarms for easy troubleshooting –

  Low Pressure Safety (LEAK ALARM)
  Canister Change Alarm/Tube Block Alarm
  Low Battery Alarm
  Tilt Alarm
  Therapy Complete Alarm
- Wound contact layer is made of Nano-crystalline silver
- Discreet and disposable Canister with a capacity of 500 ml and Super absorbent polymer (SAP) and Chemical which helps in controlling strong odour and solidify wound exudate
- Four different Dressing kits are available as per wound size

Weight:

- Light weight – 1700 grams (Approx)
- Comes in a pelican case which meet standards for waterproofing, stacking, impact and durability.

Material: Foam is made of Polyester based Polyurethrine (PU) Material, Transparent PU Film, Acrylic adhesive

- Machine should meet the requirement of Directive 93/42/EEC
- Machine should be CE Certified.

Item No.68 (ICU Bed—Manual & Height adjustable): Additional Item.

SPECIFICATION:

1. Overall size (L)2272 x (W)1048 x (H)470-760 mm(approx.)
   A bed for intensive care units, with full functionality of four lead screw mechanisms for :-
   i) Height Adjustable
   ii) Trendelenburg & Reverse Trendelenburg tilting.
   iii) Backrest adjustment.
   iv) Knee rest & footrest Adjustment.
   v) ABS Panels & ABS Railings.

2. Dual side boards.
3. Oxygen Cylinder Holder.
4. Variants : X-ray Permeable.
5. Optional accessories:- of IV Stand ,Mattress, file holder & Syringe pump Stand with IV stand .
6. Finish : pre-treated & Epoxy powder coated.

Item No.69 (Over Bed table): Additional Item. SPECIFICATION

1. Approximate Overall Size (L) 900 x (W)555 x (H) x 950 – 1150 mm
2. A fixed height Mobile table for use of patient to dine, Read or write .
3. Structure with railing on side for movement and Handling , mounted on castors for mobility.
4. Rounded edges and contours for safe handling .
5. Height adjustable by Gear Handle.

Item No.70 (Crash trolley/cart): Additional item. SPECIFICATION

1. Overall approx Size:-940(L)x490(W)x1535(H)mm.
2. Should be equipped with Six colored removable bins and two polystyrene lockable storage units with three drawers .
3. The top of drawers should have containers of different size.
4. Should have Four swivel castors , two with brake.
5. Should be Complete with corner buffers, powder coated oxygen cylinder holder, S.S. I.V. rod, S.S. Shelves cardiac massage board and electric iamp S. Tubular frame.
6. 4”wheel with buffers.
7. Certificate :-CE , ISO.

Item No.71 (Patient Monitor Mount): Additional item. SPECIFICATION

1. Vertical position can be locket via locking lever.
2. Integrated cable management track.
3. Rugged, durable construction assures reliable operation.
4. Smooth variable height adjustment to accommodate clinician needs.
5. +/-60 degrees vertical motion .
6. +/-90 degrees lateral motion.
7. Vertical and lateral movement combined with independent tilt and swivel.
8. Adjustment at the head of the arm provides optimal positioning fo equipment.
9. Distance to the wall: 216-520mm
10. Loading capacity: 30kg and above.

11. European CE or ISO certified.

Item No.72 (Aerosol Disinfector): Additional item. SPECIFICATION

1. converts liquids FORMALIN in to true aerosol particles.
2. Suitable to work on 220v, single phase, 50 HZ, AC Supply.
3. Aluminium or stainless steel body in following capacities : 5.0 Litres.
4. Certificate :-CE , ISO.

Item No.73 (Computerized Spirometer System/PFT machine): Additional item.
SPECIFICATION

1. Description of Function

Pulmonary function tests are a broad range of tests that are usually done in a health care provider's office or a specialized facility. They measure how well the lungs take in and exhale air and how efficiently they transfer oxygen into the blood.

2. Operational Requirements

System should be supplied complete with printer.

3. Technical Specifications

The following tests should be performed by the PFT Equipment.

It should measure FEV , FVC, PEF, SVC,FEV %, MMEF, PIF, MVV,FRC, 1 1RV, TLC, FET, ERV, IRV, PiMAX/PeMAX, Diffusion capacity.

DLCO, BRONCHIAL PROVOCATION TEST

Predicted value- depends upon national preference

Multi window lay out

Configurable print out format

Real time flow volume and volume time traces

Overlaying of previous test curves for comparison

Open & Closed flow/volume loop test technique possible

Powerful search capability

Storage- 1000 patients‘ tests including flow/volume loops and volume time curves.

Should have networking support

5. System Configuration Accessories, spares and consumables None

5. Environmental factors

Shall meet IEC-60601-1-2 :2001(Or Equivalent BIS) General Requirements of Safety for Electromagnetic Compatibility.or should comply with 89/366/EEC; EMC-directive.

The unit shall be capable of operating continuously in ambient temperature of 20-30 deg C and relative humidity of 15-90%.

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

6 .Power Supply

Power input to be 220-240VAC, 50Hz fitted with Indian plug

UPS of suitable rating with voltage regulation,spike protection and maintenance free batteries for 60 minutes back up

7.. Standards, Safety and Training

Should be FDA or European CE approved product.

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

Electrical safety conforms to standards for electrical safety IEC 60601-1 (OR EQUIVALET

international/national standard)General requirement for Electrical safety of Medical Equipment.

8. Documentation

User/Technical/Maintenance manuals to be supplied in English.

List of important spare parts and accessories with their part number and costing.

Certificate of calibration and inspection.

Log book with instructions for daily, weekly, monthly and quarterly maintenance checklist. The job descriptin of the hospital technician and company service engineer should be clearly spelt out.

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.

List of Equipments available for providing calibration and routine Preventive Maintenance

Support. as per manufacturer documentation in service/technical manual.

Item No.74 (Syringe Needle Destroyer): Additional item. SPECIFICATION.

1. Manual Needle cutters with 500 ml containers or more.
2. Portable, reusable, point-of-use needle hub destruction
3. Cut the syringe needle at the hub
4. Should Enclose the needle securely in the hard plastic container.

Item No.75 (Electric Sterilizer): Additional item. SPECIFICATION.
Seamless shell as well as lever operated lid that provides for fail proof mechanism. The sterilizer should have provision of controlling excessive steam escape and as well as in restricting condensate within shell.
Construction Materials: Steel Sheets Size (L x W x H) : 510 – 550 x 200-250 x 150-200 mm.
Power: 2—3 kW.

Director of Health Services,
Govt. of Tripura : Agartala.