**Procurement Title**
- Tender Notice [√]
- Expression of Interest
- Request for Proposal
- Prequalification
- Sales/Auction Notice
- Corrigendum
- Addendum
- Notice
- Other

**Procurement Name**

**Procurement Title**
- ANNUAL TENDER OF MEDICAL & LAB. EQUIPMENT
- FOR THE YEAR 2017-18

**Package/Lot No.**

**Description against each Package/Lot**

<table>
<thead>
<tr>
<th>Amount Mode</th>
<th>Million</th>
<th>Billion</th>
</tr>
</thead>
<tbody>
<tr>
<td>√</td>
<td></td>
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</tbody>
</table>

**Estimated Cost**
- 356,664,000/-

**Bid Security (In Figures)**
- 7,133,280/-

**Procurement Category**
- Local [√]
- International

**Procurement Type**
- Work
- Services
- Goods [√]

**Procurement Estimated Cost**
- Less than 2 Million
- More than 2 Million and less than 100 Million [√]
- 100 Million & Above

**IPL No.**
- 13294

**Receiving/Closing Date**
- 06-11-2017

**Tender Opening Date**
- 06-11-2017

**Issuance Date**
- After date of publication to till 04-11-2017

**Bid Security**
- 7,133,280/-

**Bid Document Price**
- 1,000/-

**Performance Guarantee Form**
- Attach with bidding documents

**Procurement Notice**
- Attached [√]
- Not Attached

**Bidding Document**
- Attached [√]
- Not Attached

**Bank Deposit Slip No.**
- 45238133

**Date of Deposit**
- 18-10-2017

**BOP Branch Code**
- 0077 (Satellite Town, Chandni Chowk Rawalpindi)

**Bank Deposit Slip**
- Attached [√]
- Not Attached

**Authority Name**
- Maj. Gen. (R) Azhar Mahmood Kiyani (HI)

**Designation**
- Executive Director

**Contact No.**
- 051-9281111

**Email**
- purchaseric272@gmail.com

**Address**
- Rawal Road, Rawalpindi
Sealed bids for the following categories, addressed to the Executive Director Rawalpindi Institute of Cardiology, Rawal Road Rawalpindi, are invited under PPRA rules 2014 (amended 2016). The bidder must not be blacklisted from anywhere and have registration with relevant Tax Departments of the Govt. of Pakistan.

<table>
<thead>
<tr>
<th>S #</th>
<th>Description</th>
<th>Last date for Purchasing of Tender Documents</th>
<th>Last date for submission of Tender Documents</th>
<th>Tender Opening Date</th>
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</thead>
<tbody>
<tr>
<td>01</td>
<td>Medical &amp; Lab. Equipment</td>
<td>Saturday 04-11-2017 02:00 PM</td>
<td>Monday 06-11-2017 11:00 AM</td>
<td>Monday 06-11-2017 11:30 AM</td>
</tr>
</tbody>
</table>

Tender documents containing terms and conditions and quantities where applicable, can be obtained immediately from Accounts Office of the hospital, on a payment of Rs: 1000/- (non-refundable). After the tender notice published in newspaper a copy of the Bidding Documents is available on the websites of Punjab Procurement Regulatory Authority [www.cppra.punjab.gov.pk](http://www.cppra.punjab.gov.pk) & [www.ric.gop.pk](http://www.ric.gop.pk). Separate tenders must be purchased for each of the above-mentioned category.

All bids should be submitted in single package containing two separate envelopes under Single stage – two envelope procedure specified in PPRA rules, 2014 (amended 2016). Each envelope shall be clearly marked as “Technical Proposal” and “Financial Proposal”. Bidder must submit fresh CDR / Bank Guarantee @ 02% of estimated price as a Bid Security (refundable) in the name of ED Rawalpindi Institute of Cardiology, Rawal Road Rawalpindi, with the FINANCIAL PROPOSAL. No tender will be accepted without Bid Security & such tender(s) will be rejected at the spot.

Maj. Gen (R)
Azhar Mahmood Kayani HI (M)
Executive Director
RIC, Rawalpindi
RAWALPINDI INSTITUTE OF CARDIOLOGY, RAWAL ROAD, RAWALPINDI.

BIDDING DOCUMENTS FOR PROCUREMENT
OF
MEDICAL & LAB. EQUIPMENTS
(2017-18)
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A. Instructions to Bidders (ITB)

General Instructions:
1. Content of Bidding Document
1.1 The goods required, bidding procedures, and Contract terms are prescribed in the bidding documents. In addition to the Invitation for Bids, the bidding documents include:
   (a) Instructions to Bidders (ITB);
   (b) General Conditions of Contract (GCC);
   (c) Special Conditions of Contract (SCC);
   (d) Schedule of Requirements;
   (e) Technical Specifications;
   (f) Contract Form;
   (g) Manufacturer’s Authorization Form;
   (h) Performance Guaranty Form;
   (i) Bid Form; and
   (j) Price Schedule
1.2 The “Invitation for Bids” does not form part of the Bidding Documents and is included as a reference only. In case of discrepancies between the Invitation for Bid and the Bidding Documents listed in 1.1 said Bidding Documents shall take precedence.
1.3 The Bidder is expected to examine all instructions, forms, terms, and specifications in the bidding documents. Failure to furnish all information required by the bidding documents or to submit a bid not substantially responsive to the bidding documents in every respect shall be at the Bidder’s risk and may result in the rejection of its bid.

2. Source of Funds
2.1 Government of Punjab.

3. Eligible Bidders
3.1 This Invitation for Bids is open to all original Manufacturers/authorized sole Agents of Foreign/ Local manufacturers in Pakistan for supply of goods.
3.2 The bidder must possess valid legal enforceable exclusive authorization from the Foreign/Local Manufacturer; they should have a documentary proof to the effect that they are the original Manufacturer of the required goods.
3.3 Bidders should not be under a declaration of ineligibility for corrupt and fraudulent practices issued by any Government (Federal, Provincial), a local body or a public sector organization.

4. Eligible Goods and Services
4.1 Country of manufacturer should be of USA, Europe and Japan; unless otherwise any other country of manufacturer is mentioned in specifications. However, country of origin of equipment could be from any geographical region of the world as per laws of Pakistan.
4.2 For the purpose of this clause, (a) the term “Goods” includes any Goods that are the subject of this Invitation for Bids and (b) the term “Services” includes related services such as transportation, insurance, after sale service, spare parts availability, etc. For purposes of this clause, “origin” means the place where the goods are mined, grown, or produced, or the place from which the related services are supplied. In case of the “manufacturer” the “origin” means the firm is based and registered in that country and registered with their stock exchange are produced when, through manufacturing or processing, or substantial and major assembly of components, a commercially
recognized product is produced that is substantially different in basic characteristics or in purpose or utility from its components.

5. Cost of Bidding
5.1 The Bidder shall bear all costs associated with the preparation and submission of its bid, and the Procuring Agency shall in no case be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.

6. Clarification of Bidding Documents
6.1 A prospective Bidder requiring any clarification of the bidding documents may notify the Procuring Agency in writing at the Procuring Agency’s address indicated in the Invitation for Bids. The Procuring Agency shall respond in writing to any request for clarification of the bidding documents, which it receives not later than seven (07) days prior to the deadline for the submission of bids prescribed in the Invitation for Bids. Written copies of the Procuring Agency’s response (including an explanation of the query but without identifying the source of inquiry) shall be sent to all prospective Bidders that have received the bidding documents.

7. Amendment of Bidding Documents
7.1 At any time prior to the deadline for submission of bids, the Procuring Agency, for any reason, whether at its own initiative or in response to a clarification requested by a prospective Bidder, may modify the bidding documents by amendment.
7.2 All prospective Bidders that have received the bidding documents shall be notified of the amendment in writing, and shall be binding on them.
7.3 In order to allow prospective Bidders reasonable time in which to take the amendment into account in preparing their bids, the Procuring Agency, at its discretion, may extend the deadline for the submission of bids. Amendment notice to that effect shall be communicated in the same manner as the original invitation to bid.

8. Qualification and Disqualification of Bidders
8.1 In the absence of prequalification, the Procuring Agency shall determine to its satisfaction whether the Bidder that is selected as having submitted the lowest evaluated responsive bid is qualified to perform the Contract satisfactorily, in accordance with the criteria listed in ITB Clause 29.2.
8.2 The determination shall take into account the Bidder’s financial, technical or production capabilities (in case of manufacturer), infrastructure of the firm, past performance in similar contracts, engineering staff and their capabilities, inventory of spare parts, repair and calibration tools, workshop facilities to provide the after sales services. It shall be based upon an examination of the documentary evidence of the Bidder’s qualifications submitted by the Bidder, pursuant to ITB Clause 29.2, as well as such other information/ premises visit as the Procuring Agency deems necessary and appropriate.
8.3 An affirmative determination shall be a pre-requisite for Award of the Contract to the Bidder. A negative determination shall result in rejection of the Bidder’s bid, in which event the Procuring Agency shall proceed to the next lowest evaluated bid to make a similar determination of that Bidder’s capabilities to perform satisfactorily.
8.4 The Procuring Agency, at any stage of the procurement proceedings, having credible reasons for or prima facie evidence of any defect in Supplier’s capacities may require the Suppliers to provide information concerning their professional, technical, financial, legal or managerial competence.
8.5 The Procuring Agency shall disqualify a Bidder if it finds, at any time, that the information submitted by him concerning his qualification as Supplier was false and materially inaccurate or incomplete.

8.6 Bidders that are found to consistently fail to provide satisfactory performances or are found to be indulging in corrupt or fraudulent practices shall be blacklisted.

9. Corrupt or Fraudulent Practices
9.1 The Procuring Agency requires that all Bidders/Suppliers/Contractors observe the highest standard of ethics during the procurement and execution of such Contracts. In pursuance of rule 2 (P) of PPRA 2014 (Amended 2016) and its subsequent amendments, if any, the Procuring Agency:
   a. defines, for the purposes of this provision, the terms set forth below as follows:

   (i) **coercive practice** by impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence the actions of a party to achieve a wrongful gain or to cause a wrongful loss to another party;
   (ii) **collusive practice** by arrangement between two or more parties to the procurement process or contract execution, designed to achieve with or without the knowledge of the procuring agency to establish prices at artificial, noncompetitive levels for any wrongful gain;
   (iii) **corrupt practice** by offering, giving, receiving or soliciting, directly or indirectly, of anything of value to influence the acts of another party for wrongful gain;
   (iv) **fraudulent practice** by any act or omission, including a misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain a financial or other benefit or to avoid an obligation;
   (v) **obstructive practice** by harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in a procurement process, or affect the execution of a contract or deliberately destroying, falsifying, altering or concealing of evidence material to the investigation or making false statements before investigators in order to materially impede an investigation into allegations of a corrupt, fraudulent, coercive or collusive practice; or threatening, harassing or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation, or acts intended to materially impede the exercise of inspection and audit rights.

   b. shall reject a proposal for Award if it determines that the Bidder recommended for award has engaged in corrupt or fraudulent practices in competing for the Contract in question; shall declare a firm ineligible, either indefinitely or for a stated period of time, to be awarded a Contract if it at any time determines that the firm has engaged in corrupt or fraudulent practices in competing for, or in executing, a Contract.

Preparation of Bids
10. Language of Bid
10.1 The bid prepared by the Bidder, as well as all correspondence and documents relating to the bid exchanged by the Bidder and the Procuring Agency shall be written in English. Supporting documents and printed literature furnished by the Bidder may be in another language provided they are accompanied by an accurate translation of the relevant passages in English, in which case, for purposes of interpretation of the Bid, the translation shall govern.

11. Documents Comprising the Bid
11.1 The bid prepared by the Bidder shall comprise the following components:
12. Bid Form and Price Schedule
12.1 The Bidder shall complete the Bid Form and an appropriate Price Schedule furnished in the bidding documents (Annexure A Form), indicating the goods to be supplied, a brief description of the goods, specifications, taxes, quantity, prices, make, model, country of origin, country of manufacturer and port shipment.

13. Bid Prices
13.1 The Bidder shall indicate on the Price Schedule the unit prices and total Package Price of the goods, it proposes to supply under the Contract.
13.2 Form for Price Schedule is to be filled in very carefully, and should be typed. Any alteration/correction must be initialed. Every page is to be signed and stamped at the bottom. Serial number/bid number of the quoted item may be marked or highlighted with red/yellow marker.
13.3 The Bidder should quote the prices of goods according to the technical specifications for complete package/Tender. The specifications of goods, different from the demand of enquiry and packaged items, shall straightway be rejected.
13.4 The Bidder is required to offer competitive price. All prices must include relevant taxes and duties, where applicable. If there is no mention of taxes, the offered/quoted price shall be considered as inclusive of all prevailing taxes/duties. The benefit of exemption from or reduction in the GST or other taxes shall be passed on to the Procuring Agency.
13.5 Prices offered should be for complete package/Tender with accessories; detail of which is already mentioned in the technical specifications.
13.6 While tendering your quotation, the present trend/inflation in the rate of goods and services in the market should be kept in mind. No request for increase in price due to market fluctuation in the cost of goods and services shall be entertained after the bid has been submitted.

14. Bid Currencies
14.1 In case of CIF tender, the Prices shall be quoted in $, £, € ¥ and CHF.
14.2 State Bank of Pakistan’s foreign currency selling rate will be considered from the date of opening of financial bid for comparison purposes.
14.3 The price for complete package/Tender, standard accessories; detail of which is already mentioned in the technical specifications will be considered for determining the lowest bidder. Optional items will not be considered while determining the lowest bidder.

15. Documents Establishing Bidder’s Eligibility and Qualification
15.1 The Bidder shall furnish, as part of its technical bid, documents establishing the Bidder’s eligibility to bid and its qualifications to perform the Contract if its bid is accepted.
15.2 The documentary evidence of the Bidder’s eligibility to bid shall establish to the Procuring Agency’s satisfaction that the Bidder, at the time of submission of its bid, is an eligible as defined under ITB Clause 3.

15.3 The documentary evidence to be submitted in the Technical Proposal for the purposes of qualification and technical evaluation shall include:

(a) The Supplier/agent shall have to produce Exclusive letter of authorization / Sole Agency Certificate from Manufacturer and in case of Manufacturer, documentary proof to the effect that they are the original Manufacturer of the required goods shall be provided, or joint venture/consortium/alliance of the local Sole agents/manufacturers.

(b) National Tax Number (NTN) and General Sales Tax Number with documentary proof shall have to be provided by the bidder(s).

(c) The Bidder shall submit an affidavit on legal stamp paper of Rs. 20/- that their firm has not been blacklisted in the past on any ground by any Government (Federal, Provincial), a local body or a public sector organization. On account of submission of false statement the Bidder shall be disqualified forthwith and subsequently black listed.

(d) The Bidder should have strong engineering background and necessary tools/test equipment, trained staff for the goods required after sales services.

(e) The Bidder is required to provide with the technical proposal the name of item(s), tender number and serial number in the exact manner as quoted in the financial proposals.

(f) The Bidder must indicate the country of origin of the goods, Country of manufacturer, capacity of production of the firm (in case of manufacturer), its financial status, necessary assurance of quality production, Certificate(s) for conformity with International standards of Quality and list of qualified technical persons along with qualification and trainings, list of main service, testing and calibration tools and in case of manufacturer; the supervisory staff working in the production and quality control departments in the manufacturing plant.

16. Documents Establishing Goods’ Eligibility and Conformity to Bidding Documents

16.1 Pursuant to ITB Clause 11, the Bidder shall furnish along with technical proposal, as part of its bid, documents establishing the eligibility and conformity to the bidding documents of all goods, which the Bidder proposes to supply under the Contract.

16.2 The documentary evidence of the eligibility of the goods shall consist of a statement in the Price Schedule of the country of origin of the goods offered.

16.3 Submission of sample if so required by the Technical Committee; the bidder shall provide the sample or give demonstration as per requirement for evaluation/satisfaction of the Committee.

16.4 Submission of Original Purchase Receipt of tender.

16.5 Alternative bid is not allowed also a bidder cannot submit two bids. If the bidder quotes an alternative bid or submit two bids then the bidder will be considered as non-responsive.

17. Bid Security

17.1 Bid Security is 2% of the estimated price in the shape of irrevocable Bank Guarantee or CDR in the name of Executive Director, Rawalpindi Institute of Cardiology Rawalpindi from scheduled bank. Bid Security amounting to less than 2% shall not be acceptable.

17.2 Separately against each package/Tender given in this tender document;
17.3 As a part of financial bid envelop, failing which will cause rejection of bid;
17.4 In the form of Demand Draft / Pay Order / Call Deposit Receipt / Bank Guarantee (issued by a scheduled bank operating in Pakistan, as per the format provided in the Tender Document) in the name of the Executive Director, Rawalpindi Institute of Cardiology Rawalpindi
17.5 Have a minimum validity period of ninety (90) days from the last date for submission of the tender or until furnishing of the Performance Security, whichever is later.
17.6 The Bid Security shall be forfeited by the Purchaser, on the occurrence of any / all of the following conditions:
   17.6.1 If the Tenderer withdraws the Tender during the period of the Tender validity specified by the Tenderer on the Tender Form; or
   17.6.2 If the Tenderer does not accept the corrections of his Total Tender Price; or
   17.6.3 If the Tenderer, having been notified of the acceptance of the Tender by the Purchaser during the period of the Tender validity, fails or refuses to furnish the Performance Security, in accordance with the Tender Document.
17.7 The Bid security shall be returned to the technically unsuccessful Tenderer with unopened/sealed financial bid while the unsuccessful bidders of financial bid opening procedure will be returned the Bid Security only. The Bid Security shall be returned to the successful Tenderer upon furnishing of the Performance Security.

18. Bid Validity
18.1 Bids shall remain valid for a period of 90 days after opening of Technical Bid prescribed by the Procuring Agency. A bid valid for a shorter period shall be rejected by the Procuring Agency as non-responsive.
18.2 The Procuring Agency shall ordinarily be under an obligation to process and evaluate the bid within the stipulated bid validity period. However, under exceptional circumstances and for reasons to be recorded in writing, if an extension is considered necessary, all those who have submitted their bids shall be asked to extend their respective bid validity period. Such extension shall be for not more than the period equal to the period of the original bid validity. Such extension shall not be for more than the period equal to the period of the original bid validity.
18.3 Bidders who,
   (a) agree to the Procuring Agency’s request for extension of bid validity period shall not be permitted to change the substance of their bids; and
   (b) do not agree to an extension of the bid validity period shall be allowed to withdraw their bids, if any.

Submission of Bids
19. Format and Signing of Bid
19.1 The bid shall be typed and shall be signed by the Bidder or Lead Bidder (in case of tender with the permission of alliance/ Joint venture for the bidding of complete package i.e. more than one equipment in a single tender) or a person or persons duly authorized to bind the Bidder to the Contract. The person or persons signing the bid shall initial all pages of the bid.
19.2 Any interlineations, erasures, or overwriting shall be valid only if they are initialed by the person or persons signing the bid.
19.3 All bidding documents to be duly attested (signed and stamped) by the authorized person of bidder or Lead Bidder.

20. Sealing and Marking of Bids
20.1 The envelopes shall be marked as “FINANCIAL PROPOSAL” and “TECHNICAL PROPOSAL” in bold and legible letters to avoid confusion. The envelopes shall then be sealed in an outer envelope. It should contain the package name and its number.

20.2 The inner and outer envelopes shall:
   a) be addressed to the Procuring Agency at the address given in the Invitation for Bids; and
   b) bear the Institution/Hospital name and number indicated in the Invitation for Bids, and shall be inscribed by the following sentence: “DO NOT OPEN BEFORE,” to be completed with the time and the date specified in the invitation for Bid.

20.3 The inner envelopes shall also indicate the name and address of the Bidder/Lead Bidder to enable the bid to be returned unopened in case it is declared as non-responsive or late.

20.4 If the outer as well as inner envelope is not sealed and marked properly, the Procuring Agency shall assume no responsibility for the bid’s misplacement or premature opening.

21. Deadline for Submission of Bids
21.1 Bids must be submitted by the Bidder and received by the Procuring Agency at the address specified under ITB Clause 19.1 not later than the time and date specified in the Invitation for Bids.

21.2 The Procuring Agency may, at its discretion, extend this deadline for the submission of bids by amending the bidding documents in accordance with ITB Clause 7, in which case all rights and obligations of the Procuring Agency and Bidders previously subject to the deadline shall thereafter be subject to the deadline as extended.

22. Late Bid
22.1 Any bid received by the Procuring Agency after the deadline for submission of bids prescribed by the Procuring Agency pursuant to ITB Clause 21 shall be rejected and returned unopened to the Bidder.

23. Withdrawal of Bids
23.1 The Bidder may withdraw its bid prior to the deadline specified in the invitation to bid.

23.2 No bid may be withdrawn in the interval between the deadline for submission of bids and the expiration of the period of bid validity specified in ITB Clause 18.2 Withdrawal of a bid during this interval will make the bidder eligible to be debarred for further procurements for a period as deemed necessary by the Procuring Agency.

The Bidding Procedure

24. Single stage – two envelopes bidding procedure
24.1 Single stage – two envelopes bidding procedure shall be applied:
   (i) The bid shall comprise a single package containing two separate envelopes. Each envelope shall contain separately the financial proposal and the technical proposal;
   (ii) the envelopes shall be marked as “FINANCIAL PROPOSAL” and “TECHNICAL PROPOSAL” in bold and legible letters to avoid confusion;
   (iii) initially, only the envelope marked “TECHNICAL PROPOSAL” shall be opened;
(iv) the envelope marked as “FINANCIAL PROPOSAL” shall be retained in the custody of Procuring Agency without being opened;
(v) the Procuring Agency shall evaluate the technical proposal, without reference to the price and reject any proposal which do not conform to the specified requirements;
(vi) during the technical evaluation no amendments in the technical proposal shall be permitted;
(vii) the financial proposals of bids shall be opened publicly at a time, date and venue to be announced and communicated to the Bidders in advance;
(viii) After the evaluation and approval of the technical proposal the Procuring Agency shall at a time within the bid validity period, publicly open the financial proposals of the technically accepted bids only. The financial proposal of bids found technically non-responsive shall be returned un-opened to the respective Bidders; and
(ix) The bid found to be the lowest evaluated bid shall be accepted.
(x) The procuring agency may adopt any other bidding procedure depending on the nature of procurement / Type of Goods / Equipment to be procured as per the methods of procurement prescribed in PPRA 2014 (Amended 2016) and its subsequent amendments, if any.

Opening and Evaluation of Bids

25. Opening of Bids by the Procuring Agency
25.1 The Procuring Agency shall initially open only the envelopes marked “TECHNICAL PROPOSAL” in the presence of Bidders’ representatives who choose to attend, at the time, on the date, and at the place specified in the Invitation for Bids. The Bidders’ representatives who are present shall sign the Attendance Sheet as evidence of their attendance. However, the envelope marked as “FINANCIAL PROPOSAL” shall remain unopened and shall be retained in safe custody of the Procuring Agency till completion of the evaluation process.
25.2 The Bidders’ names, item(s) for which they quoted their rate and such other details as the Procuring Agency, at its discretion, may consider appropriate, shall be announced at the opening of technical proposal. No bid shall be rejected at technical proposal/ bid opening, except for late bids, which shall be returned unopened to the Bidder pursuant to ITB Clause 21. However, at the opening financial proposals (the date, time and venue would be announced later on), the bid prices, discounts (if any), and the presence or absence of requisite bid Security and such other details as the Procuring Agency, at its discretion, may consider appropriate, shall be announced.
25.3 The Procuring Agency shall prepare minutes of both the technical proposal as well as the financial proposal bid opening.

26. Clarification of Bids
26.1 During evaluation of the bids, the Procuring Agency may, at its discretion, ask the Bidder for a clarification of its bid. The request for clarification and the response shall be in writing, and no change in the prices or substance of bid like indication or re-indication of make/model/brand etc. shall be sought, offered, or permitted.

27. Preliminary Examination
27.1 The Procuring Agency shall examine the bids to determine whether they are complete, whether any computational errors have been made (at the time of opening the financial proposal), whether required sureties have been furnished, whether the documents have been properly signed, and whether the bids are generally in order.
27.2 In the financial bids (at the time of opening the financial proposal) the arithmetical errors shall be rectified on the following basis. If there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail, and the total price shall be corrected. If the Bidders/Suppliers do not accept the correction of the errors, its bid shall be rejected. If there is a discrepancy between words and figures, the amount in words shall prevail.

27.3 The Procuring Agency may waive any minor informality, nonconformity, or irregularity in a bid which does not constitute a material deviation (or changes the substance of the bid), provided such waiver does not prejudice or affect the relative ranking of any Bidder.

27.4 Prior to the detailed evaluation, pursuant to ITB Clause 27 the Procuring Agency shall determine the substantial responsiveness of each bid to the bidding documents. For purposes of these Clauses, a substantially responsive bid is one, which conforms to all the terms and conditions of the bidding documents without material deviations. Deviations from, or objections or reservations to critical provisions shall be deemed to be a material deviation for technical proposals. The Procuring Agency’s determination of a bid’s responsiveness is to be based on the contents of the bid itself without recourse to extrinsic evidence.

27.5 If a bid is not substantially responsive, it shall be rejected by the Procuring Agency and may not subsequently be made responsive by the Bidder by correction of the nonconformity.

28. Evaluation and Comparison of Bids
28.1 The Procuring Agency shall evaluate and compare the bids on the basis of Single items/ Complete package (As demanded in the advertised tender), which have been determined to be substantially responsive, pursuant to ITB Clause 25.
28.2 The Procuring Agency’s evaluation of technical proposal/ bid shall be on the basis of previous performances, test reports, inspection of plant/ factory/ premises, previous experience of similar contracts, availability of engineering staff and their capabilities, inventory of spare parts, workshop facility to provide the after sales services, financial soundness and such other details as already highlighted. However, the evaluation of financial proposal shall be on the basis of price.
28.3 All bids shall be evaluated in accordance with the evaluation criteria (ITB Clause 29) and other terms and conditions set forth in these bidding documents.
28.4 In case of procurement on CIF basis; for the purpose of comparison of bids quoted in different currencies, the price shall be converted into Pak Rupees in pursuant to ITB Clause 13. The rate of exchange shall be the selling rate, prevailing on the date of opening of Financial Bids specified in the bidding documents, as notified by the State Bank of Pakistan on that day.
28.5 A bid once opened in accordance with the prescribed procedure shall be subject to only those rules, regulations and policies that are in force at the time of issue of notice for invitation of bids.

29. Evaluation Criteria
29.1 For the purposes of determining the lowest evaluated bid, factors other than price such as previous performances, previous experience, engineering/ technical capabilities, repair/ calibration tool, workshop facilities, financial soundness and such other details as the Procuring Agency at its discretion, may consider appropriate shall be taken into consideration and these should be available with the bidder. The following evaluation factors/ criteria will be employed on technical proposals.

29.2 Technical Evaluation Criteria
Technical Evaluation Criteria (Medical Equipment and General Machinery)

1. For evaluation of bids **KNOCKED DOWN CRITERIA** will be applied. The bids conforming to the specifications and pre-requisite conditions indicated in specifications and evaluation criteria will be considered for further technical evaluation.

2. The technical evaluation of tenders will be carried out by the designated Technical Evaluation Committee of Procuring Agency.

3. The bid must comply with the advertised technical specifications of the quoted single item/ complete package. Incomplete offer will straightaway be rejected.

4. The bidder must possess Exclusive/Sole authorization agreement from the Foreign Manufacturer. Unless otherwise specifically mentioned in the specifications of advertised tender that the exclusive authorization of foreign manufacturer is not required. This can be applied only on general machinery and on a nature of medical / other equipment, where the extensive after sales services is not required or due to the any other technical reasons. This need to be identified by the procuring agency in the advertised specifications / Tender, if any.

5. The Manufacturer should have documentary evidence to the effect that they are the original Manufacturer of the quoted product with indication of manufacturing site and its location.

6. Certificate from the manufacturer that the after sales services / backup services shall be provided jointly with the local sole agent and in case of change of local agent, they will provide the after sales services themselves or through newly appointed agent for the period mentioned from the date of commissioning.

7. A Certificate from the manufacturer that the installation will be conducted in conformity with the system requirements by following the professional approach.

8. Satisfactory Past performance of the bidder for quoted product.

9. Sufficient Technical and Engineering capabilities of the firm; where after sales services are necessary (attach a list of technical and engineering staff, special testing equipment/calibration/ repair tools for equipment).

10. The firm must have all kind of testing and calibration equipment which is required to maintain the products which they are dealing. The list of all required testing equipment will be provided along with the bid including its model number and serial numbers. The available testing equipment must be calibrated. The offers without non-availability of required testing equipment will be straightaway rejected.

11. Submission of valid legally enforceable exclusive authorization letter of manufacturer assuring full guarantee and warranty obligations as per enclosed manufacturer authorized form with the bid document.

12. The medical equipment offered from foreign countries of USA, Europe and Japan shall be eligible to participate and must bear FDA510k, CE(MDD) or MHLW (Ministry of Health, Labor and Welfare) standard, respectively and those products should be marketed world widely; in case the origin is not mentioned in the specifications. (The product manufactured and marketed for certain region shall be knocked down). In case of high-tech equipment, any of the above mentioned two certificates are mandatory. The country of manufacturer other than USA,
Europe and Japan will be acceptable only if it is specifically mentioned in the advertised tender/Specifications.

13. The non medical equipment / Machinery items must bear the relevant international applicable quality standards.

14. The quoted model of imported product shall be available on the current official website of the manufacturer; otherwise the quoted product shall be considered obsolete/ redundant and will straight away be rejected.

15. Infrastructure for execution of after sales services mentioned by the bidder shall be evaluated for its suitability as per provisions given in specifications and other requirements detailed in the technical specifications of the bidding documents.

16. The firms shall also declare the make, model, country of origin of all accessories to be provided with the equipment.

17. The Procuring Agency has the right to inspect the premises of bidder to inspect the setups ensuring proper after sales services.

18. An affidavit from bidder of Rs.20/- stating that their firm is not blacklisted by any of the Federal and Provincial Government or organizations of the State/ Central Government in Pakistan.

19. The template of bid evaluation report is attached as Annex -. The Technical status of offers will be declared as Responsive, Non Responsive and Substantially Responsive.

20. The offer will be considered as responsive if it fully meets the tender requirement and specifications. The offer which will not be as per requirement of tender and specifications is to be declared as non responsive. The offer which contains the minor deviations from the specifications and the deviations would not have any kind of effect on the quality, efficiency, reliability and durability of products will be declared as substantially responsive, This need to be determined by the Technical Evaluation Committee. The offers which are declared as Responsive and Substantially Responsive will be considered as equivalent for the onward proceedings of tender.

29.2.1 Bidders are required to submit the information in the following format along with documentary evidence as under.
29.2.2 Profile of the Bidder

<table>
<thead>
<tr>
<th>Sr.#</th>
<th>Particulars</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Name of the company</td>
</tr>
<tr>
<td>2.</td>
<td>Registered Office</td>
</tr>
<tr>
<td></td>
<td>Address</td>
</tr>
<tr>
<td></td>
<td>Office Telephone Number</td>
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<td>Fax Number</td>
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<tr>
<td>3.</td>
<td>Contact Person</td>
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<tr>
<td></td>
<td>Name</td>
</tr>
<tr>
<td></td>
<td>Personal Telephone Number</td>
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<td></td>
<td>Email Address</td>
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<tr>
<td>4.</td>
<td>Local office if any</td>
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<tr>
<td></td>
<td>Address</td>
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<tr>
<td></td>
<td>Office Telephone Number</td>
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<td></td>
<td>Fax Number</td>
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<tr>
<td>5.</td>
<td>Bid Signing Authority</td>
</tr>
<tr>
<td></td>
<td>Name</td>
</tr>
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<td></td>
<td>Address</td>
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<tr>
<td></td>
<td>Personal Telephone Number</td>
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<tr>
<td></td>
<td>Email Address</td>
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<tr>
<td></td>
<td>Please enclose Authorization or Power of Attorney to sign and submit the Bidding</td>
</tr>
<tr>
<td>6.</td>
<td>Address for communication under the current Bidding</td>
</tr>
<tr>
<td>7.</td>
<td>Registration Details</td>
</tr>
<tr>
<td></td>
<td>NTN Registration Number</td>
</tr>
<tr>
<td></td>
<td>GST Registration Number</td>
</tr>
<tr>
<td></td>
<td>Banker’s Name, Address and Account Numbers</td>
</tr>
</tbody>
</table>

a) Bid Security

<table>
<thead>
<tr>
<th>#</th>
<th>Particulars</th>
<th>Please furnish details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Name of the Bank</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>CDR / Bank Guarantee</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Date</td>
<td></td>
</tr>
</tbody>
</table>

b) Details of Balance Sheet (last three years)

<table>
<thead>
<tr>
<th>#</th>
<th>Audited Balance Sheets</th>
<th>Bidder</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>2014-15</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>2015-16</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>2016-17</td>
<td></td>
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<tr>
<td>4.</td>
<td>Please enclose audited annual balance sheets.</td>
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</tbody>
</table>

c) Details about Income Tax (last three years)
d) Details about Annual Turnover (last three years)

<table>
<thead>
<tr>
<th>#</th>
<th>Audited years</th>
<th>Bidder</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>2014-15</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>2015-16</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>2016-17</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Please enclose Income Tax Returns</td>
<td></td>
</tr>
</tbody>
</table>

29.3 **Financial proposals would be evaluated as follows:**

i) After technical evaluation is completed, the Procuring Agency shall notify the date, time and location for opening of the financial proposals. Bidders’ attendance at the opening of financial proposals is optional.

ii) Financial proposals shall be opened publicly in the presence of the bidders’ representatives who choose to attend. The name of the bidders shall be read aloud. The financial proposal of the technically responsive bidders shall then be inspected to confirm that they have remained sealed and unopened (financial proposals of technically non-responsive Bidders shall be returned unopened). These financial proposals shall be then opened, and the total prices read aloud and recorded.

iii) Incomplete bid shall stand rejected. All items described in the technical proposal must be priced in financial proposal. Items described in the technical proposal but not priced, shall be assumed to be included in the price of other items.

iv) Minor oversight, clerical mistakes, other minor inconsistencies that do not alter the substances of the financial bid may be corrected by the Procuring Agency. When correcting computation error in case of discrepancy between a partial amount and the total amount or between the words and figures, the formers will prevail.

v) The bidders will quote the Price Schedules. The total price of the system will be calculated by converting the price to single currency (Pak Rs.) on the rate of date of opening of Financial Proposal; in case of import of item.

vi) The lowest responsible bidder will be declared with standard accessories. The price of optional items will not be considered while establishing the lowest bid.

30. **Contacting the Procuring Agency**

30.1 No Bidder shall contact the Procuring Agency on any matter relating to its bid, from the time of the bid opening to the time the Contract is awarded.

30.2 Any effort by a Bidder to influence the Procuring Agency in its decisions on bid evaluation, bid comparison, or Contract Award will result in the rejection of the Bidder’s bid and subsequent black listing. Canvassing by any Bidder at any stage of the Tender evaluation is strictly prohibited.

31. **Rejection of Bids**

31.1 The Procuring Agency may reject all bids at any time prior to the acceptance of a bid.
31.2 The Procuring Agency shall upon request communicate to any Bidder the grounds for its rejection of all bids of proposals, but shall not be required to justify those grounds. 
31.3 The Procuring Agency shall incur no liability, solely by virtue of its invoking Clause 30.1 towards the Bidders. 
31.4 The bidder shall be promptly informed about the rejection of the bids, if any 
31.5 A procuring agency may, for reasons to be recorded is writing, restart bidding process from any prior stage if it is possible without violating any principle of procurement contained in rule 4 and shall immediately communicate the decision to the bidders.

32. Re-Bidding 
32.1 If the Procuring Agency rejects all bids in pursuant to ITB Clause 30, it may call for a re-bidding or if deems necessary and appropriate the Procuring Agency may seek any alternative methods of procurement. 
32.2 The Procuring Agency before invitation for re-bidding shall assess the reasons for rejection and may revise specifications, evaluation criteria or any other condition for Bidders, as it may deem necessary.

33. Announcement of Evaluation Report 
33.1 The Procuring Agency shall announce the results of bid evaluation of a report giving justification for acceptance or rejection of bids at least ten days prior to the award of procurement Contract.

Awards of Contract 
34. Acceptance of Bid and Award criteria 
34.1 The Bidder with technically evaluated lowest financial bid, if not in conflict with any other law, rules & regulations, policy of the Government or having less Bid Security shall be awarded the Contract, within the original or extended period of bid validity for complete package/Tender. 
34.2 The Bidder having lesser Bid Security will be rejected as non-responsive and Acceptance of Bid be awarded to next bidder; being the responsive lowest bidder.

35. Procuring Agency’s right to vary quantities at time of Award 
35.1 The Procuring Agency reserves the right at the time of Contract award to increase the quantity of goods originally specified in the Price Schedule and Schedule of Requirements without any change in unit price or other terms and conditions.

36 Limitations on Negotiations 
36.1 Save as otherwise provided there shall be no negotiations with the bidder having submitted the lowest evaluated bid or with any other bidder: provided that the extent of the negotiation permissible shall be subject to the regulations issued by the PPRA 2014 (Amended 2016) and its subsequent amendments, if any.

37. Notification of Award 
37.1 Prior to the expiration of the period of bid validity, the Procuring Agency shall notify the successful Bidder in writing by registered letter that its bid has been accepted. 
37.2 The notification of Award shall constitute the formation of the Contract.

38. Signing of Contract 
38.1 At the same time as the Procuring Agency notifies the successful Bidder that its bid has been accepted, the Procuring Agency shall send the Bidder the Contract Form provided in the bidding documents, incorporating all agreements between the Parties.
38.2 Within ONE week of receipt of the Contract Form, both the successful Bidder and the Procuring Agency shall sign and date the Contract. The Procuring Agency shall issue Purchase Order on the same date of signing of Contract after ensuring the submission of Bank Security for execution of the contract by the Contractor. If the successful Bidder, after completion of all codal formalities shows inability to sign the Contract then their Bid Security/ Contract Security to the extent of proportionate percentage shall be forfeited and the firm shall be blacklisted minimum for three years for future participation. In such situation the Procuring Agency may make the Award to the next lowest evaluated Bidder or call for re-bidding.

The contract is to be made on 04 stamp paper worth of Rs. @ 25 paisa per every one hundred rupees of the total value of the contract, under section 22(A)(B) of schedule 1 of Stamp Duty Act 1899 read with Finance Act 1995 (Act-VI of 1995) Notification No.JAW/HD/8-21/77 (PG) dated 1st January, 2014.

39. Performance Guarantee
39.1 On the date of signing of the Contract, the successful Bidder shall furnish the Performance Guarantee/Security in accordance with the Special Conditions of Contract, in the Performance Guarantee/Security Form. The Performance Guarantee will be 5% of the contract amount. The performance security shall be deposited in the shape of Deposit at Call/ irrevocable Bank Guarantee. In the name of Executive Director Rawalpindi Institute of Cardiology, Rawalpindi.

39.2 Failure of the successful Bidder to comply with the requirement of ITB Clause 37 or ITB Clause 38.1 shall constitute sufficient grounds for the annulment of the Award, in which event the Procuring Agency may make the Award to the next lowest evaluated Bidder or call for re-bidding.

40. Schedule of Requirement
40.1 The supplies shall be delivered/ shipped within 90 days w.e.f the next date after the date of issue of Purchase Order (without penalty)/ opening of LC, and with prescribed penalty, as per following schedule of requirement

<table>
<thead>
<tr>
<th>Mode of penalty</th>
<th>Shipping/Delivery Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Without Penalty</td>
<td>90 Days</td>
</tr>
<tr>
<td></td>
<td>(Procuring agency may vary the delivery period according to the nature and volume of goods)</td>
</tr>
</tbody>
</table>

40.2 However, in special cases, delivery period can be fixed shorter or higher than the above mentioned schedule of requirement as deem appropriate by the Procuring Agency.

40.3 In case of late delivery of goods beyond the periods specified in the Schedule of Requirements, penalty @ 0.1% per day of the cost not exceeding 10% of the purchase order/contract value for late delivered supply shall be imposed upon the Supplier.

40.4 In case of DDP the delivery period will be started from the date of issuance of Purchase order to the Contractor and in the case of CIF it will be from the date of establishment of LC by the bank in favor of manufacturer/Beneficiary.

41. Redressal of grievances by the Procuring Agency
41.1 The Procuring Agency shall constitute a committee comprising of odd number of persons, with proper powers and authorizations, to address the complaints of bidders that may occur prior to the entry into force of the procurement contract.

41.2 Any bidder feeling aggrieved by any act of the Procuring Agency after the submission of his bid may lodge a written complaint concerning his grievances not later than fifteen days after the announcement of the bid evaluation report.
41.3 The committee shall investigate and decide upon the complaint within fifteen days of the receipt of the complaint.
41.4 Mere fact lodging of a complaint shall not warrant suspension of the procurement process.
41.5 Any bidder not satisfied with the decision of the committee of the Procuring Agency may lodge an appeal in the relevant court of jurisdiction.

B. General Conditions of Contract (GCC)

1. Definitions
1.1 In this Contract, the following terms shall be interpreted as indicated:
   a. “The Contract” means the agreement entered into between the Procuring Agency and the Supplier, as recorded in the Contract Form signed by the Parties, including all attachments and appendices thereto and all documents incorporated by reference therein.
   c. “The Goods” means medical equipment and machinery and other items which the Supplier is required to supply to the Procuring Agency under the Contract.
   d. “The Services” means those services ancillary to the supply of above goods, such as printing of special instructions on the label and packing, design and logo of the Institute/ Hospital, Insurance, transportation of goods up to the desired destinations, commissioning, training and other such obligations of the supplier covered under the Contract.
   e. “GCC” mean the General Conditions of Contract contained in this section.
   f. “SCC” means the Special Conditions of Contract.
   g. “The Procuring Agency” means the Executive Director, Rawalpindi Institute of Cardiology, Rawalpindi
   h. “The Procuring Agency’s Country” is the country named in SCC
   i. “The Supplier” means the individual or firms or joint venture supplying the goods under this Contract.
   j. “Day” means calendar day.

2. Application
2.1 These General Conditions shall apply to the extent that they are not superseded by provisions of other parts of the Contract.

3. Country of Origin
3.1 Country of manufacturer should be of USA, Europe and Japan; unless otherwise any other country of manufacturer is mentioned in specifications. However, country of origin of equipment could be from any geographical region of the world as per laws of Pakistan

4. Standards
4.1 The medical equipment of USA must comply with 510(K) FDA (Food & Drug Administration), in case of Europe MDD (Medical Device Directive) and for Japan MHLW (Ministry of Health, Labour & Welfare) for specific quoted model. In case of high-tech equipment, any of the above mentioned two certificates are mandatory. The other/non medical equipment should comply with the relevant National/International product quality standards of respective origins.
5. Use of Contract Documents and Information
5.1 The Supplier shall not, without the Procuring Agency’s prior written consent, disclose the Contract, or any provision thereof, or any specification, plan, drawing, pattern, sample, or information furnished by or on behalf of the Procuring Agency in connection therewith, to any person other than a person employed by the Supplier in the performance of the Contract. Disclosure to any such employed person shall be made in confidence and shall extend only so far as may be necessary for purposes of such performance.
5.2 The Supplier shall not, without the Procuring Agency’s prior written consent, make use of any document or information enumerated in GCC Clause 5.1 except for purposes of performing the Contract.
5.3 Any document, other than the Contract itself, enumerated in GCC Clause 5.1 shall remain the property of the Procuring Agency and shall be returned (all copies) to the Procuring Agency on completion of the Supplier’s performance under the Contract if so required by the Procuring Agency.

6. Patent Rights
6.1 The Supplier shall indemnify the Procuring Agency against all third-party claims of infringement of patent, trademark, or industrial design rights arising from use of the Goods or any part thereof in the country.

7. Submission of Samples
7.1 The samples shall be submitted as per detail in ITB 16.3.

8. Ensuring Storage/Installation Arrangements
8.1 To ensure storage and installation arrangements for the intended supplies, the Supplier shall inform end user for pre-requisites well in time for proper installation. In case the Supplier abides by the given time frame he shall not be penalized for delay.
8.2 In case of late delivery of goods beyond the periods specified in the Schedule of Requirements, penalty @ 0.1% per day of the cost not exceeding 10% of the purchase order/contract value for late delivered supply shall be imposed upon the Supplier.

9. Inspections and Tests
9.1 The Procuring Agency or its representative shall have the right to inspect and/or to test the goods to confirm their conformity to the Contract specifications at no extra cost to the Procuring Agency.
9.2 For the purpose of inspections and tests of equipment. The Supplier shall furnish all reasonable facilities and assistance, to the inspectors at no charge to the Procuring Agency. In the event that inspection & testing is required prior to dispatch and categorically mentioned in the LC clauses, the goods shall not be supplied unless a satisfactory inspection report has been issued in respect of those Goods by the Procuring Agency. However, if the Supplier proves an undue delay in conduct of inspection on the part of Procuring Agency, the Supplier shall not be liable for penalty on account of that delay. The cost of such lab tests shall be borne by the Manufacturer/Supplier.
9.3 The Procuring Agency’s right to inspect, test and, where necessary, reject the goods after the goods have been installed at Procuring Agency’s destinations.
9.4 The Procuring Agency’s right to inspect the premises of bidders/lead bidders/ firms of alliance to inspect their premises/setsups ensuring proper after sales services.
9.5 Nothing in GCC Clause 9 shall in any way release the Supplier from any warranty or other obligations under this Contract.
10. Physical Examination/ Inspection of Goods
10.1 The goods shall be acceptable subject to physical inspection, tests and/or in accordance with the approved sample as decided by the Procuring Agency.
10.2 The Inspection Team will be designated by the Procuring Agency which will inspect each of the equipment/goods as per contracted specifications and installation protocols recommended by the manufacturers.

11. Delivery and Documents
11.1 The Supplier in accordance with the terms specified in the Schedule of Requirements shall make delivery of the goods which is maximum 90-days from the date of issuance of this contract or opening/Establishment of LC. The details of original documents to be furnished by the Supplier are as follows;
   a. Operational Manuals of the medical equipment
   b. Service Manuals indicating step by step service/maintenance protocols of each of the equipment.
   c. Periodic Preventive Maintenance schedules with recommended list of parts/kits to be replaced during PPM.
   d. Any other requirement by the procuring agency.

12. Insurance
12.1 The goods supplied under the Contract shall be delivered duty paid (DDP) or CIF as mentioned under which risk is transferred to the buyer after having been delivered; hence, marine and inland insurance coverage is Supplier’s responsibility. The Supplier shall ensure insurance in advance in full on prevailing premium rates at the time of shipment of the Goods on the behalf of the Purchaser for which the cost is inclusive in the Contract Price.

13. Transportation
13.1 The Supplier shall arrange such transportation of the goods as is required to prevent their damage or deterioration during transit to their final destination as indicated in the Schedule of Requirement.
13.2 Transportation including loading/unloading of goods shall be arranged and paid for by the Supplier, and related cost shall be inclusive in the Contract price. The addresses of destinations/offices shall be provided at the time signing of Contract.

14. Incidental Services
14.1 The Supplier shall be required to provide all the incidental service charges and the cost of such incidental services include in total Contract price.
14.2 The Procuring Agency will not pay any extra amount against any expenditure incurred on it, as the Contract shall be construed as fixed amount Contract and includes all costs.
14.3 The Procuring Agency will provide all the necessary documentations for facilitation but no amount to be given in any case except the Contracted amount.
14.4 All Custom Duties, if any, Octroi, Clearing Charges, transportation etc will be borne by the Contracting firm. However, Procuring Agency will provide all necessary documents for facilitation but no amount to be given in any case except the Contracted amount.
15. Warranty
15.1 A comprehensive warranty of three (03) years (five years for high tech equipment amounting to Rupees 10 Million or higher for single item) for complete system will be provided free of cost including parts, labour, unless otherwise separately mentioned in the specifications. The procuring agency may increase or decrease the span of warranty period as per their institutional requirement. The supplier will categorically mention the disposable/consumable items of the equipment good in advance along with the submitted tender, any item declaration as consumable/disposable after the submission of bid/quotation will not submitted.
15.2 In case of high tech equipment, A comprehensive warranty of five (05) years (amounting to Rupees 10 Million or higher for single item) for complete system will be provided free of cost including parts, labour, unless otherwise separately mentioned in the specifications.

16. Payment
16.1 The method and conditions of payment to be made to the Supplier under this Contract shall be specified in SCC.
16.2 In case of imported goods to be procured on CIF basis, the payment will be made 100% via establishing the LC in favor of manufacturer at sight and receiving the shipping documents/Bill of lading, Insurance, Inspection certificate of the manufacturer, Country of origin, compliance of International standards of quality as per INCOTERMS of latest version Contract. The procuring agency may define its own financial values for the establishment of LC, in case of any special requirement.
16.3 In case of DDP; the payment will be made 100% after presentation of the delivery/Installation/commissioning/completion/execution report of the contract and all other works described in Contract. Unless otherwise part payment, part delivery mentioned in the specifications.

17. Prices
17.1 Prices charged by the Supplier for goods delivered under the Contract shall not vary from the prices quoted by the Supplier in its bid and shall remain the same till expiry of the original bid validity period provided the Procuring Agency’s request for bid validity extension.

18. Contract Amendments
18.1 No variation in or modification of the terms of the Contract shall be made.
18.2 No variation in finalized brands/makes/models shall be allowed except in special conditions where the manufacturer has stopped producing or suspended that model or the latest model of similar series or version has been launched by the manufacturer or non availability due to international mergers of the manufacturers or similar unavoidable constraints.

19. Assignment
19.1 The Supplier shall not assign, in whole or in part, its obligations to perform under this Contract, except with the Procuring Agency’s prior written consent.

20. Subcontracts
20.1 The Supplier shall not be allowed to sublet the job and award subcontracts under this Contract except the firms involved in the Joint Venture/Consortium.
21. Delays in the Supplier's Performance
21.1 Delivery of the goods shall be made by the Supplier in accordance with the time schedule prescribed by the Procuring Agency in the Schedule of Requirements.
21.2 If at any time during performance of the Contract, the Supplier should encounter conditions impeding timely delivery of the goods, the Supplier shall promptly notify the Procuring Agency in writing of the fact of the delay, its likely duration and its cause(s). As soon as practicable after receipt of the Supplier’s notice, the Procuring Agency shall evaluate the situation and may at its discretion extend the Supplier’s time for performance, with or without liquidated damages, in which case the extension shall be ratified by the Parties by amendment of Contract.
21.3 Except as provided under GCC Clause 8.2, a delay by the Supplier in the performance of its delivery obligations shall render the Supplier liable to the imposition of liquidated damages pursuant to GCC Clause 22, unless an extension of time is agreed upon pursuant to GCC Clause 21.2 without the application of liquidated damages.

22. Penalties/Liquidated Damages
22.1 In case of late delivery beyond the presented period, penalty as specified in SCC shall be imposed upon the Supplier/ Manufacturer. The above Late Delivery (LD) is subject to GCC Clause 24, including late delivery for reasons beyond control. Once the maximum is reached, the Procuring Agency may consider termination of the Contract pursuant to GCC Clause 23.
22.2 If the firm provide substandard item and fail to provide the item the payment of risk purchase (which will be purchased by the indenter) the price difference shall be paid by the Firm.

23. Termination for Default
23.1 The Procuring Agency, without prejudice to any other remedy for breach of Contract, by written notice of default sent to the Supplier, may terminate this Contract in whole or in part:
   a. if the Supplier fails to deliver any or all installments of the goods within the period(s) specified in the Contract, or within any extension thereof granted by the Procuring Agency pursuant to GCC Clause 8.2; or
   b. if the Supplier fails to perform any other obligation(s) under the Contract.
   c. if the Supplier, in the judgment of the Procuring Agency has engaged in corrupt or fraudulent practices in competing for or in executing the Contract. For the purpose of this clause: “corrupt practice” means the offering, giving, receiving or soliciting of any thing of value to influence the action of a public official in the procurement process or in Contract execution.

   “fraudulent practice” means a misrepresentation of facts in order to influence a procurement process or the execution of a Contract to the detriment of the Procuring Agency, and includes collusive practice among Bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the Procuring Agency of the benefits of free and open competition.

24. Force Majeure
24.1 Notwithstanding the provisions of GCC Clauses 21, 22, and 23, the Supplier shall not be liable for forfeiture of its Performance Guaranty/ bid Security, or termination/ blacklisting for default if and to the extent that its delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure. For the purposes of this clause Force Majeure means an act of God or an event beyond the
control of the Supplier and not involving the Supplier’s fault or negligence directly or indirectly purporting to mis-planning, mismanagement and/or lack of foresight to handle the situation. Such events may include but are not restricted to acts of the Procuring Agency in its sovereign capacity, wars or revolutions, fires, floods, earthquakes, strikes, epidemics, quarantine restrictions and freight embargoes. If a Force Majeure situation arises, the Supplier shall promptly notify the Procuring Agency in writing with sufficient and valid evidence of such condition and the cause thereof. The Committee of Ministry of Health, constituted for Redressal of grievances, shall examine the pros and cons of the case and all reasonable alternative means for completion of purchase order under the Contract and shall submit its recommendations to the competent authority. However, unless otherwise directed by the Procuring Agency in writing, the Supplier shall continue to perform its obligations under the Contract as far as is reasonably practical and shall seek reasonable alternative means for performance not prevented by the Force Majeure event.

25. Termination for Insolvency
25.1 The Procuring Agency may at any time terminate the Contract by giving written notice of one month time to the Supplier if the Supplier becomes bankrupt or otherwise insolvent. In this event, termination shall be without compensation to the Supplier, provided that such termination shall not prejudice or affect any right of action or remedy which has accrued or shall accrue thereafter to the Parties.

26. Arbitration and Resolution of Disputes
26.1 The Procuring Agency and the Supplier shall make every effort to resolve amicably by direct informal negotiation any disagreement or dispute arising between them under or in connection with the Contract.
26.2 If, after thirty (30) days from the commencement of such informal negotiations, the Procuring Agency and the Supplier have been unable to resolve amicably a Contract dispute, either party may require that the dispute be referred to the Arbitrator for resolution through arbitration.
26.3 In case of any dispute concerning the interpretation and/or application of this Contract shall be settled through arbitration. The arbitrator will be appointed with mutual consent of both the parties. The decisions of the Arbitrator shall be final and binding on the Parties.

27. Governing Language
27.1 The Contract shall be written in English language. Subject to GCC Clause 28, the version of the Contract written in the specified language shall govern its interpretation. All correspondence and other documents pertaining to the Contract, which are exchanged by the Parties, shall be written in English.

28. Applicable Law
28.1 This Contract shall be governed by the laws of Pakistan and the courts of Pakistan shall have exclusive jurisdiction.

29. Notices
29.1 Any Notice given by one party to the other pursuant to this Contract shall be sent to the other party in writing and confirmed to other party’s address specified in SCC.
29.2 A notice shall be effective when delivered or on the notice’s effective date, whichever is later.
Special Conditions of Contract (SCC)

Special Conditions of Contract shall be concluded between the Procuring Agency and the successful bidder(s) as per specific requirement of the specific Product. In case where there is a conflict between the general conditions of the contract and the special conditions of contract, the special condition of contract shall prevail.

1. General:
   1.1 The imported goods shall be of USA, European or Japanese Origin firms; unless otherwise any other country of manufacturer is mentioned in specifications however their delivery/ provision may vary according to geographical location of their factories.
   1.2 The fee of all necessary licenses required to install and operate the equipment shall be born by the Supplier and Procuring agency will facilitate through documents only.
   1.3 The Bank Guarantee will be discharged after successful installation, commissioning, servicing and completion of warranty period (or for any other period mentioned in the specifications). A clearance letter/NOC will be issued by the head of concerned institution.
   1.4 The Supplier shall be deemed to have obtained all the information regarding facilities and charges, in respect of port clearance, loading and unloading, storage, transportation, congestion, Octri, licensing fee and confirmed the requirements thereof at his own responsibility and all such costs and charges are deemed to be included in the rates and prices mentioned in the Priced BOQ and the Procuring Agency will not pay any amount over this contracted amount whether in case of CIF or free delivery consignments.
   1.5 Certificate from the manufacturer that they will provide after sales services through its agent and in case of change of its agent, it will provide the services itself or newly appointed Sole agent/ Sole distributor.
   1.6 The Supplier shall arrange the necessary arrangements for training of hospital staff including doctors, technician, paramedical staff and biomedical engineers. The supplier shall provide a factory training of quoted medical equipment to the hospital biomedical engineer and clinical training to the doctors, if specifically demanded in the advertised specifications/ tender.
   1.7 For smooth functioning and management of medical and other equipment, it is mandatory for the bidders to provide sufficient technical training for high-tech equipment for the biomedical engineers and allied staff from factory trained experienced engineers at the concerned institute.

2. Insurance of Local Goods
   2.1 Insurance of Local Goods and other materials from factory to Site shall include all insurance costs covering the responsibility of all losses or damages, while loading, unloading, storing, trimming on the carrier and transporting to Site up to the installation, testing & commissioning of the medical equipment.
   2.2 Checking and verifying of consignments, issuance of receiving reports and damage reports (when applicable) shall be the Contractor's responsibility.
   2.3 The cost of insurance shall be quoted on the basis of insurance through National Insurance Company (NIC) of Pakistan or any other insurance company operating in Pakistan acceptable to the Procuring Agency.
3. Payment

3.1 In case of imported goods; the payment will be made 100% via establishing the LC in favor of manufacturer/beneficiary at sight and receiving shipping documents/ Bill of lading, Insurance, Inspection certificate of the manufacturer, Country of origin, compliance of International standards of quality as per INCOTERMS of latest version. The payment will be made in the following manner through a letter of credit to be opened by the Procuring Agency. The procuring agency may define its own financial values for the establishment of LC, in case of any special requirement.

3.2 The amount of Letter of Credit shall be paid to beneficiary/Manufacturer on production of the following non-negotiable documents.

   i. Draft.
   ii. Three original and two copies of the Supplier's Invoice showing purchaser as Secretary, Health, Government of Punjab, Pakistan, the Contract No., Goods description, quantity, unit price and total amount. Invoice must be signed in original stamped or sealed with company stamp or seal.
   iii. Four Copies of packing list identifying content of each package.
   iv. One original and two copies of the negotiable, clean, on board through bill of lading marked “freight prepaid” and showing purchaser as Secretary Health.
   v. Copy of insurance certificate showing purchaser as the beneficiary;
   vi. The original of the manufacturer's warranty certificate covering all items supplied;
   vii. One original copy of the Supplier's Certificate of origin covering all items supplied.
   viii. Original copy of the certificate of Pre-Shipment inspection furnished to Supplier by the purchaser representative (if specifically required by the purchaser).
   ix. Test/ Inspection Certificate of manufacturers.
   x. Compliance Report of Internal Quality Standards.
   xi. Product model, serial numbers.
   xii. Manufacturer's Guarantee Certificate to the effect that:

       a) the goods supplied by them are strictly in conformity with the specifications stipulated in the contract.
       b) the goods have been packed and marked suitable for transport by Sea, Rail, Road and Air in terms of the contract.
       c) the stores supplied by them are brand new and absolutely free from any material or manufacturing defects.
       d) Manufacturer's test certificate in respect of each consignment.

3.3 In case of DDP; the payment will be made 100% after presentation of the delivery/Installation/commissioning/completion report of the equipment and all other works described in Contract. Unless otherwise part payment, part delivery mentioned in the specifications.

4. Execution of Warranty

4.1 A Log Book for the medical equipment which needs regular after sales services (To be specified by the procuring agency in bidding document) shall be maintained by the Supplier Service Engineer in consultation with the end user department. This will include the name of the equipment, down time, preventive maintenance schedule, replacement of parts, down time etc.

4.2 The Warranty will start from the date of acceptance of equipment (properly installed, as per contracted specifications and handing over of related documents mentioned in GCC and will last for its warranty period at 95% uptime.
4.3 The maintenance will be the responsibility of the manufacturer / their agent. An annual optimal uptime of 95% is considered as acceptable level of performance.

4.4 Software and hardware upgradeation of the computing system should be carried out as available during warranty period as recommended by the manufacturer.

4.5 Manufacturer / Supplier shall be responsible for rectifying with all possible speed at their own expense any defect or fault in the system which may develop at any time during installation, commissioning period.

4.6 Manufacturer will guarantee the availability of spare parts and accessories for the system for ten years.

4.7 Uptime shall be defined as the time available to the user for doing procedures/ data acquisition and processing during working hours throughout the year.

4.8 Manufacturer /Supplier shall check system performance during and after every 4-months. An “Optimal Percentage” will be calculated by dividing “System in Service” hours by hours available, both measured on the basis of working hours as detailed above.

4.9 If the uptime percentage for the measurement period (04-months) shall fall short of 95% the following formula will be applied to determine additional days in the warranty / service contract period.

   a. 100% - 95%  No Penalty
   b. 95% - 90%  The warranty period will be extended by 2.0 times the number of days as extra down time.
   c. 90% - 80%  The warranty period will be extended by 3.0 times the number of days as extra down time
   d. Below 80%  The warranty period will be extended by 4.0 times the number of days as extra down time

4.10 Down time is defined as the failure in the equipment operation to acquire or process the data or procedure, resulting in inability to carry out the required procedure properly.

4.11 The firm will be bound to make arrangements for availability of qualified technical staff in hospital / site for prompt execution/coordination of after sale services.

4.12 Down time will start when the end user/ Staff In-charge notifies the designated service facility verbally or in writing to qualified technical staff of the firm stationed in the Hospital.

4.13 Down time will end once the repairs have been affected and the system is again available for clinical use.

4.14 The firm will provide the recommended preventive maintenance schedule of each of the equipment at the time of delivery.

4.15 The firm will bound to execute the installation/ maintenance according to the installation/ service protocol and will replace the components/ kits recommended by the manufacturers for installation and Periodic Preventive maintenance.

4.16 The scheduled preventive maintenance shall be in accordance with Service Protocol recommended/ advised by the manufacturer.

4.17 Remote service via modem shall be preferred if provided by the manufacturer to pick-up early faults at no cost to the hospital for the high-tech equipment.

4.18 The manufacturer / supplier will be responsible for preventive maintenance of equipment as per manufacturers’ Service Manuals and shall keep a check for electrical / magnetic / temperature and humidity conditions. Such a check should be made monthly and record should be maintained in the log book of the hospital.
5. Packing & Marking  
5.1 Packing: Usual export packing to ensure safe journey up to the site of consignee.  
Marking: Each packing should be clearly marked in suitable size in bold letters as per requirement.

6. Trans-shipment  
6.1 Trans-shipment is not allowed (In case of no direct flight from the shipping country to the destination, this may be reviewed by the procuring agency on case to case basis).

7. Place of delivery  
7.1 As per detail mentioned in the invitation for bids/tender notice.

9. Correspondence addresses

Procuring Agency
________________________________________________________________________

Contracting Firm
M/S--------------------------------------------------------------------------------------------------------
INVITATION FOR BIDS

RAWALPINDI INSTITUTE OF CARDIOLOGY RAWAL ROAD, RAWALPINDI

REFERENCE NO: RIC/PO/3090/17, DATED: 14-10-2017

1. Rawalpindi Institute of Cardiology, Rawalpindi invites sealed bids from the firms having established credentials in terms of Technical, Financial and Managerial capabilities for the supply of medical equipments as per details given below during current financial year 2017-18:

DEMAN FOR ANNUAL TENDER OF MEDICAL / LAB. EQUIPMENTS FOR THE YEAR 2017-18

NOTE:
- RIC is exempted from GST therefore it is requested to quote the rates exclusive from GST.
- Quantity can be reduced according to the budget.

<table>
<thead>
<tr>
<th>S/No</th>
<th>Equipment Name With Detail Specifications</th>
<th>Qty In Hand</th>
<th>Qty Required</th>
<th>Estimated Cost/ Unit</th>
<th>Total EstimatedCost</th>
</tr>
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<tbody>
<tr>
<td>1.</td>
<td>Temporary pace maker (single chamber)</td>
<td>64</td>
<td>30</td>
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<td>9.0 M</td>
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<td>2.</td>
<td>Temporary pace maker (dual chamber)</td>
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<td>4.</td>
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<td>22</td>
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<td>Digital BP Appratus</td>
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<td>8.</td>
<td>Surgical loops 3.5</td>
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<td>9.</td>
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<td>10.</td>
<td>CR Cassettes: (14x17) Compactable with Konica Minolta</td>
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<td>10</td>
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<td>0.80 M</td>
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<td>RADIOLGY DEPARTMENT</td>
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<td>11.</td>
<td>Portable X-Ray Unit (Digital with wireless FPD type )</td>
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<td>02</td>
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<td>08 M</td>
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<td>12.</td>
<td>Up gradation of X-Ray to DR (Digital radiography)</td>
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<td>13.</td>
<td>Fat Measurement Software for CT Angio</td>
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<td>3M</td>
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<tr>
<td>14.</td>
<td>Up gradation of 64 Slice CT Scan System in to 128 Slice</td>
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<td></td>
<td>PATHOLOGY &amp; BLOOD BANK</td>
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<td>Automated Plasma Extractor</td>
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<td>Blood bag tube sealer</td>
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<td>Weighing balance for blood bags</td>
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<td>23</td>
<td>Non-Invasive Continuous CVP &amp; Continuous Jugular Venous Oximeter Monitoring System with 22” screen</td>
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<td>01</td>
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<tr>
<td>24</td>
<td>Online Blood pressure Monitor</td>
<td>00</td>
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<td>25</td>
<td>12 Channel ECG Machine with 18 leads software</td>
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<td>0.5M</td>
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<tr>
<td>26</td>
<td>Defibrillator with Pacing</td>
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<td>06</td>
<td>0.6 M</td>
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<td>OT Department</td>
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<td>27</td>
<td>IABP</td>
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<td>Pneumatic Sternum saw</td>
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<td>02</td>
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<td>29</td>
<td>Head Light with stand</td>
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<td>EVH System</td>
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<td>Syringe Pump</td>
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<td>32</td>
<td>Invasive Cardiac Monitor</td>
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<td>Microplegia System</td>
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<td>36</td>
<td>PICCO Module Compatible with Nihan Khoden Cardiac Monitor</td>
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<td>37</td>
<td>Cerebral Oximeter</td>
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<td>Peripheral nerve stimulator</td>
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<td>02</td>
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<td>Video Laryngoscopes</td>
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<td>ICE Maker</td>
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<td>Hypothermia Machine (Dual Chamber)</td>
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<td>Cell Saver</td>
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<td>Handy blood gas analyzer</td>
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<td>Anesthesia Department /Demand for Simulators for skill Lab</td>
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<tr>
<td>45</td>
<td>Human patient simulator for Anesthesia and critical care</td>
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<td>46</td>
<td>Ultrasound central line training Model 10</td>
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<td>ECHO Simulator</td>
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<td>Simulator for Bronchoscope and endoscopic tracheal intubation</td>
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<td>Spinal and Epidural Anesthesia simulator</td>
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<td>52</td>
<td>Portable Ventilator</td>
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<td>53</td>
<td>Skill lab for Cath lab</td>
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<td>01</td>
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<td>EP Department</td>
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<td>ECG Machine &amp; USB /External Memory</td>
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<td>3-D Mapping system</td>
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<td>Intra cardiac Echocardiography</td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>58</td>
<td>Co-57 flood source</td>
<td>01</td>
<td></td>
<td>0.5 M</td>
<td>0.5 M</td>
</tr>
<tr>
<td>Sr. No</td>
<td>Name</td>
<td>Quantity</td>
<td>Meters</td>
<td>Meters</td>
<td></td>
</tr>
<tr>
<td>--------</td>
<td>------</td>
<td>----------</td>
<td>--------</td>
<td>--------</td>
<td></td>
</tr>
<tr>
<td>59.</td>
<td>Co-57 point source</td>
<td>01</td>
<td>0.5</td>
<td>0.5</td>
<td></td>
</tr>
<tr>
<td>60.</td>
<td>Contamination Probe</td>
<td>01</td>
<td>0.3</td>
<td>0.3</td>
<td></td>
</tr>
<tr>
<td>61.</td>
<td>Pocket dosimeter</td>
<td>03</td>
<td>0.1</td>
<td>0.3</td>
<td></td>
</tr>
<tr>
<td>62.</td>
<td>Syringe Pump</td>
<td>01</td>
<td>0.2</td>
<td>0.2</td>
<td></td>
</tr>
<tr>
<td>63.</td>
<td>Lead syringe carrier</td>
<td>03</td>
<td>0.3</td>
<td>0.9</td>
<td></td>
</tr>
<tr>
<td>64.</td>
<td>Lead Bin waste container</td>
<td>01</td>
<td>0.3</td>
<td>0.3</td>
<td></td>
</tr>
<tr>
<td>65.</td>
<td>Radiwash liquid</td>
<td>02</td>
<td>0.1</td>
<td>0.1</td>
<td></td>
</tr>
<tr>
<td>66.</td>
<td>Mobile Lead Barrier</td>
<td>01</td>
<td>0.3</td>
<td>0.3</td>
<td></td>
</tr>
<tr>
<td>67.</td>
<td>Printer color for GAMMA (Dicom compatible)</td>
<td>01</td>
<td>0.25</td>
<td>0.25</td>
<td></td>
</tr>
<tr>
<td>68.</td>
<td>Printer for Dose calibrator (Hot Lab)</td>
<td>01</td>
<td>0.25</td>
<td>0.25</td>
<td></td>
</tr>
<tr>
<td>69.</td>
<td>CPET VO2 Max</td>
<td>00</td>
<td>12.0</td>
<td>12.0</td>
<td></td>
</tr>
<tr>
<td>70.</td>
<td>Bed side Compression Device</td>
<td>00</td>
<td>0.15</td>
<td>1.2</td>
<td></td>
</tr>
<tr>
<td>71.</td>
<td>Rehabilitation Stairs</td>
<td>00</td>
<td>0.8</td>
<td>1.6</td>
<td></td>
</tr>
<tr>
<td>72.</td>
<td>Rehabilitation Steps</td>
<td>00</td>
<td>0.9</td>
<td>0.9</td>
<td></td>
</tr>
<tr>
<td>73.</td>
<td>6 min Walk test with portable Spirometry</td>
<td>00</td>
<td>1.2</td>
<td>2.4</td>
<td></td>
</tr>
<tr>
<td>74.</td>
<td>Upper limb Ergo meter</td>
<td>00</td>
<td>0.8</td>
<td>0.8</td>
<td></td>
</tr>
<tr>
<td>75.</td>
<td>Trade Mil Cardiac</td>
<td>00</td>
<td>2.2</td>
<td>4.4</td>
<td></td>
</tr>
<tr>
<td>76.</td>
<td>Physiology standing table/tilt table</td>
<td>00</td>
<td>1.2</td>
<td>1.2</td>
<td></td>
</tr>
<tr>
<td>77.</td>
<td>Recumbent bike</td>
<td>01</td>
<td>0.9</td>
<td>1.8</td>
<td></td>
</tr>
<tr>
<td>78.</td>
<td>Latitude / Lateral stability trainer</td>
<td>00</td>
<td>1.5</td>
<td>1.5</td>
<td></td>
</tr>
<tr>
<td>79.</td>
<td>High Frequency chest wall oscillation (HFCWO)</td>
<td>00</td>
<td>1.5</td>
<td>1.5</td>
<td></td>
</tr>
<tr>
<td>80.</td>
<td>Chest precursors</td>
<td>02</td>
<td>0.15</td>
<td>0.15</td>
<td></td>
</tr>
</tbody>
</table>

**ECHO Department**

<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Name</th>
<th>Quantity</th>
<th>Meters</th>
<th>Meters</th>
</tr>
</thead>
<tbody>
<tr>
<td>81.</td>
<td>4D Echo Machine</td>
<td>00</td>
<td>25</td>
<td>25</td>
</tr>
</tbody>
</table>

**SPECIFICATION**

<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Clinical Specialty</th>
<th>Medical and lab Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Temporary pace maker (single chamber)</td>
<td></td>
</tr>
</tbody>
</table>

**Clinical Specialty**: Temporary pacemaker for cardiac pacing

**Operating Features and Characteristics**

- Asynchronous and demand mode operation
- Sensing: light indication
- Pacing: light indication
- Calibrated rate, output and sensitivity control
- Defibrillator protected

**Parameters**:

- Stimulation control of current output up to 2
- Pulsing rate control adjustment up to 150 pp
- Sensitivity control upto 8mV
- Pulse width 1.5 m sec
- Asynchronous and demand mode switch

**Indicators**:

- Battery status light indication

**Technical Specification**: Temporary pacemaker for cardiac pacing

A pacemaker is a small device that’s placed in the chest or abdomen to help control abnormal heart rhythms. This device uses electrical pulses to prompt the heart to beat at a normal rate. Pacemakers are used to treat arrhythmias (ah-RITH-me-abs). Arrhythmias are problems with the rate or rhythm of the heartbeat.
<table>
<thead>
<tr>
<th>Sr. No</th>
<th>02</th>
<th>03</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical Specialty</td>
<td>Medical and lab Equipment</td>
<td>Medical and lab Equipment</td>
</tr>
<tr>
<td>Generic Name</td>
<td>Temporary pacemaker (dual chamber)</td>
<td>Temporary pacemaker (Triple chamber)</td>
</tr>
<tr>
<td>Quantity</td>
<td>02</td>
<td>02</td>
</tr>
<tr>
<td>Clinical purpose</td>
<td>A pacemaker is a small device that’s placed in the chest or abdomen to help control abnormal heart rhythms. This device uses electrical pulses to prompt the heart to beat at a normal rate. Pacemakers are used to treat arrhythmias (ah-RITH-me-ahs). Arrhythmias are problems with the rate or rhythm of the heartbeat.</td>
<td>A pacemaker is a small device that’s placed in the chest or abdomen to help control abnormal heart rhythms. This device uses electrical pulses to prompt the heart to beat at a normal rate. Pacemakers are used to treat arrhythmias (ah-RITH-me-ahs). Arrhythmias are problems with the rate or rhythm of the heartbeat.</td>
</tr>
</tbody>
</table>

**Technical Specification:**

**Sr. No 02**

- **Dimensions:** 212 mm x 96 mm x 51 mm (8.3” x 3.8” x 2.0”)
- **Weight:** 490 g (1.08 lb) including battery
- **Battery:** Alkaline: 4 days (9.0V)
- **Basic Rate:** 30 – 220 ppm
- **High Pacing Rate:** 70 – 1000 ppm
- **Stimulation Amplitude:** 0.1 – 18 V
- **0.1 – 18 V:** 0.05 – 1.5 ms
- **Sensitivity:** Atrial: 0.2 – 20 mV Ventricular: 1.0 – 20 mV
- **Refractory Period:** Atrial: 250 ms Ventricular: 250 ms

---

**Sr. No 03**

- **Dimensions:** 212 mm x 96 mm x 51 mm (8.3” x 3.8” x 2.0”)
- **Weight:** 490 g (1.08 lb) including battery
- **Battery:** Alkaline: 4 days (9.0V)
- **Basic Rate:** 30 – 220 ppm
- **High Pacing Rate:** 70 – 1000 ppm
- **Stimulation Amplitude:** 0.1 – 18 V
- **0.1 – 18 V:** 0.05 – 1.5 ms
- **Sensitivity:** Atrial: 0.2 – 20 mV Ventricular: 1.0 – 20 mV
- **Refractory Period:** Atrial: 250 ms Ventricular: 250 ms

---

**OTHER FEATURES:**
- Portable
- Accessories including case and cables

**OPERATING REQUIREMENTS:**
- Standard alkaline battery operation
- Backup operation during battery change.

**Accessories:** Complete with standard accessories, Operating manual, Services manual, error code book, part list and software if any.

**Optional:** Nil

**Warranty:** Two year with all spare parts, during warranty period firm should maintain equipment’s and done PPM as per principle recommendation. If any spare part required during installation or PPM will be responsibility of the firm. Firm must send annual PPM schedule with installation report.
### Pacing Modes:
- **Primary:** DDD (BV, R, L), VVI (BV, R, L), AAI, VDD (BV, R, L)
- **Secondary:** D00 (BV, R, L), V00 (BV, R, L), A00, DVI (BV, R, L), DAI (BV, R, L), VAT (BV, R, L), AAT, DDD+AT (BV, R, L), DAT (BV, R, L), DDI (BV, R, L)

### Other Features:
- Portable
- Accessories including case and cables

### Operating Requirements:
- Standard alkaline battery operation

### Accessories:
- Operating manual, Services manual, error code book, part list and software if any, Complete with standard accessories.

### Warranty:
- Two year with all spare parts, during warranty period firm should maintain equipment’s and done PPM as per principle recommendation. If any spare part required during installation or PPM will be responsibility of the firm. Firm must send annual PPM schedule with installation report.

---

<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Clinical Specialty</th>
<th>Generic Name</th>
<th>Quantity</th>
<th>Clinical Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>04</td>
<td>Medical and lab Equipment</td>
<td>Laryngoscopes</td>
<td>22</td>
<td>Laryngoscope is used for inserting of ETT tubes and other purpose.</td>
</tr>
</tbody>
</table>

**Technical Specification:**
- Macintosh type.
- Blades of 4 or 5.
- Blade Sizes 1, 2, 3, 4 /5.
- SS/corrosion free Blades.
- Dry Battery handle.
- Blades of stainless steel with integral light carrier.
- Fiber optic light carrier.
- Xenon illumination of light source.
- Complete with batteries and carrying case.

**Accessories:**
- Sterilization system complete consisting of standard set or as follows, Container Bottom, Container Lid, Wire Basket, Silicone mat, Wrapping Drapes.

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<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Clinical Specialty</th>
<th>Generic Name</th>
<th>Quantity</th>
<th>Clinical Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>05</td>
<td>Medical and lab Equipment</td>
<td>Digital BP Apparatus</td>
<td>10</td>
<td>Used for blood pressure monitoring in different departament.</td>
</tr>
</tbody>
</table>

**Technical Specification:**
- Digital BP apparatus.
- Fully automatic (digital.)
- Delivers the accuracy and reliability, in the quality and consistency of the results.
- Supplied with an Easy Cuff (22-42 cm, fits most adult arm sizes.
- Easy High Blood Pressure LED indicator signals
- Constructed from shatter resistant material.
- Reading scale ranges from 0 to 300 mmHg.
- Molded latex free inflation bladder of high quality.
- Latex free inflation bulb fitted with filter to reduce dust build up.
- High visibility graduations.
- Pediatric and adult cloth/nylon cuff with Velcro fastening
- Battery / cell operated.

**Accessories:**
- Operating manual, Services manual, error code book, part list and software if any.

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<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Clinical Specialty</th>
<th>Generic Name</th>
<th>Quantity</th>
<th>Clinical Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>06</td>
<td>Medical and lab Equipment</td>
<td>Electronic Weight Balance</td>
<td>15</td>
<td></td>
</tr>
</tbody>
</table>
**Clinical Purpose**: Used for measurement of patient weight.

**Technical Specification**: Dedicated medical grade digital weight balance, “Range. 0.5 Kg to 200Kg”, suitable for peads and adult patients, “Precision, + 05%” digital display with at least 02 types of weight units, as per sample approved.

**Accessories**: Nil

**Optional**: Nil

**Warranty**: Two year with all spare parts, during warranty period firm should maintain equipment’s and done PPM as per principle recommendation. If any spare part required during installation or PPM will be responsibility of the firm. Firm must send annual PPM schedule with installation report.

<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Clinical Specialty</th>
<th>Generic Name</th>
<th>Quantity</th>
<th>Clinical Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>07</td>
<td>Medical and Lab Equipment</td>
<td>Syringe Pumps</td>
<td>50</td>
<td>For delivery of medicine to patients with precessions.</td>
</tr>
<tr>
<td></td>
<td><strong>Technical Specification</strong>:</td>
<td></td>
<td></td>
<td>Syringe pump for fluid administration. ◆ Flow Rates: 0.1 - 400 ml/hr. (Approx.) ◆ Digital display of set parameters. ◆ Universal Syringe acceptance capability for disposable, Plastic, Size, 10, 20, 50, 60 ml. ◆ Drive Accuracy. ±3% ◆ Display of drug name, Infusion rate, infused volume and volume to be infused. ◆ Automatic adaptation of controls according to syringe /infusion set. ◆ Quick freed/rapid infusion facility. ◆ Rechargeable battery and mains operated 220V, 50Hz. ◆ Safety alarm audible and acoustic for occlusion end of infusion, low battery. ◆ Battery back up 3 to 4Hours. ◆ Should be compatible with docking station.</td>
</tr>
<tr>
<td></td>
<td><strong>Accessories</strong>: Nil</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Optional</strong>: Nil</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sr. No 08</th>
<th>Clinical Specialty</th>
<th>Medical and Lab Equipment</th>
<th>Generic Name</th>
<th>Surgical loops 3.5</th>
<th>Quantity</th>
<th>01</th>
<th>Clinical Purpose</th>
<th>Use during surgery for micro procedures.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Technical Specification</strong>:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Magnification : 3.5X</td>
<td>Working distance : 300 to 500 mm</td>
<td>Field of Vision : Up to 105mm</td>
<td>Depth of field : Up to 105mm</td>
<td>Accessories: Microfiber Cloth Anti fog cleaning lens liquid, side shield, Nose pieces, Interchangeable sweatband, sponges, Elastic strap adjuster protective lens, sterilized knobs lens.</td>
<td>Optional: Nil</td>
<td>Warranty: Two year with all spare parts, during warranty period firm should maintain equipment’s and done PPM as per principle recommendation. If any spare part required during installation or PPM will be responsibility of the firm. Firm must send annual PPM schedule with installation report.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sr. No 09</th>
<th>Clinical Specialty</th>
<th>Medical and Lab Equipment</th>
<th>Generic Name</th>
<th>Surgical loop 2.5</th>
<th>Quantity</th>
<th>01</th>
<th>Clinical Purpose</th>
<th>Use during surgery for micro procedures.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Technical Specification</strong>:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Magnification : 2.5X</td>
<td>Working distance : 300 to 500 mm</td>
<td>Field of Vision : Up to 105mm</td>
<td>Depth of field : Up to 105mm</td>
<td>Accessories: Microfiber Cloth Anti fog cleaning lens liquid, side shield, Nose pieces, Interchangeable sweatband, sponges, Elastic strap adjuster protective lens, sterilized knobs lens.</td>
<td>Optional: Nil</td>
<td>Warranty: Two year with all spare parts, during warranty period firm should maintain equipment’s and done PPM as per principle recommendation. If any spare part required during installation or PPM will be responsibility of the firm. Firm must send annual PPM schedule with installation report.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sr. No 10</th>
<th>Clinical Purpose</th>
<th>Use for measurement of patient weight.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Technical Specification</strong>:</td>
<td></td>
<td>Dedicated medical grade digital weight balance, “Range. 0.5 Kg to 200Kg”, suitable for peads and adult patients, “Precision, + 05%” digital display with at least 02 types of weight units, as per sample approved.</td>
</tr>
<tr>
<td>Sr. No</td>
<td>Clinical Specialty</td>
<td>Generic Name</td>
</tr>
<tr>
<td>--------</td>
<td>---------------------</td>
<td>--------------</td>
</tr>
<tr>
<td>11</td>
<td>Medical and lab Equipment</td>
<td>Portable X-Ray Unit (Digital with wireless FPD type)</td>
</tr>
<tr>
<td>12</td>
<td>Medical and lab Equipment</td>
<td>Up gradation of X-Ray to DR (Digital Radiography)</td>
</tr>
<tr>
<td>13</td>
<td>Medical and lab Equipment</td>
<td>Fat Measurement Software for CT Angio</td>
</tr>
<tr>
<td>14</td>
<td>Medical and lab Equipment</td>
<td>Up gradation of 64 Slice CT Scan System in to 128</td>
</tr>
</tbody>
</table>
Up gradation of already installed 64 Slice CT Scan System in to 128 Toshiba, model: Aquilion 64.

**Accessories:** Nil

**Optional:** Nil

**Warranty:** Two year with all spare parts, during warranty period firm should maintain equipments and done PPM as per principle recommendation. If any spare part required during installation or PPM will be responsibility of the firm. Firm must send annual PPM schedule with installation report.

<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Clinical Specialty</th>
<th>Generic Name</th>
<th>Quantity</th>
<th>Clinical purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>Medical and lab Equipment</td>
<td>Automated Plasma Extractor</td>
<td>01</td>
<td>Use to separation of plasma from formed Elements/ RBCs</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>Technical specification:</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>Control:</strong> Fully Automated,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>Sensor:</strong> Infrared</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>Clamping:</strong> Motor Activated</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>Alarm:</strong> Audio Visual</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>Frame And Construction:</strong> Stainless Steel</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Compression plate designed to exert uniform pressure on the blood bag, attractive front panel bezel, durable and reliable sturdy construction, portable light weight, easy to use simple design.</td>
</tr>
<tr>
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<td></td>
<td></td>
<td></td>
<td><strong>Accessories:</strong></td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td><strong>Optional:</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>Warranty:</strong> Two year with all spare parts, during warranty period firm should maintain equipments and done PPM as per principle recommendation. If any spare part required during installation or PPM will be responsibility of the firm. Firm must send annual PPM schedule with installation report.</td>
</tr>
<tr>
<td>16</td>
<td>Medical and lab Equipment</td>
<td>Serofuge Blood bank</td>
<td>01</td>
<td>Use for separation of serum from whole blood</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>Technical specification:</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>Maximum Capacity:</strong> Fixed angle rotor, Twelve (75x13mm tubes) capacity</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>Speed Range:</strong> 2000 to 4000 RPM</td>
</tr>
<tr>
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<td></td>
<td></td>
<td><strong>RCF:</strong> 500-1000 x g</td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td><strong>Orientation:</strong> Bench top</td>
</tr>
<tr>
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<td></td>
<td></td>
<td><strong>Power Requirements:</strong> 220-240 volts, 50-60Hz</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>Time Range:</strong> In Seconds</td>
</tr>
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<td></td>
<td></td>
<td><strong>Accessories:</strong></td>
</tr>
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<td></td>
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<td></td>
<td></td>
<td><strong>Optional:</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>Warranty:</strong> Two year with all spare parts, during warranty period firm should maintain equipments and done PPM as per principle recommendation. If any spare part required during installation or PPM will be responsibility of the firm. Firm must send annual PPM schedule with installation report.</td>
</tr>
<tr>
<td>17</td>
<td>Medical and lab Equipment</td>
<td>Sterile Tubing welder /Docking device</td>
<td>01</td>
<td>Use as user-friendly tubing welder ideal for sterile connecting transfer bags</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>Application:</strong> Component pooling, Leukoreduction, Apheresis set modification, Quality control sampling, Quickly connects PVC tubing in any combination of wet and dry—including wet-to-wet—with strong, smooth welds., LCD screen</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>Wafers:</strong> Single use disposable wafers</td>
</tr>
<tr>
<td></td>
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<td></td>
<td>**Built-in BOX for disposal</td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td><strong>Tubing Material:</strong> Polyvinyl Chloride (PVC)</td>
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<td></td>
<td></td>
<td><strong>Tubing size:</strong> Outer Diameter : 3.0 mm-4.0 mm</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>Wall thickness:</strong> 0.40 mm–0.80 mm</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>Weld Cycle:</strong> Approximately 1 weld every 10-20 seconds</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>**Power supply AC 220V/110V ±10%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>**Operation conditions Temperature 15°C~32°C</td>
</tr>
</tbody>
</table>
### Sr. No 18
<table>
<thead>
<tr>
<th>Clinical Specialty</th>
<th>Medical and lab Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generic Name</td>
<td>Refrigerated centrifuge (Cryofuge)</td>
</tr>
<tr>
<td>Quantity</td>
<td>01</td>
</tr>
<tr>
<td>Clinical purpose</td>
<td>Use for making different component i.e Platelets, Rcc, FFPs from whole blood.</td>
</tr>
</tbody>
</table>

**Technical specification:**
- **Capacity:** Refrigerated centrifuge for the processing of 12 bags of 550 ml, quadruple, triple, double in single run,
- **RCF:** 5000 to 7,500 X G
- **RPM:** 4000 to 7,000
- **Acceleration Rates:** 08-12
- **Deceleration Rates:** 08-12
- **Temperature Range:** -8°C to +40°C
- **Rotor Type:** Rotor can easily accommodate 12 x 550 ml quadruple, triple, double bloodbags
- **Memory:** Storage of Minimum 20 program memory
- **Control System:** Microprocessor control, self-diagnostics for servicing
- **Safety Features:** Automatic Lid lock, Imbalance detection, Security key switch
- **Display:** VIDEO set graphics (includes run graph), Info/Error messages in two languages
- **Motor:** High-performance Induction (brushless)
- **Electrical Requirement:** 220 - 240V 50Hz

**Accessories:** Operating manual, Services manual, error code book, part list and software if any, All with UPS

### Sr. No 19
<table>
<thead>
<tr>
<th>Clinical Specialty</th>
<th>Medical and lab Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generic Name</td>
<td>Manual Plasma Extractor</td>
</tr>
<tr>
<td>Quantity</td>
<td>02</td>
</tr>
<tr>
<td>Clinical purpose</td>
<td>Separation of plasma from whole blood.</td>
</tr>
</tbody>
</table>

**Technical specification:** Mechanical Plasma Extractor, Easy to use, manual system - accepts all kind of blood bags, frame and construction in stainless steel, transparent plate for visual control of red cells and plasma, power full spring.

**Accessories:**

### Sr. No 20
<table>
<thead>
<tr>
<th>Clinical Specialty</th>
<th>Medical and lab Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generic Name</td>
<td>Water Bath</td>
</tr>
<tr>
<td>Quantity</td>
<td>01</td>
</tr>
<tr>
<td>Clinical purpose</td>
<td>To maintain the temperature</td>
</tr>
</tbody>
</table>

**Technical specification:**
- **Temperature Range:** (°C): Min 5°C above ambient up to 195 °C with additional boiling mode.
- **Resolution of Display:** +0, 1°C below 99.9°C, 1°C above 100°C.
- **Controller:** Digital display of all set parameters such as temperature, alarm and time values.
- **Timer:** Digital timer from 1 min up to 999 hours for: ON DELAYED ON, HOLD or HOLD set temperature.
- **Volume:** 10-15 Liters.
- **Voltage:** 220-240 Volts, 50/60Hz
- **Temperature Control:** Electronic over temperature controller TWW protection, in case of over temperature due to failure, the heating is switched off at approx. 10°C above the set temperature.
**Auto Diagnostic System:** PID microprocessor controller with integrated auto diagnostic system with fault indication.

**Alarm:** Visual and acoustic alarm a programmerend; heating is switched off automatically in case of low liquid level.

### Accessories:

**Optional:**

**Warranty:** Two year with all spare parts, during warranty period firm should maintain equipment’s and done PPM as per principle recommendation. If any spare part required during installation or PPM will be responsibility of the firm. Firm must send annual PPM schedule with installation report.

<table>
<thead>
<tr>
<th>Sr. No 21</th>
<th>Clinical Specialty</th>
<th>Medical and Lab Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Generic Name</td>
<td>Blood bag tube sealer</td>
</tr>
<tr>
<td></td>
<td>Quantity</td>
<td>01</td>
</tr>
<tr>
<td></td>
<td>Clinical purpose</td>
<td>To seals the blood bag tube.</td>
</tr>
</tbody>
</table>

**Technical specification:**
- Working: bench top fully automated.
- Sealing capacity: seal multiple tube at atime.
- Sealing time: 1 to 2 sec.
- Tubing diameter : 2 to 6 mm
- Indication lamp: ready / seal.
- Operating frequency: 40.68 MHz
- Power source : 220-240VAC
- Temperature Operating : 0-40 C or 32 to 104 F
- Optical tube detection for precise sealing without mechanical wearing.
- Tension relief arms prevent traction on the tubing during the sealing process.
- Ability to adjust the tubing segment length to best meet operator needs.
- Removable sealing head for cleaning.
- Error indicator at the top of the device clearly alerts operators.

### Accessories:

**Optional:**

**Warranty:** Two year with all spare parts, during warranty period firm should maintain equipments and done PPM as per principle recommendation. If any spare part required during installation or PPM will be responsibility of the firm. Firm must send annual PPM schedule with installation report.

<table>
<thead>
<tr>
<th>Sr. No 22</th>
<th>Clinical Specialty</th>
<th>Medical and Lab Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Generic Name</td>
<td>Weighing balance for blood bags</td>
</tr>
<tr>
<td></td>
<td>Quantity</td>
<td>01</td>
</tr>
<tr>
<td></td>
<td>Clinical purpose</td>
<td>Use for weighing the blood bags prior to centrifuging the bags to maintain the balance.</td>
</tr>
</tbody>
</table>

**Technical specification:**
- Pan : two pan for balancing of blood bags, easily accommodate blood bags of 550ml in each pan
- Audio/ video : audio alarm and visual indication
- Display : digital
- Weighing range : 0 to 6000 grams/ml
- Input voltage : 230 V AC / 50 Hz

### Accessories:

**Optional:**

**Warranty:** Two year with all spare parts, during warranty period firm should maintain equipments and done PPM as per principle recommendation. If any spare part required during installation or PPM will be responsibility of the firm. Firm must send annual PPM schedule with installation report.

<table>
<thead>
<tr>
<th>Sr. No 23</th>
<th>Clinical Specialty</th>
<th>Medical and Lab Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Generic Name</td>
<td>Non-Invasive Continuous CVP &amp; Continuous Jugular Venous Oximeter Monitoring System with 22” screen</td>
</tr>
<tr>
<td></td>
<td>Clinical purpose</td>
<td>Emergency</td>
</tr>
<tr>
<td></td>
<td>Quantity</td>
<td>01</td>
</tr>
</tbody>
</table>

**Technical specification:** Mespere non-invasive sensors shine near infrared photons into the tissue containing jugular venous blood vessels and analyze the diffusely reflected photons to determine central venous pressure.
Appropriate measures should be taken to get the CVP back into the normal range for CVP is between 4-12 cmH₂O and 3-8 mmHg. A CVP reading outside of this range should be monitored. Real time data display High-resolution color LCD screen, size 22” or more. Mains power 100-240, 50 Hz Built in rechargeable battery Disposable sensors 20 sets.

**Accessories:** Complete with standard accessories. Operating manual, Services manual, error code book, part list and software if any.

**Optional:** Nil

**Warranty:** Two year with all spare parts, during warranty period firm should maintain equipments and done PPM as per principle recommendation. If any spare part required during installation or PPM will be responsibility of the firm. Firm must send annual PPM schedule with installation report.

<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Clinical specialty</th>
<th>Generic Name</th>
<th>临床English</th>
<th>Clinical purpose</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>24</td>
<td>Medical and Lab Equipment</td>
<td>Online Blood pressure Monitor</td>
<td></td>
<td>Used for blood pressure monitoring in different</td>
<td>03</td>
</tr>
</tbody>
</table>

**Technical specification:**
- **Measurement method:** Oscillometric
- **NIBP Measurement range**
  - Systolic: 40-270 mmHg or better
  - Diastolic: 20-200 mmHg or better
  - Pulse: 30-240 bpm or better
- **Display range:** 0.-300 mmHg or better
- **Measurement accuracy**
  - Pressure: ± 3mmHg or better
  - Pulse: ± 5mmHg or better
- **Cuff size:** 125x300 mm or better
- **Thermal printer:** Should allow easy paper roll replacement and avoid possible paper jam.
- **Display type:** LED Digital
- Should have mobile card, adjustable height stool and foot switch. Should have clock function for date & time.
- Should have convenient for heart patients, pregnant women’s, patient with back problem & patient in wheel chair.
- Should have safety feature fast stop button, one button operation for stop / start etc.
- **Country of origin:** US, Europe, Japan or Equivalent
- Standards should have CE or other international standard approved.

**Accessories:** Complete with standard accessories. Operating manual, Services manual, error code book, part list and software if any.

**Optional:** Nil

**Warranty:** Two year with all spare parts, during warranty period firm should maintain equipments and done PPM as per principle recommendation. If any spare part required during installation or PPM will be responsibility of the firm. Firm must send annual PPM schedule with installation report.

<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Clinical specialty</th>
<th>Generic Name</th>
<th>临床English</th>
<th>Clinical purpose</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>Medical and Lab Equipment</td>
<td>12 Channel ECG Machine with 18 leads software</td>
<td></td>
<td>Electrocardiography (ECG) is the process of recording the electrical activity of the heart over a period of time using electrodes placed on a patient's body. These electrodes detect the tiny electrical changes on the skin that arise from the heart muscle depolarizing during each heartbeat.</td>
<td>01</td>
</tr>
</tbody>
</table>

**Technical specification:**
- Twelve Channel ECG on at least 5 inches LCD display
- Automatic Operation
- Variable gain: 1/2, 1, 2 cm/mV
- Thermal recorder for printing out Twelve channels simultaneously.
- Interpretation software.
- Recording Trace speed: 10, 25 and 50 mm/sec,
- Muscle artifact and AC (50Hz) interference filters
- Defibrillator protection
- Built-in AC operation & battery backup minimum 30mins
- Paper size: A4/210mm
- Built-in AC interference, noise filter and baseline drift control.
Capability to interface with LAN/WLAN for data transfer

Paper Roll 50.

**Accessories:** Complete with standard accessories. Operating manual, Services manual, error code book, part list and software if any.

**Optional:** Nil

**Warranty:** Two year with all spare parts, during warranty period firm should maintain equipments and done PPM as per principle recommendation. If any spare part required during installation or PPM will be responsibility of the firm. Firm must send annual PPM schedule with installation report.

<table>
<thead>
<tr>
<th>Sr. No 26</th>
<th>Clinical Specialty</th>
<th>Medical and Lab Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Generic Name</strong></td>
<td>Defibrillator (Pacing)</td>
<td></td>
</tr>
<tr>
<td><strong>Clinical purpose</strong></td>
<td>Defibrillation is a common treatment for life-threatening cardiac arrhythmia and ventricular fibrillation. Defibrillation consists of delivering a therapeutic dose of electrical current to the heart with a device called a defibrillator.</td>
<td></td>
</tr>
<tr>
<td><strong>Quantity</strong></td>
<td>06</td>
<td></td>
</tr>
</tbody>
</table>

**Technical specification:**

- Biphasic transthoracic (external) defibrillator with LCD colour display
- Synchronized output with ECG.
- Energy selection & delivery on control panel and paddles for external defibrillation.
- Energy selection and delivery on control panel for internal defibrillation.
- Charging Indicator
  - The energy range should be adjustable for peads and adults up to 200 Joules.
  - Charging Time for full energy should be less than 05 sec
- Screen Size of approx. 5 inch colored.
- Display of HR, ECG through paddles and Lead I.II & III patient cable.
- Built in recorder for printing of full summery on standard 50mm paper.
- Alarms for High and low Heart rate, low battery warning.
- Built-in Rechargeable battery with charger for minimum 50 shocks at max energy.
- Auto tester/self check.
- External Paddles (Adult, Paeds, Neonate)
- AED facility with cable.
- Pacing facility
  - AC 220V / 50Hz operated

**Accessories:** Complete with standard accessories, including reusable type Adult, Pediatric & Neonatal sensors
- Original trolley/cart
- Operating manual, Services manual, error code book, part list and software if any.

**Optional:**
- Qty of Reusable sensors. Internal Paddle (Adult, Paeds, Neonate). Charging Time for full energy should be less than 07 sec
- ETCo2
- Spo2
- Disposable pacing pads

**Warranty:** Two year with all spare parts, during warranty period firm should maintain equipments and done PPM as per principle recommendation. If any spare part required during installation or PPM will be responsibility of the firm. Firm must send annual PPM schedule with installation report.

<table>
<thead>
<tr>
<th>Sr. No 27</th>
<th>Clinical Specialty</th>
<th>Medical and Lab Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Generic Name</strong></td>
<td>Intra Aortic Balloon Pump (IABP)</td>
<td></td>
</tr>
<tr>
<td><strong>Clinical purpose</strong></td>
<td>The Intra-aortic balloon pump (IABP) is a mechanical device that increases myocardial oxygen perfusion while at the same time increasing cardiac output. Increasing cardiac output increases Coronary blood flow and therefore myocardial oxygen delivery.</td>
<td></td>
</tr>
<tr>
<td><strong>Quantity</strong></td>
<td>04</td>
<td></td>
</tr>
</tbody>
</table>

**Technical specification:** Self contained Fiber optic based intra aortic balloon pump having mobile console with ECG. Amplifier with possible selection 5 leads arterial blood pressure amplifier. Discriminative Triggering circuit to command balloon actions on patient’s ECG arterial blood pressure curve or internal simulator 80 BPM. Color graphic displays at least of 10” for display of arterial and pressure heart rate balloon volume used and alarm conditions with trouble shooting procedures. Wave form displays for ECG, arterial pressure and balloon pressure on three channel memory type oscilloscope. Fall safe system. V Pacing switch. Progressive viewing sequence. Integrated battery power supply to take patient to catheterization labs, operating theatre or other hospital: 60 minute autonomy. CO2 / helium tank wrench. 5 lead ECG cable, male connector pressure, transducer, adopter, chart recorder,220 V, 50 Hz, Ac. System should be complete to display all the parameters.
### Sr. No 28

<table>
<thead>
<tr>
<th>Clinical Specialty</th>
<th>Medical and lab Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generic Name</td>
<td>Pneumatic Sternum saw</td>
</tr>
<tr>
<td><strong>Quantity</strong></td>
<td>02</td>
</tr>
<tr>
<td><strong>Clinical purpose</strong></td>
<td>A sternal saw is a bone cutter used to perform median sternotomy, opening the patient's chest by splitting the breastbone, or sternum.</td>
</tr>
</tbody>
</table>

**Technical specification:**
Electrically (220v) Operated motor controlled unit. Light weight and handy. Keyless saw blade coupling May have even weight distribution for ideal balance Water proof Foot control paddle, connecting cable for hand piece The Saw cable and hand piece must be easily sterilizable by autoclaving and plasma sterilization. Sterilization Basket 50 x Sternum Saw Blades

**Accessories:** standard Accessories

**Optional:** nil

**Warranty:** Two year with all spare parts, during warranty period firm should maintain equipments and done PPM as per principle recommendation. If any spare part required during installation or PPM will be responsibility of the firm. Principle recommended software’s (hard copy) will be handed over to end user. (during and after warranty)

**Note:** Approved PVMS specification, If any firm have any query about specification, must visit at biomedical department in office timing (8am to 2pm) before one week of opening date of tender. Firm should quote their latest model. Firm should provide specification comparative along with technical bid with references of Data sheet or other authentic documents. Demonstration is essential.

### Sr. No 29

<table>
<thead>
<tr>
<th>Clinical Specialty</th>
<th>Medical and lab Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generic Name</td>
<td>Head Light with stand</td>
</tr>
<tr>
<td><strong>Quantity</strong></td>
<td>02</td>
</tr>
<tr>
<td><strong>Clinical purpose</strong></td>
<td>Operating theatre light for emergency and elective surgery.</td>
</tr>
</tbody>
</table>

**Technical specification:**
LED/Xenon Head Light Sources (end-user to specify) Head band carrying Battery with fiber connection to the light with rechargeable battery and charger32

**Accessories:** Operating manual, Services manual, error code book, part list and software if any

**Optional:**

**Warranty:** Two year with all spare parts, during warranty period firm should maintain equipments and done PPM as per principle recommendation. If any spare part required during installation or PPM will be responsibility of the firm. Principle recommended software’s (hard copy) will be handed over to end user. (during and after warranty)

**Note:** Approved PVMS specification, If any firm have any query about specification, must visit at biomedical department in office timing (8am to 2pm) before one week of opening date of tender. Firm should quote their latest model. Firm should provide specification comparative along with technical bid with references of Data sheet or other authentic documents. Demonstration is essential.

### Sr. No 30

<table>
<thead>
<tr>
<th>Clinical Specialty</th>
<th>Medical and lab Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generic Name</td>
<td>EVH System</td>
</tr>
<tr>
<td><strong>Quantity</strong></td>
<td>01</td>
</tr>
<tr>
<td><strong>Clinical purpose</strong></td>
<td>Endoscopic vessel harvesting (EVH) is a surgical technique that may be used in conjunction with coronary artery bypass surgery (commonly called a &quot;bypass&quot;). For patients with coronary artery disease, a physician may recommend a bypass to reroute blood around blocked arteries to restore and improve blood flow and oxygen to the heart. To create the bypass graft, a surgeon will remove or &quot;harvest&quot; healthy blood vessels from another part of the body, often from the patient’s leg or arm with small incision.</td>
</tr>
</tbody>
</table>

**Technical specification:** Full HD Camera Control Unit CMOS Type Compatible for Cardiac Harvesting
Latest and advanced kit.

a) Full HD Camera system with Latest Chip or Sensor
b) Technology for brilliant image display CMOS
c) Full HD image quality (1920 x 1080 pixel provides a crystal clear image)
d) Modes 5 Pre settings & 3 User settings
e) Scan Mode: Progressive Scan 50/60Hz
f) Video Signal Outputs 2 x DVI - D 1080p (50/60Hz)

**Camera Head with Zoom coupler.**

a) Camera Resolution: 1920x1080 Pixel
b) Buttons on Camera Head: 4 with 5 FUNCTIONS
c) Optical Zoom 2x
d) Digital zoom 2.5x
e) Length Camera Cable: 4 M minimum

**Harvester Cannula: Should consist with following parts.**

a) Harvesting Cannula
b) Tool Adapter Port
c) C-Ring Slider
d) Harvesting Tool
e) Jaws tool.
f) C-Ring
g) Harvesting Tool Extension Cable Connector
h) Scope Washer Connector (blue)
i) Distal Insufflation Connector
j) Activation Toggle

**Harvester Endoscope:**

a) 7mm extended length Telescope with Dissection Tip
b) Target focus quality
c) 0 Degree Straight forward.

**Endoscopic Harvester Power Generator:**

a) Extension Cable Connector
b) Power Cord Connector
c) Power Setting Knob
d) LED Power-On Indicator
e) Hanger
f) Harvester Extension cable
g) Harvester Adapter

**Light source :**

a) Xenon 300 watt or more
b) Life span 500 hours on continuous use
c) Light Guide Cable. 1 pcs.
d) Color temperature 6000 Kelvin
e) light intensity should be continuously adjustable

**HIGH FLOW INSUFFLATOR:**

a) Maximum Gas Flow 20 L / min.
b) Pressure Range 5 - 25 mm Hg
c) Fully automatic insufflators
d) High pressure tube 1m.
e) Reusable silicon tube.

**High Definition Medical Monitor with Bright LED Backlight.**

**Accessories:**

Nil

**Optional:**

**Warranty:** Two year with all spare parts, during warranty period firm should maintain equipments and done PPM as per principle recommendation. If any spare part required during installation or PPM will be responsibility of the firm. Principle recommended software’s (hard copy) will be handed over to end user. (during and after warranty)

**Note:** Approved PVMS specification, If any firm have any query about specification, must visit at biomedical department in office timing (8am to 2pm) before one week of opening date of tender. Firm should quote their latest model. Firm should provide specification comparative along with technical bid with references of Data sheet or other authentic documents. Demonstration is essential.

<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Clinical Specialty</th>
<th>Generic Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>31</td>
<td>Medical and lab Equipment</td>
<td>Syringe Pump</td>
</tr>
</tbody>
</table>
**Clinical purpose**
A syringe pump is a small infusion pump used to gradually administer small amounts of fluid (with or without medication) to a patient. Syringe drivers are also useful for delivering IV medications over several minutes. In the case of a medication which should be slowly pushed in over the course of several minutes, this device saves staff time and reduces errors.

**Technical specification:** Syringe pump for fluid administration. Flow Rates: 0.1 - 400 ml/hr. (Approx) Digital display of set parameters. Universal Syringe acceptance capability for disposable, Plastic. Size, 10, 20, 50, 60 ml. Drive Accuracy. ±3%. Display of drug name, Infusion rate, infused volume and volume to be infused. Automatic adaptation of controls according to syringe/infusion set. Quick freed/rapid infusion facility. Rechargeable battery and mains operated 220V, 50Hz. Safety alarm audible and acoustic for occlusion end of infusion, low battery. Battery back up 3 to 4 Hours. Should be compatible with docking station.

**Accessories:** 4x docking station (five on one)

**Optional:**
- Warranty: Two year with all spare parts, during warranty period firm should maintain equipment’s and done PPM as per principle recommendation. If any spare part required during installation or PPM will be responsibility of the firm. Principle recommended software’s (hard copy) will be handed over to end user. (during and after warranty).

**NOTE:** Approved PVMS specification. If any firm have any query about specification, must visit at biomedical department in office timing (8am to 2pm) before one week of opening date of tender. Firm should provide specification comparative along with technical bid with references of Data sheet or other authentic documents. Demonstration is essential.

**Sr. No 32**

<table>
<thead>
<tr>
<th>Clinical Specialty</th>
<th>Medical and lab Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Generic Name</strong></td>
<td>Invasive Cardiac Monitor</td>
</tr>
<tr>
<td><strong>Quantity</strong></td>
<td>02</td>
</tr>
<tr>
<td><strong>Clinical purpose</strong></td>
<td>The intensity of the care provided in ICU requires monitoring device. Patients in the ICU generally have many wires attached to them for various types of monitoring. Usually measure vital signs &amp; other intensive care parameters of the patient.</td>
</tr>
</tbody>
</table>

**Technical specification:** Operating Features and Characteristics: Non fade TFT, LCD color display Electro-surgical interference suppression/protection Defibrillator protection. Freeze and cascade facility. Waveform traces speed; 25 & 50mm/sec. Screen size: min. 15” TFT/LCD color display.

Parameters:
- **ECG:**
  - Numeric: heart rate.
  - Waveform: Six Wave forms minimum, real time and freeze ECG trace.
- **NON-INVASIVE BLOOD PRESSURE (NIBP):**
  - Numeric: systolic, diastolic and mean pressure.
  - Selectable auto inflate interval settings.
  - Rising cuff/continuous pressure display.
- **TEMPERATURE:**
  - Numeric: temperature selectable in °C/°F.
- **PULSE OXIMETRY:**
  - Numeric: 0-100% oxygen saturation measuring range.
  - Waveform-plethysmograph pulse with pulse strength indication.
  - Reusable sensor electrode.
  - Reusable cuff all sizes.
- **ARRHYTHMIA ANALYSIS:**
  - Arrhythmia analysis and analysis.
- **RESPIRATION:**
  - Breathe rate display and settable apnea alarms.
  - Sweep speed; 6.25, 12.5 mm/sec.
- **OTHER FEATURES:**
  - Trend data; graphical and tabular.
  - **ALARMS:**
    - High & low (settable) on all parameters.
    - Visual and audible indication of alarms.
  - IBP Dual Channel.
  - Capnography (EtC02).
  - Printer Three Channel.
Accessories: The system must be complete with all sensors, probes, cables or any other accessories required for measuring all the above selected parameters (one for adults and one for paediatric patients).

Optional: Nil

Warranty: Two year with all spare parts, during warranty period firm should maintain equipment’s and done PPM as per principle recommendation. If any spare part required during installation or PPM will be responsibility of the firm. Principle recommended software’s (hard copy) will be handed over to end user. (during and after warranty)

NOTE: Approved PVMS specification. If any firm have any query about specification, must visit at biomedical department in office timing (8am to 2pm) before one week of opening date of tender. Firm should quote their latest model. Firm should provide specification comparative along with technical bid with references of Data sheet or other authentic documents. Demonstration is essential.

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### Sr. No 33

<table>
<thead>
<tr>
<th>Clinical Specialty</th>
<th>Medical and lab Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generic Name</td>
<td>Neurological Monitor (SSEPs)</td>
</tr>
<tr>
<td>Quantity</td>
<td>04</td>
</tr>
</tbody>
</table>

**Clinical purpose:** A somatosensory evoked potential (SSEP) is an evoked potential caused by a physical stimulus (usually a small electric pulse). Electrodes positioned over particular areas of the body record responses of the SSEP. These are then observed as a reading on an electroencephalogram (EEG). A SSEP can most commonly involve stimulation of the median nerve at the wrist, or the posterior tibial nerve at the ankle. This investigation therefore tests the pathway of the sensory nerves to the sensory areas of the brain, even though the stimuli are non-physiological.

**Technical specification:** As per demonstration or presentation Approval, with standard specification

**Accessories:** standard

**Optional:** nil

**Warranty:** Two year with all spare parts, during warranty period firm should maintain equipment’s and done PPM as per principle recommendation. If any spare part required during installation or PPM will be responsibility of the firm. Principle recommended software’s (hard copy) will be handed over to end user. (during and after warranty)

**NOTE:** General specification, If any firm have any query about specification, must visit at biomedical department in office timing (8am to 2pm) before one week of opening date of tender. Firm should quote their latest model. Firm should provide specification comparative along with technical bid with references of Data sheet or other authentic documents. Demonstration is essential.

### Sr. No 34

<table>
<thead>
<tr>
<th>Clinical Specialty</th>
<th>Medical and lab Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generic Name</td>
<td>Anesthesia work station</td>
</tr>
<tr>
<td>Quantity</td>
<td>01</td>
</tr>
</tbody>
</table>

**Clinical purpose:** The anesthesia workstation is used by anesthesiologists and nurse anesthetists to support the administration of anesthesia. The most common type of anesthetic machine is the continuous-flow anesthetic machine, which is designed to provide an accurate and continuous supply of medical gases (such as oxygen and nitrous oxide), mixed with an accurate concentration of anesthetic vapor (such as isoflurane), and deliver this to the patient at a safe pressure and flow. Anesthesia work station incorporate a ventilator, suction unit, and patient monitoring devices.

**Technical Specification:**

Anesthesia work station machine to administer anesthetic agents in precise control and flow manner.

- The machine will equip to monitor the vital sign parameters and anesthetic agents during operation.
- It should stay on the theatre (I.O to specify the hanging pendant or for mobile use) housing
- 3-gases O2/N2O/AIR
- Provision of communication port for sharing and transfer of data.
- Unit shall comprise of the following components:
  - Electronically control, mixing and monitoring of anesthetic gases (O2, AIR, and N2O) both by digits as well as virtual tubes.
  - Built-in illumination system.
  - Non-interchangeable pipeline inlets
  - Pipeline & cylinder gauges for O2, N2O and AIR
  - Central gas/ electronically driven unit.
  - Pin index cylinder yokes for Oxygen & N2O (One each), as backup.
  - Pin index type cylinders will be provided with the unit (2xO2 and 2xN2O: BS standard)
Gas outlet and O2 flush control
1 auxiliary O2 outlet (preferably electronics).
Two Lockable castors
Stainless steel/fiber work surface
Absorber bag support arm
Integrated heated breathing system.
Three gas electronic digital flow meters for precise control and monitoring of gases.
Drawer unit 5-6” high.
CO2 absorber 800 – 1,500 gm or better with changeable during the surgery.
Complete with valve for bag/ventilator, manometer, 0.5, 1.0, 1.5, 2 & 3 L breathing bags,
Additional breathing hose and connector (adult and paed).
Scavenging system passive / active type.
Suction system.

ANESTHESIA VENTILATOR:
Anesthesia Ventilator with minimum 12” or more LCD / TFT Screen.
The ventilator shall be capable of ventilating Neonates / pediatric patients/Adult Patients) The ventilator shall have following features as a minimum requirement:
Volume Preset Time Cycled Ventilator (IPPV Mode)
Manual, spontaneous; Volume Mode (IPPV) / CMV
Pressure Mode (PCV)
Pressure Support (PS)
Pressure Control (PC)
Pressure Controlled and pressure support Modes
Synchronized volume controlled ventilation (SIMV) with PS
PS with apnea back up
Breathing Mode Selection (Standby / Volume / Spontaneous and Pressure)
Built in Oxygen Monitor
Inverse I:E ratio Capability
Gas Specific Input Connectors (Air or Oxygen ISO or ANSI Standards)
Tidal Volume from 5ml to 1400ml.
Rate or Frequency 4 to 60 bpm
PEEP 3 to 20 cm of H2O.
Inspiratory Pressure Limit
Pressure and Volume (Spirometry) Loops / Curve.
Oxygen / Electronically Driven
Power Supply 220 VAC , 50 Hz
Battery Backup (60 Minutes or more)
Low / High FiO2 Alarm
Incorrect Rate or Ratio alarm
Mains Failure alarm
Low battery alarm.
Oxygen Senor: Paramagnetic / Galvanic /Equivalent
Hypoxic Device.
The ventilator shall be supplied with complete drive hose and power cable. Note: Annual maintenance kits (needs to replace annually) will be included in the warranty period as per manufacturer’s guidelines.

MONITORING:
Modular Vital sign monitor.
Size of minimum 17” touch screen or more for display of vital sign parameters of neonates, infants and adults.
Measurement of ECG NIBP with re-usable single hose cuff for neonates, child and small adults
SpO2 (Massimo Technology / Equivalent motion tolerant technology) with re-usable cable and sensors for neonates, infant, adult and small adults sizes (1x each)
Temperature with nasal probe.
Respiration Four Channel IBP Anesthetic Agent monitoring (with monitor or with in the anesthesia machine) EtCO2 main / side stream (Complete with all sensors probes, reusable). Provision of communication port for sharing and transfer of data. 220V, 50 Hz operated.
Battery backup of at least 60 minutes.

Note: Monitors must be supplied by the same manufacturer and must be compatible with the machine and
ventilator.  The warranty of equipment will be including batteries, oxygen sensor, all kinds of filters and flow sensor.

**Accessories:**  
- 2 NIBP Cuff each, 2 Spo2 probe, 2 temperature probe, Skin Probe, 2 ECG Leads, Four Channel IBP leads. Two pre calibrated Vaporizers of Isoflurane & Sevoflurane vaporizer (1 + 1), temperature and flow compensated. Operating manual, Services manual, error code book, part list and software if any.

**Optional:** NIRS (Near Infra-Red Spectroscopy unit for Cerebral Pulse Oximetry for pediatric patients), Complete with main unit with monitor and sensors including disposable head sensor/probe (Qty 50 Nos.), NMT Neuro muscular transmission, BIS Monitoring, Cardiac bypass mode / HLM / Spontaneous Mode, Cardiac Output module/monitor Two pre calibrated Vaporizers of Isoflurane & Sevoflurane vaporizer, temperature and flow compensated. 

**NOTE:** Approved PVMS specification, If any firm have any query about specification, must visit at biomedical department in office timing (8am to 2pm) before one week of opening date of tender. Firm should quote their latest model. Firm should provide specification comparative along with technical bid with references of Data sheet or other authentic documents. Demonstration is essential.

**Warranty:** Two year with all spare parts, during warranty period firm should maintain equipments and done PPM as per principle recommendation. If any spare part required during installation or PPM will be responsibility of the firm. Principle recommended software’s (hard copy) will be handed over to end user. (during and after warranty)

**Sr. No 35**

<table>
<thead>
<tr>
<th>Clinical Specialty</th>
<th>Medical and lab Equipment</th>
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</thead>
<tbody>
<tr>
<td>Generic Name</td>
<td>Microplegia System</td>
</tr>
<tr>
<td>Quantity</td>
<td>01</td>
</tr>
<tr>
<td>Clinical purpose</td>
<td>Used for training purpose of Anesthesia department</td>
</tr>
</tbody>
</table>

**Technical specification:**

**Technical specification (Microplegia Delivery System Machine)**

Microplegia Delivery System Shall be optimal for (Myocardial Protection for Cardiac Surgery Procedure)

**General Feature**

System shall feature an intelligent operating modes which consists of:
- Pressure Must be Auto-regulated
- Temperature Required Warm, Cold, Tepid
- Arrest Faction Must Be Control OR set by Systems (As Required)
- Flow control Required / Continuous Precise, and Cyclic Delivery of Microplegia.
- System Delivery Route / Antegrade, retrograde and simulgrade.
- Composition Required / Oxygenated Blood, natural buffers.

**Technical Specification for System**

- Flow rate: 10 – 999ml / min.
- Accuracy: 1ml / min for 10-100 ml / min.
- Resolution: 5 ml / min for 100-999 ml / min.
- Air Bubble detection: 100 mul cohesive bubble.
- Prime Volume: 190 ml & 45 ml heat exchanger.
- Arrest & additive capacity: 50 ml.
- Temperature Range: Cold: Ice water controlled.
- Temperature Range: Warm: 4-42 Degree Centigrade.
- Temperature Accuracy: ± 1 Degree Centigrade.
- Blood to Crystalloid Ratio Control: 100% Crystalloid / 100% Blood.
- Ratio Accuracy: 3% of each component required proportion.
- Arrest agent concentration rang: 0 – 40 mEq/L.
- Additive concentration rang: 0 – 50 ml/L.
- System shall be portable (Easily Moveable).
- System shall be fit on HLM (Heart Lungs Machine) if required.
- Rated voltage (mains operation) 220 – 240 VAC, 60 – 50 HZ.

**Manufacturer Requirement**

Manufacturer should have ISO Certification for Quality Standards.
- FDA / CE Approval.
- Country of Origin / USA, Europe.

**Accessories:**

**Optional:**

**Warranty:** Two year with all spare parts, during warranty period firm should maintain equipments and done PPM as per principle recommendation. If any spare part required during installation or PPM will be responsibility of the
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<th>Generic Name</th>
<th>Quantity</th>
<th>Clinical Purpose</th>
<th>Technical specification:</th>
<th>Accessories:</th>
<th>Optional:</th>
<th>Warranty:</th>
</tr>
</thead>
<tbody>
<tr>
<td>36</td>
<td>Medical and lab Equipment</td>
<td>PICCO Module Compatible with Nihan Khoden Cardiac Monitor</td>
<td>04</td>
<td>Used to measure advance hemodynamic cardiac monitoring</td>
<td>Compactable with Nihan Khoden Cardiac Monitor</td>
<td>slandered accessories</td>
<td>nil</td>
<td>Two year with all spare parts, during warranty period firm should maintain equipments and done PPM as per principle recommendation. If any spare part required during installation or PPM will be responsibility of the firm. Principle recommended software’s (hard copy) will be handed over to end user. (during and after warranty)</td>
</tr>
<tr>
<td>37</td>
<td>Medical and lab Equipment</td>
<td>Cerebral Oximeter</td>
<td>02</td>
<td>Noninvasive, infrared monitoring of cerebral and myocardial oxygen sufficiency and circulatory parameters.</td>
<td>Near Infra-Red Spectroscopy (NIRS) based Cerebral/Regional oximetry monitor. • Bilateral cerebral tissue oxygen saturation monitoring. • Numeric display of bilateral cerebral tissue oxygen saturation with alarm limits. • Color coded trend graph display of bilateral cerebral tissue oxygen saturation with alarm limits. • Real time data display • High-resolution color LCD screen, size 8” or more. • Ethernet LAN connectivity. • Mains power 100-240, 50 HZ • Built in rechargeable battery to provide &gt;2 hours backup time. • Cerebral oximetry disposable sensors 20 sets.</td>
<td>Operating manual, Services manual, error code book, part list and software if any.</td>
<td>nil</td>
<td>Two year with all spare parts, during warranty period firm should maintain equipments and done PPM as per principle recommendation. If any spare part required during installation or PPM will be responsibility of the firm. Principle recommended software’s (hard copy) will be handed over to end user. (during and after warranty)</td>
</tr>
<tr>
<td>38</td>
<td>Medical and lab Equipment</td>
<td>Peripheral nerve stimulator</td>
<td>02</td>
<td>A peripheral nerve stimulator, also known as a train-of-four monitor, is used to assess neuromuscular transmission when neuromuscular blocking agents (NMBAs) are given to block musculoskeletal activity. By assessing the depth of neuromuscular blockade, peripheral nerve stimulation can ensure proper medication dosing and thus decrease the incidence of side effects. Peripheral nerve stimulation is most commonly used for ongoing monitoring in the intensive care unit (ICU).</td>
<td>Peripheral Nerve stimulator with following features. Combined Nerve Mapping and Nerve Location: Nerve Mapping Probe: Charge Transfer Waveform:</td>
<td></td>
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</tr>
</tbody>
</table>
Proximity Indicator:
Non-Linear Current Adjustment:

**Current range:**
- Nerve Locating: 0.0 - 5.0mA
- Nerve Mapping: 0 - 20mA
- NMBA Monitoring: 0 - 80mA

**Load impedance:**
- Nerve Locating: 0 - 20kΩ (100V)
- Nerve Mapping: 0 - 20kΩ (400V)
- NMBA Monitoring: 0 - 5kΩ (400V)

**Stimulating modes:**
- Train-of-Four (TOF)
- Double Burst (DB)
- Post-Tetanic-Count (PTC)
- Tetanus (TET)
- Twitch (1Hz, 2Hz, 5Hz)

As per demonstration / presentation approval.

**Accessories:** standard accessories

**Optional:** NIL

**Warranty:** Two year with all spare parts, during warranty period firm should maintain equipment’s and done PPM as per principle recommendation. If any spare part required during installation or PPM will be responsibility of the firm. Principle recommended software’s (hard copy) will be handed over to end user. (during and after warranty)

**NOTE:** Approved PVMS specification, If any firm have any query about specification, must visit at biomedical department in office timing (8am to 2pm) before one week of opening date of tender. Firm should quote their latest model. Firm should provide specification comparative along with technical bid with references of Data sheet or other authentic documents. Demonstration is essential.

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### Sr. No 39

**Clinical Specialty**  
Medical and lab Equipment

**Generic Name**  
Video Laryngoscopes

**Quantity**  
01

**Clinical purpose**

**Technical specification:** Completely portable
- Durable, reusable video display with reusable / disposable blades.
- High quality image of the vocal cords while minimizing soft tissue manipulation.

**Display Features:**
- Batteries: 3 AAA (Alkaline recommended)
- Battery Life: > 90 min. (Battery status indicator flashes red when batteries need to be changed.)
- Computerized Power Management System: auto shut off, auto white balancing
- Video Aspect Ratio: 4:3
- Video Port: RCA connection to monitor with cable
- Video Refresh Rate: 30 frames per second
- Video Resolution: 320 x 240 (QVGA)
- Video Screen: OLED Display
- Video Screen Size: 6.1cm / 2.4 inch diagonal

**Accessories:** The kit includes 1 Vision display, case, AAA batteries, 3 channeled blades and 1 standard blade.

**Optional:** Trolley (Imported /local)

**Warranty:** Two year with all spare parts, during warranty period firm should maintain equipment’s and done PPM as per principle recommendation. If any spare part required during installation or PPM will be responsibility of the firm. Principle recommended software’s (hard copy) will be handed over to end user. (during and after warranty)

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### Sr. No 40

**Clinical Specialty**  
Medical and lab Equipment

**Generic Name**  
ICE Maker

**Quantity**  
01

**Clinical purpose**

- Used for making ice for cooling of different items during surgery

**Technical specification:**
Produces 9 bullet-shape ice cubes every 6 to 12 minutes
For up to 26 lbs. in 24 hours.
Stores up to 1.1 lbs of ice at a time
Water recycling system, Collects melted water and filters it to be reused, eliminating the need for a drain.
Holds up to 0.5 gallon of water to help minimize the need for refilling.
Minimum 2 selectable ice cube sizes
Ice scoop for easy ice removal.
As per demonstration / presentation

**Accessories:** standard accessories.

**Optional:** Nil

**Warranty:** Two year with all spare parts, during warranty period firm should maintain equipment’s and done PPM as per principle recommendation. If any spare part required during installation or PPM will be responsibility of the firm. Principle recommended software’s (hard copy) will be handed over to end user. (during and after warranty)

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<th>Clinical Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>41</td>
<td>Medical and lab Equipment</td>
<td>Hypothermia Machine (Dual Chamber)</td>
<td>04</td>
<td>Hypo Hyper Thermia unit is used for temperature control (Hot &amp; Cold) of patient during cardiac surgery.</td>
</tr>
</tbody>
</table>

**Technical specification:**
The Hyper hypothermia unit designed to supply temperature controlled water to oxygenator heat exchangers and cooling blankets. The feed water temperature selected on a temperature controller in the range 5-40 °C One/ Two external circuits can be connected each with its own flow control The flow is maintained by a built in pump The temperature control is obtained by a three way motor valve Selecting water from a cooling or a heating vessel as required. In the cooling vessel a temperature of +2 °C is constantly maintained by a refrigeration system Heating vessel contains an electrical heater which is automatically switched, as and when required. Hermetical sealed compressor ½ HP. Temperature accuracy: +/-0.5 deg/ C. Initial cooling capacity 2100 kj/h (500 Kcal/h) Continuous cooling cap 2800 kj/h (670 Kcal/h) Circulating system: Pump Flow capacity (Total) 10-16 liters/min

**Accessories:** System should be complete with all standard accessories

**Optional:** Blankets

**Warranty:** Two year with all spare parts, during warranty period firm should maintain equipment’s and done PPM as per principle recommendation. If any spare part required during installation or PPM will be responsibility of the firm. Principle recommended software’s (hard copy) will be handed over to end user. (during and after warranty)

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</tr>
</thead>
<tbody>
<tr>
<td>42</td>
<td>Medical and lab Equipment</td>
<td>Cell Saver</td>
<td>01</td>
<td>Commonly known as a &quot;cell saver&quot;, the intraoperative cell salvage machine suction, washes, and filters blood so it can be given back to the patient's body instead of being thrown away. One advantage to this is the patient receives his/her own blood instead of donor blood, so there is no risk of contracting outside diseases</td>
</tr>
</tbody>
</table>

**Technical specification:**
The equipment should be complete system equipped with all workable Necessary Accessories. Must have HTC Sensor Auto start Function Washing Program 2-3. Heparin Removal 95% or more. Free Hb 83% or more. Potassium removal 95% or more. Albumin removal 92%-95%. Fat elimination

**Accessories:** Complete with all standard accessories

**Optional:** Nil

**Warranty:** Two year with all spare parts, during warranty period firm should maintain equipment’s and done PPM as per principle recommendation. If any spare part required during installation or PPM will be responsibility of the firm. Principle recommended software’s (hard copy) will be handed over to end user. (during and after warranty)

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<th>Quantity</th>
<th>Clinical purpose</th>
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<tbody>
<tr>
<td>43</td>
<td>Clinical Specialty</td>
<td>Medical and lab Equipment</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Generic Name</td>
<td>Dialysis Machine with Portable RO</td>
<td>02</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td><strong>Clinical purpose</strong></td>
<td></td>
<td><strong>Hemodialysis, also spelled hemodialysis, commonly called kidney dialysis or simply dialysis, is a process of purifying the blood of a person whose kidneys are not working normally. This type of dialysis achieves the extracorporeal removal of waste products such as creatinine and urea and free water from the blood when the kidneys are in a state of renal failure</strong></td>
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<tr>
<td></td>
<td></td>
<td><strong>Technical specification:</strong></td>
<td></td>
<td><strong>Various Dialysis Therapies including double needle system &amp; Single Needle with Single Pump. Dialysis machine system should be open consumable types Variable Bicarbonate &amp; Acetate Concentration. And no binding on consumable or disposable Bicarbonate profiling with monitoring Variable temperature control Water Inlet pressure requirement: 1.5 to 6 Bar maximum Heparin Pump Automatic stop &amp; Bolus with flow rate from 0.1-9.9ml/hour Programmable Ultra filtration with control or varying rate Ultra-filtration with or without diffusion Automatic priming with display Dialysis machine with touch digital display size 10.4-inches or more Touch Display 10.4-inches or more for service diagnostic and calibration Touch Electronic control of flow rate and blood flows Automatic clean, disinfect and rinsing mechanism, built in heat disinfect system Should capable to record disinfection history Should capable to record patient data without/with patient Card Blood Pump: 0, 50 to 500 ml / minute Variable Dialysate Flow: from 300 to 700 ml or better Temperature Control: up to 39 deg. C. (Adjustable) Arterial Pressure Monitor, Venous Pressure Monitor Ultra-filtration Rate Control: Range of UFR 0.0 to 3.00 Kg / h - hour or above. Air Bubble Detection: Air bubble detector alarm threshold. Blood leak Detection, Sodium profiling Bicarbonate profiling / Proportion /Dialysate Profiling Dialysis Adequacy Monitoring (Kt/v) with graphical Display, Built in Heat disinfect system Universal Bicarbonate Cartridge Holder / Bag Online B.P Monitoring System Battery backup for at least 20-min, 220V, 50Hz</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Accessories:</strong> portable WRO system (local/Imported)Operating manual, Services manual, error code book, part list and software if any.**</td>
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<td></td>
<td></td>
<td><strong>Optional:</strong> Blood pressure monitor.**</td>
<td></td>
<td></td>
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<tr>
<td></td>
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<td><strong>Warranty:</strong> Two year with all spare parts, during warranty period firm should maintain equipments and done PPM as per principle recommendation. If any spare part required during installation or PPM will be responsibility of the firm. Principle recommended software’s (hard copy) will be handed over to end user. (During and after warranty).**</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>44</td>
<td>Clinical Specialty</td>
<td>Medical and lab Equipment</td>
<td>01</td>
<td><strong>System provides in a matter of minutes measurements for many important tests that can speed up the diagnosis, treatment and transfer of patients. Always ready for use, whether in the practice laboratory, intensive care unit or emergency room.</strong></td>
</tr>
<tr>
<td></td>
<td>Generic Name</td>
<td>Handy blood gas analyzer (point of care testing)</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td><strong>Technical specification:</strong></td>
<td></td>
<td><strong>Can be used to obtain test data in a very short period of time. Blood gases, electrolytes, blood chemistry, hemostasis and cardiac markers. Results produced within 2 minutes with a sample volume of approx. 17 μl – 95 μl. Laboratory accuracy at the point-of-care. Whole blood analysis. Integrated barcode scanner. Cartridge types available to suit every requirement. Data exchange using LIS/HIS.</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Accessories:</strong> standard accessories**</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td><strong>Optional:</strong> nil**</td>
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|        |                    | **Warranty:** Two year with all spare parts, during warranty period firm should maintain equipment’s and done PPM as per principle recommendation. If any spare part required during installation or PPM will be responsibility of the
**Sr. No 45**

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<thead>
<tr>
<th>Clinical Specialty</th>
<th>Medical and lab Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Generic Name</strong></td>
<td>Human patient simulator for Anesthesia and critical care</td>
</tr>
<tr>
<td><strong>Quantity</strong></td>
<td>01</td>
</tr>
<tr>
<td><strong>Clinical purpose</strong></td>
<td>For Training purpose of Anesthesia Department</td>
</tr>
</tbody>
</table>

**Technical specification:** It should have following feature.

Human Patient Simulator for Training & Education of undergraduates, Post graduate students & Health professionals in routine and special clinical situations.

- It should offer sophisticated mathematical models of human physiology and pharmacology and capable of determining automatically the patient’s response to user actions and interventions.
- Anesthesia and Ventilator simulator should be capable to provide of anesthesia certification.
- Human Patient Simulation system should comprise the following

**MANNEQUIN:**

- Adult Mannequin should represent the physical characteristic of an adult male / female patient with interchangeable genitalia
- It should be fully operational in supine, sitting, lateral & prone position and can be placed on O. T. Table, ICU Beds on ground & in a Ambulance.
- It should react to intravenous drugs, CPR, defibrillation, intubations ventilation, catheterizations & other procedures.
- Should physically demonstrate of various clinical signs (i.e. heart / breath sounds, palpable pulses, chest excursion, airway patency etc.) which should be dynamically coupled with the mathematical models of human physiology and pharmacology.

**COMPUTERIZED SYSTEM CONTROLLER**

- Simulation system should be supplied complete with PC console and a hand held Laptop for instructor to control all aspects of simulator from Bedside of the Patient

**UTILITY SOFTWARE**

Simulation system should be supplied complete with software for:

- Modification of preconfigured scenarios & patient profiles or creating new scenarios & profiles
- Recording of patient’s physiology and intervention by student, instructor or central software
- modification of pharmacokinetics & pharmacodynamics parameters of selected drugs

**HUMAN PATIENT SIMULATOR SHOULD HAVE FOLLOWING FEATURES:** -

**AIRWAY SYSTEM**

- Mannequins should provide automatically realistic oropharynx, naso-pharynx and larynx representing adult patient.
- Should allow direct laryngoscope, oral and nasal tracheal intubation.
- Should support mainstream endobronchial intubation, esophageal intubation.
- Should allow for activation of laryngospasm activator & airway occluder to create "cannot ventilate, cannot intubate” crisis scenario.
- Should allow instructor to activate tongue swelling of varying degrees.
- Should support the use of Combitubes, lighted stylets and fiber optic intubation tubes.

**PULMONARY SYSTEM:** -

- The patient should breathe spontaneously with a self-regulated rate and tidal volume sufficient to maintain a target arterial carbon dioxide which can be adjusted by the instructor.
- Should be capable of simulating events such as atelectasis, pneumothorax, asthma, COPD etc.
- The mannequin’s lungs should physically consume O2, produce Co2 and uptake or excrete N20, sevfluorane, isoflurane, enflurane, and halothane
- Independent control of left & right lung to model airway resistance, lung compliance, as well as control of chest wall compliance.
- The lungs should be realistically modeled with respect to the range of tidal volumes & functional residual capacity.
• Should have facility to superimpose modes of ventilation (spontaneous, assisted & mechanical) one on another and respiratory system should be capable of triggering a ventilator.
• Ventilation should result in appropriate production of expired CO2 which registers correctly on external capnography.
• Should give appropriate & dose dependent pulmonary response to intravenously injected drugs.
• Should have facility to continuously Calculate patients arterial blood gas & PH

CARDIOVASCULAR SYSTEM:
• Should simulate heart sound synchronized to QRS complex of ECG, generate 5 lead ECG from appropriate positions on the patient’s chest and should be able to simulate associated abnormalities such as myocardial ischemia, sinus tachycardia & bradycardia, ventricular fibrillation & asystole.
• Should have palpable carotid, radial, brachial, femoral pedal pulses synchronous to ECG.
• Should have independent control of left & right radial, brachial, femoral & pedal pulses.
• Should simulate hypovolemia & hypervolemia and right and / or left heart failure.
• Should be able to simulate patients’ blood pressure that can be measured with cuff of NIBP Monitor, and provide monitoring of hemodynamic parameters.

METABOLIC SYSTEM
• Should physiologically model Actual blood gases including pH, Pco2, Po2 accurately corresponding to alveolar concentration of CO2 & O2.
• Should allow instructor to adjust ABG pH level to simulate Metabolic Acidosis and alkalosis

GENITO URINARY SYSTEM.
• Mannequin should allow insertion of urinary catheters, & offer instructor controlled or automatic scenario controlled excretion of urine and its flow rate.

NEUROLOGIC SYSTEM:
• Should model cardiovascular & respiratory responses to sympathetic & para sympathetic activities.
• Should have electrode attachment for peripheral nerve stimulator.
• Should automatically detect PNS stimulus pattern and generate appropriate thumb twitch response.

ADVANCED CARDIAC LIFE SUPPORT SYSTEM.
• Should display alveolar & arterial gas concentrations appropriately reflecting efficacy of ventilator technique employed.
• Should display artificial circulation, cardiac O/P, Central & peripheral blood pressure palpable pulses & CO2 return as a result of effective chest compression.
• Should have facility to select & maintain desired cardiac Arrhythmia and central patient’s response to clinical intervention.
• Should have facility to apply conventional & automatic external defibrillators to the patient and should trigger appropriate patient response.
• Should have prevision to apply transcutaneous pacemakers.
• Should support all drug required by ACLS algorithm.

TRAUMA FEATURES:
• Should simulate constriction & dilation of pupils of each eye in response to changing light stimuli.
• Should have provision to perform needle decompression of Tension Pneumothorax, & chest tube placement and management.
• Should have facility to perform sobxyphoid needle pericardiocentesis to resolve acute cardiac tamponade.

PHARMACOLOGY & DRUG RECOGNITION SYSTEM;
• Should have preprogrammed pharmacokinetic and pharmacodynamics parameter for over 50 (fifty) intravenous medication.
• Should incorporate various intravenous access points such as antecubital, right internal jugular and femoral veins in the mannequin.
• Should have facility to administer injection & intravenous infusions from main PC console or instructors hand held remote control.
• Mannequin should appropriately & automatically respond to incorrect medications.
• Should have drug recognition system to identify drug, its concentration & quantity of dosage given.
• Should have facility to modify pharmacodynamics & pharmacokinetic models of existing drugs & to add new drugs.

Anesthesia and Scavenging

• Ability to administers anaesthetic agents and medical gases
• Lungs consume oxygen and produce carbon dioxide
• Uptake and distribution of nitrous oxide and volatile anaesthetics
• Direct gas exchange within the lungs
• True respiratory gas exchange, interfaces with real clinical monitors, responds to oxygen therapy
• Mechanical ventilation fully supported with automatic responses to CPAP, PSV, PEEP, SIMV, assist control modes and weaning protocols
• Simulator should flow trigger or pressure trigger a ventilator to cycle
• Simulator should be configured to fight the ventilator
• Expired carbon dioxide should be automatically based on patient condition and interventions
• Thumb twitch with standard Peripheral Nerve Stimulator should base on neuromuscular agent response
• IV cannulation with flashback in right arm including the brachial, cephalic, basilic, and antecubital veins
• Right deltoid intramuscular injection site available
• Right jugular and left femoral IV lines support infusions
• Drug recognition system with barcode technology, identifies the drug, concentration, and volume, Simulator automatically responds to the medication (correct or incorrect) with no interaction form the instructor
• Pharmacology system ensures patient responses are automatic, dose dependent and follow the appropriate time course response

PATIENT PROFILES & SCENARIOS

• Should have at least 25 pre-configured profiles of patients of various ages, medical history, gender & physiological parameter
• Should have facility to change existing patient profiles and to create new patient profiles.
• It should be possible to capture the current state of patient at any part of simulation session & to use it as new patient.
• Simulator should have at least 50 pre-configured scenarios of events & crises.
• Should have facility to change existing scenarios and to create new scenarios of events & crises.

Patient Profiles & Scenarios

• Should have at least 5 pre-configured profiles of patients of various ages, medical history, gender & physiological parameter
• Should have facility to change existing patient profiles and to create new patient profiles.
• It should be possible to capture the current state of patient at any part of simulation session & to use it as new patient.
• Simulator should have at least 50 pre-configured scenarios of events & crises.
• Should have facility to change existing scenarios and to create new scenarios of events & crises.

12. Adult Simulator must be includes the following preconfigured Scenarios

Anesthesia

• Aortic Cross Clamping
• Anaphylaxis in Awake Patient
• Cannot Intubate, Cannot Ventilate
• Cardiac Tamponade
• Emergence Apnea
• Emergence Hypertension
• Emergence with Laryngospasm
• Emergence with Negative Pressure Pulmonary Edema
• Total Spinal anesthesia
• Local Aesthetic Toxicity During IV Epidural Injection
• Sympathectomy due to Epidural Anesthesia
• Hypoxia due to Bronchospasm During Induction of anesthesia
• Hypoxia due to Atelectasis in the Obese Patient During Laparoscopy
• Malignant Hyperthermia Under General anesthesia
• Tension Pneumothorax
• Peripheral Nerve Block Complications
• anesthesia Machine Failure
• Anaphylaxis Under General anesthesia
• Awareness During Caesarean Section
• Perioperative Anterior Myocardial Infarction

**Obstetric**

• Amniotic Fluid Embolism
• Epidural Analgesia
• Pulmonary Aspiration
• Supine Hypotension Syndrome
• Obstetrics Venous Air Embolism
• Pre-Eclampsia

**Allied Health**

• Angina with Cardiac Arrest
• Asthmatic with Pneumothorax
• Chronic Obstructive Pulmonary Disease (COPD) with Respiratory Failure
• Heart Failure with Pulmonary Edema
• Inferior Myocardial Infarction
• Organophosphate Exposure
• Pneumonia with Septic Shock
• Severe Young Asthmatic
• Splenic Rupture with Pneumothorax
• Stab Wound to the Chest
• Subdural Hematoma
• Anaphylaxis
• Anterior Myocardial Infarction
• Tension Pneumothorax

**Advanced Cardiac Life Support (ACLS)**

• ACLS Acute Coronary Syndrome
• ACLS Acute Stroke
• ACLS Asystole
• ACLS Bradycardia and Heart Blocks
• ACLS Pulseless Electrical Activity
• ACLS Pulseless Ventricular Tachycardia and Ventricular Fibrillation
• ACLS Respiratory Arrest
• ACLS Supraventricular Tachycardia
• ACLS Ventricular Fibrillation AED
• ACLS Ventricular Tachycardia

**Advanced Life Support (ALS)**

• ALS Acute Coronary Syndrome
• ALS Acute Stroke
• ALS Asystole
• ALS Bradycardia and Heart Blocks
• ALS Pulseless Electrical Activity
• ALS Pulseless Ventricular Tachycardia and Ventricular Fibrillation
• ALS Respiratory Arrest
• ALS Supraventricular Tachycardia
• ALS Ventricular Fibrillation
• ALS Ventricular Tachycardia

**Pediatric Human Patient Simulator must include the following unique features:**

• Ability to administer anesthetic agents and medical gases
• Lungs consume oxygen and produce carbon dioxide, direct gas exchange within the lungs
• Uptake and distribution of nitrous oxide and volatile anesthetics
• Mechanical ventilation fully supported with automatic responses to CPAP, PSV, PEEP, SIMV, assist control modes and weaning protocols
Simulator can flow trigger or pressure trigger a ventilator to cycle
Expired carbon dioxide automatically based on patient condition and interventions
IV insertion supported in the right arm including cephalic, basilic, and antibrachial veins
IO site access on anterior tibia of right leg
Right jugular IV line supports infusions
Bilateral chest tube insertion with fluid output
Bilateral needle decompression
Ability to bookmark key simulation moments in timeline
Pharmacology system ensures patient responses are automatic, dose dependent, and follow appropriate time course

**Pediatric Human Patient Simulator must be includes the following preconfigured Scenarios**

**Allied Health**

- Electrocution
- Accidental Overdose
- Closed Head Injury
- Diabetic Ketoacidosis with Hypoxemia
- Obstructed Airway
- Trauma with Pneumothorax
- Anesthesia
- Cannot Intubate Cannot Ventilate
- Epidural High Spinal
- Foreign Body Aspiration
- Hypertension and Tachycardia
- Spontaneous Tension Pneumothorax
- Upper Airway Obstruction
- Pediatric Advanced Life Support (PALS)
- Asthma Attack
- Asystole
- Bradycardia
- Ingestion
- Motor Vehicle Crash
- Pulseless Electrical Activity
- Septic Shock
- Shock
- Supraventricular and Ventricular Tachycardia
- Ventricular Fibrillation

(COUNTRY OF ORIGIN OF ALL PRODUCTS: NORTH AMERICA (USA, CANADA), EU AND JAPAN ONLY)

**Accessories:** standard accessories.

**Optional:** Nil

**Warranty:** Two year with all spare parts, during warranty period firm should maintain equipment’s and done PPM as per principle recommendation. If any spare part required during installation or PPM will be responsibility of the firm. Principle recommended software’s (hard copy) will be handed over to end user. (during and after warranty)

**NOTE:** general specification, If any firm have any query about specification, must visit at biomedical department in office timing (8am to 2pm) before one week of opening date of tender. Firm should quote their latest model. Firm should provide specification comparative along with technical bid with references of Data sheet or other authentic documents. Demonstration is essential.

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<thead>
<tr>
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<th>Quantity</th>
<th>Clinical purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>46</td>
<td>Medical and lab Equipment</td>
<td>Ultrasound central line training Model</td>
<td>01</td>
<td>Model must offer anatomically correct brachial plexus and vascular access anatomy of the upper thorax and neck. This ultrasound mannequin have anatomy for nerve blocks including the supraclavicular nerves, interscalene nerves, infraclavicular nerves and enhanced access of the posterior interscalene nerve</td>
</tr>
</tbody>
</table>
block approach. Vascular access anatomy should include the internal jugular vein (IJ), brachiocephalic vein, subclavian vein, axillary vein, carotid artery, subclavian artery and axillary artery. The model have accessed via the internal jugular (IJ), subclavian, infraclavicular and supraclavicular approach as well as the axillary vein.

**Technical specification:**
Next generation upper torso ultrasound central line and regional anesthesia mannequin
- The most realistic and durable central venous catheter and nerve block ultrasound training model available anywhere
- Extremely realistic external and internal anatomy for ultrasound guided or blind insertion training
- Anatomically correct; cast from a live patient and constructed from a digital human file
- Regional anesthesia anatomy includes: supraclavicular nerves, interscalene nerves, infraclavicular nerves and enhanced access of the posterior interscalene nerve block approach
- The brachial plexus can be injected with simulated anesthetics to verify needle tip location and to practice the entire anesthesia procedure
- Injected simulated anesthetics are expelled allowing for repeated use
- Venous anatomy includes: internal jugular vein (IJ), brachiocephalic vein, subclavian vein and axillary vein
- Arterial anatomy includes: carotid artery, subclavian artery and axillary artery
- Simulated superior vena cava, right atrium and right ventricle allows clinicians to fully thread guidewires and catheters without resistance
- Internal landmarks for superior realism include the trachea, manubrium and clavicle
- Veins are compressible using mild pressure while the arteries remain uncompressed
- Excellent for training clinicians in the psychomotor skills associated with ultrasound guided central line placement training
- Teach, learn and practice on an extremely realistic model rather than a live patient, reducing overall risk
- Superb imaging characteristics optimize your training; simulated tissue matches the acoustic properties of real human tissue
- Arterial pulsations simulated using provided hand bulb or optional integrated automated pumping system
- Positive fluid flow in the vessels; model is prefilled with red fluid in the arteries and blue fluid in the veins
- Easy to refill using QuickFill™ Tubes
- Self-healing tissue offers users tremendous durability - minimizing the need for replacement parts and providing a low cost of ownership
- For use with any ultrasound system, no computer simulation or software necessary
- Excellent imaging quality using any ultrasound system
- Practice using ultrasound system controls
- No special storage needs
- Patented technology
- Purchase includes 2 bottles of simulated blood refill solution; one red (arterial), one blue (venous) 235mls bottles
- Soft storage case available for purchase (BPH662-A)
- Size 21.5" x 22.5" x 9" (55cm x 57cm x 23cm) (W x H x D)
- Weight 28 lbs. (hand pump) (12.7kg), 32 lbs. (auto pump) (14.5kg)
- Auto pump model utilizes low voltage universal power supply

Made in USA

**Accessories:**

**Optional:**

**Warranty:** Two year with all spare parts, during warranty period firm should maintain equipment’s and done PPM as per principle recommendation. If any spare part required during installation or PPM will be responsibility of the firm. Principle recommended software’s (hard copy) will be handed over to end user. (during and after warranty)

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**Sr. No 47**

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<tr>
<th>Clinical Specialty</th>
<th>Medical and lab Equipment</th>
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</thead>
<tbody>
<tr>
<td>Generic Name</td>
<td>ECHO Simulator</td>
</tr>
<tr>
<td>Quantity</td>
<td>01</td>
</tr>
<tr>
<td>Clinical purpose</td>
<td>Ultrasound ECHO Simulator with physiology and pathologies of TTE &amp; TEE training.</td>
</tr>
</tbody>
</table>
Trans Esophageal Echocardiography – TEE : System should have at least 30-40 basic task training exercises for students such as:

- Basic Probe Movement & Orientation: Time bound exercise, with/without the aid of reference image to help understanding of basic probe handling and movements with metrics.
- Setting, Adjustment: Facilitate trainees to optimize best image settings for different views, with adjustments of DOF, Beam angle, Gain & Contrast. Expert can verify the outcome after completion of exercise.
- Target Cut Plane: Trainees recognize standard views with this exercise and after completion expert can evaluate the performance.

Transthoracic Echocardiography – TTE: System should have at least 60-70 basic task training exercises such as

- Basic Probe Movement & Orientation: Time bound exercise, with/without the aid of reference image to help understanding of basic probe handling and movements with metrics.
- Measurement: Facilitates the trainees to get the idea about how to use different measurement tools, with/without reference image.
- Abdominal: System should have at least 10-15 basic task training exercises such as
  - Basic Probe Movement & Orientation: Time bound exercise, with/without the aid of reference image to help understanding of basic probe handling and movements with metrics.

Pleural Module: The Pleural Add-on Module provides lung pathologies featuring fully animated lung respiration and respiratory variation of the inferior vena cava (IVC)

FAST: (Focus Assessment with Sonography for Trauma) – to see the fluid around several organs in the abdomen includes the per hepatic space, the per splenic space, the pericardium and the pelvis.

Multimedia Training Course –

Should be endorsed and recognized by the reputed and renowned international societies for the standardized courseware

a) **Focused Transthoracic Echo Curriculum**- Supplier should provide at least 7-8 hours of course content covering principals and applications of TTE examinations to provide learning in a systematic, organized way, the elements of echocardiography that are required in order to achieve competence in focused transthoracic echocardiography.

b) **Focused TEE Curriculum**- Supplier should provide at least 7-8 hours of course content covering the principles and application of TEE examinations to provide learning in a systematic, organized way, the elements of transesophageal echo that are required in order to achieve competence in focused transesophageal echocardiography.

**Assessment of Pleural Space and Lung**- Supplier should provide at least 2-3 hours of course content covering the principles and applications of pleural ultrasound to provide learning in a systematic, organized way, the elements of pleural ultrasound that are required in order to achieve competence in pleural ultrasound.

**System should have the following features for ultrasound scanning:**

- 3D animated augmented reality feature shows ultrasound beam and target structures.
- Spilt screen display with corresponding 2D image.
- Realistic scanning environment (Apart from heart it should renders the liver, ribs, sternum, superior and inferior vena cava, aorta, lungs and vertebral bodies.
- Surrounding anatomical structures (i.e. liver, lungs, and sternum artifacts) are displayed and may be toggled on and off depending on learner’s level of comfort.
- Software includes tutorial features to help users identify anatomical structures on augmented reality display.
- Heart rate can be modified on the fly.
- Includes single lead ECG tracing.
- Target Cut Plane feature allows learners to visualize corrects probe positioning.
- Matrix for evaluation of student’s performance.
- 3D view includes animated display of organ being scanned, surrounding structures, and 360° view
- Lung and rib artifacts can be toggled on/off
- Ability to load pathologies in stealth mode to hide the name of the pathology from learners
- Software includes tutorial feature to help users identify anatomical structures
- Software includes supporting content for pathologies such as case presentations, medical references
- Intuitive instructional content menu with self-directed learning exercises including probe movement
- Metrics, reports, images, and video captures may be exported to a USB storage device
- Multimedia ICCU course on point of care ultrasound included with the simulator.
- Mannequin should have ability to be placed in the tilted left lateral decubitus position.

**Realistic Echo Environment:**

- Electronic calipers
- Area measurements
- Contour Measurement
- Circumference Measurement
- Gain and contrast settings
- Depth of field adjustment
- Angle Settings

**System must have following Cardiac Pathologies:**

**VIMEDIX Cardiac Pathology Includes:**

- Anterior Myocardial Infarction in a COPD Patient,
- Biologic Prosthetic Valve in Aortic Position,
- Dilated Cardiomyopathy – Mild Left Ventricular Systolic Dysfunction,
- Dilated Cardiomyopathy – Very Severe Left Ventricular Systolic Dysfunction in a COPD Patient, Left Pleural Effusion,
- Left Ventricular, Apical Aneurysm with Thrombus,
- Mechanical Prosthetic Valve (Bileaflet) in Aortic and Mitral Position,
- Mechanical Prosthetic Valve (Tilting Disk) in Mitral Position,
- Normal Heart in a COPD Patient Tamponade.
- VIMEDIX Cardiac Pathology
- Acute Anterior Myocardial Infarction,
- Acute Lateral Myocardial Infarction in a COPD Patient,
- Aortic Valve Infective Endocarditis, Coarse Ventricular Fibrillation,
- Dilated Cardiomyopathy –
  - Very Severe Left Ventricular Systolic Dysfunction, Dilated Cardiomyopathy –
  - Mild Left Ventricular Systolic Dysfunction in a COPD Patient,
  - Coarse Ventricular Fibrillation,
  - Fine Ventricular Fibrillation,
  - Pulmonary Hypertension,
  - Pulmonary Hypertension in a COPD Patient

**Price to be quoted of optional.**

- Dilated Cardiomyopathy – Severe Biventricular Systolic Dysfunction
- Hyperdynamic Left Ventricular Systolic Function
- Normal Heart
- Recent Anterior Myocardial Infarction with Pericardial Effusion
- Anterior Myocardial Infarction in a COPD Patient
- Biologic Prosthetic Valve in Aortic Position
- Dilated Cardiomyopathy – Mild Left Ventricular Systolic Dysfunction
- Dilated Cardiomyopathy – Very Severe Left Ventricular Systolic Dysfunction in a COPD Patient
- Patient
- Left Pleural Effusion
- Left Ventricular Apical Aneurysm with Thrombus
- Mechanical Prosthetic Valve (Bileaflet) in Aortic and Mitral Position
- Mechanical Prosthetic Valve (Tilting Disk) in Mitral Position
- Normal Heart in a COPD Patient
- Tamponade
- Acute Anterior Myocardial Infarction
- Acute Lateral Myocardial Infarction in a COPD Patient
- Aortic Valve Infective Endocarditis
- Coarse Ventricular Fibrillation
- Dilated Cardiomyopathy – Very Severe Left Ventricular Systolic Dysfunction
- Dilated Cardiomyopathy – Mild Left Ventricular Systolic Dysfunction in a COPD Patient
- Coarse Ventricular Fibrillation
• Fine Ventricular Fibrillation
• Pulmonary Hypertension
• Pulmonary Hypertension in a COPD Patient
• Acute Inferior Myocardial Infarction
• Acute Lateral Myocardial Infarction
• Acute Right Ventricular Myocardial Infarction
• Aortic Dissection – Type B
• Aortic Stenosis - Valvular
• Ballooning Mitral valve – two leaflets
• Bicuspid Aortic Valve
• Dilated Cardiomyopathy – Severe Left Ventricular Systolic Dysfunction
• Myxoma
• Right Pleural Effusion
• Acute Inferior and Right Ventricular Myocardial Infarction with Ventricular Septal Defect
• Acute Inferior Myocardial Infarction with Right Ventricular Myocardial Infarction
• Aortic Insufficiency
• Atrial Septal Defect - small
• Ballooning Mitral Valve
• Cardiac Arrest Standstill in a COPD patient
• Coronary Artery Disease – Wall Motion Abnormalities in the 3 Coronary Territories
• Dilated Cardiomyopathy – Moderate Biventricular Systolic Dysfunction
• Left Atrial Appendage Thrombus
• Thrombus in Transit Patent Foramen Ovale
• Amyloidosis
• CMP - Dilated
• CMP - Hypertrophic
• Ebstein’s Anomaly - ASD
• LV Apical Thrombus
• Mitral Valve Prolapse
• Mitral Valve - Rheumatic Disease
• Myxoma
• Takotsubo
• VSD (CIV) Post-Infarct
• Abdominal Compartment Syndrome
• Dynamic Right Ventricular Outflow Tract Obstruction
• Floating Pulmonary Embolism
• Full Stomach
• Inferior Vena Cava Stenosis
• Isolated Right Arterial Tamponade
• Left Ventricular Outflow Tract Obstruction
• Mechanical Right Ventricular Outflow Tract Obstruction
• Reduced Mean Systemic Pressure (Reduced Preload) From Liver Abscess
• Reduced Mean Systemic Pressure (Respiratory Variation Of Superior Vena Cava
• Right Pneumothorax And Right Heart Collapse
• Right-sided Carbon Dioxide Or Air Embolism

**System must have following Lung Pathologies:**

• Bilateral Diaphragmatic Dysfunction
• Bilateral Pulmonary Edema
• Central Pneumonia
• Complete Pleural Effusion
• Empyema
• Pneumonia
• Pneumothorax
• Small Pleural Effusion
• Unilateral Diaphragmatic Dysfunction

**FEMORAL REGIONAL ANESTHESIA & VASCULAR ACCESS WITH DVT OPTION**
Must Be Equipped with the Following Features:

Model must offer anatomically correct femoral nerve and vascular anatomy as well as anatomical landmarks of the lower torso. Users can utilize traditional anatomical landmarks for blind venous access insertion techniques, or utilize ultrasound to obtain images of pertinent anatomical structures. We recommend that users select a model containing either a hand pump or integrated pumping system because arterial pulsations can help users differentiate between arteries and veins as well as offering providing internal reference points for regional anesthesia procedures.

Basic Equipment (Hardware):

- Mannequin
- Computer – Including keyboard, mouse, cable and screen
- 21” TFT monitor
- Transducers:
  - Phased Array Transthoracic Echocardiography (TTE) Probe
  - Trans Esophageal Echocardiography (TEE) Probe
  - Curvilinear Probe (For FAST, Abdomen & Pleural Modules)

Mannequin:

- Should have realistic tactile features for enhance learning, depressible abdomen, palpable ribs and sternum & depressible interspaces. Should have ability to be placed in the tilted left lateral decubitus position

Downloadable Software Upgrades:

- Capable of downloading automatic software updated from the central server

Accessories: standard

Optional: Nil

Warranty: Two year with all spare parts, during warranty period firm should maintain equipment’s and done PPM as per principle recommendation. If any spare part required during installation or PPM will be responsibility of the firm. Principle recommended software’s (hard copy) will be handed over to end user. (during and after warranty)

NOTE: General specification, If any firm have any query about specification, must visit at biomedical department in office timing (8am to 2pm) before one week of opening date of tender. Firm should quote their latest model. Firm should provide specification comparative along with technical bid with references of Data sheet or other authentic documents. Demonstration is essential.

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<tr>
<th>Clinical Specialty</th>
<th>Medical and lab Equipment</th>
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</thead>
<tbody>
<tr>
<td>Generic Name</td>
<td>Simulator for Bronchoscope and endoscopic tracheal intubation (if this feature not available with the Human patient simulator)</td>
</tr>
<tr>
<td>Quantity</td>
<td>01</td>
</tr>
<tr>
<td>Clinical purpose</td>
<td>Will be used for bronchoscopy and flexible intubation for the training of Clinical anatomies.</td>
</tr>
</tbody>
</table>

Technical specification:

- Bronchoscopy simulator.
  - Bronchoscopy Simulator should have innovative product designed to improve bronchoscope dexterity through hands-on training.
  - Replica video bronchoscope should be with small desktop sensor.
  - The sensor should registers movement of the insertion tube and translates this to a three-dimensional virtual
  - Airway should be displayed through the software on the laptop screen.
  - The user should progress through a range of upper and lower airway scenarios receiving
  - Instant feedback should have scoring metrics, recording and playback options.
  - Both the replica video bronchoscope and desktop sensor module should be designed for the rigors of training – avoiding expensive damage to clinical bronchoscopes during training
  - Recording and Evaluation Functionality
  - Virtual modelling a range of anatomy and pathology scenarios facilitates bronchoscope dexterity as well as building experience and knowledge.
  - It should facilitates practice – individual login means each user session can be stored to monitor individual progress. It decreases patient risk, providing virtual scenarios for learning before clinical contact.
  - System should consist of following.
- Bronchoscope Video
- Laptop
- Sensor based module.
- Insertion module.
- Software with anatomical and pathological.
- Software of reporting

Accessories:

Optional:

Warranty: Two year with all spare parts, during warranty period firm should maintain equipment’s and done PPM as per principle recommendation. If any spare part required during installation or PPM will be responsibility of the firm. Principle recommended software’s (hard copy) will be handed over to end user. (during and after warranty)

NOTE: Approved PVMS specification, If any firm have any query about specification, must visit at biomedical department in office timing (8am to 2pm) before one week of opening date of tender. Firm should quote their latest model. Firm should provide specification comparative along with technical bid with references of Data sheet or other authentic documents. Demonstration is essential.

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<tbody>
<tr>
<td>49</td>
<td>Generic Name</td>
<td>BLS Manikins (Adult)</td>
</tr>
<tr>
<td></td>
<td>Quantity</td>
<td>04</td>
</tr>
<tr>
<td></td>
<td>Clinical purpose</td>
<td>Use for Training in anesthesia department</td>
</tr>
</tbody>
</table>

Technical specification:
Airway CPR Training Manikins MUST BE EQUIPPED WITH THE FOLLOWING FEATURES:

**CPR Skills**

1. Compressions: 30:2 x 2 cycles
2. Compressions: 30:2 x 4 cycles (time for vent)
3. Ventilations: Rescue Breaths (feedback on volume, rate, Interval)
4. CPR: 1 Rescuer Practice and 1 Rescuer Test
5. CPR: 2 Rescuer Practice and 1 Rescuer Test
6. CPR with an Advanced Airway (Practice and Test)
7. Intubate, then move to CPR (Practice and Test)
8. Intubate while Compressions are ongoing
9. 10:1 Asynchronous CPR (continuous compressions and a ventilation every 6 secs on Intubated Patient)
10. Ventilation Timing with Compression
11. Ventilation Rate and Volume
12. Ventilation Accuracy for Optimal value to Patient

**Interface**

1. Compressions Accuracy Displayed in Real Time
   a. (Depth, Rate, recoil, Too Deep, Hitting Bottom)
2. Ventilations Accuracy Displayed in Real Time
   a. (Volume, Rate and Interval)
3. CPR Accuracy Displayed in Real Time
4. Turn Visual Feedback On or OFF

**Real Time Feedback**

1. Real Time Display of Skills
2. Display Skills Performance Quality
3. Results Display - As Soon as Activity Completed
4. Review Feedback by Cycle;
5. Display Score, Sub-Skill Percentage, and Compliance Score

Chart Display of Results.

Accessories:

Optional:

Warranty: Two year with all spare parts, during warranty period firm should maintain equipment’s and done PPM as per principle recommendation. If any spare part required during installation or PPM will be responsibility of the firm. Principle recommended software’s (hard copy) will be handed over to end user. (during and after warranty)

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<tbody>
<tr>
<td>50</td>
<td>Medical and lab Equipment</td>
<td>BLS Manikins (Peads)</td>
<td>04</td>
<td>Use for training purpose in Anesthesia department</td>
</tr>
</tbody>
</table>

**Technical specification:**
- Patented Hygienic system
- Airway open only in sniff position
- Airway obstruction possibility

The Ambu Baby is a lifelike manikin that simulates babies up to the age of one year.

Baby Manikin
A feature like all Ambu BLS manikins the Ambu Baby has the patented hygienic system that eliminates the risk of cross infections. All trainees receive their own face piece and head bag for the training. At the end of the training the face piece can be cleaned and the head bag is discarded. A truly 100% hygienic way of training. Just as in real life the airways open only when the head is properly moved into the sniff position. The instructor can simulate obstruction of the airway by an on/off slider. The Ambu baby has additional features like a realistic brachial pulse to provide a correct and realistic training. Stomach ventilation can further be checked visually.

Specifications
- Length: 40 cm
- Weight: 2.5 kg

**Accessories:**
- Optional:

**Warranty:** Two year with all spare parts, during warranty period firm should maintain equipment’s and done PPM as per principle recommendation. If any spare part required during installation or PPM will be responsibility of the firm. Principle recommended software’s (hard copy) will be handed over to end user. (during and after warranty)

**NOTE:** General specification, If any firm have any query about specification, must visit at biomedical department in office timing (8am to 2pm) before one week of opening date of tender. Firm should quote their latest model. Firm should provide specification comparative along with technical bid with references of Data sheet or other authentic documents. Demonstration is essential.

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<thead>
<tr>
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<th>Generic Name</th>
<th>Quantity</th>
<th>Clinical purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>51</td>
<td>Medical and lab Equipment</td>
<td>Spinal and Epidural Anesthesia simulator</td>
<td>01</td>
<td>For lumbar puncture and lumbar epidural procedures, the use of external landmarks as the iliac crests can be palpated in the model to initially orient the user to the proper access points. Further palpation of the spinous processes provides additional landmarks.</td>
</tr>
</tbody>
</table>

**Technical specification:**

**LUMBAR PUNCTURE AND SPINAL EPIDURAL**

**Must Be Equipped with the Following Features:**

- Along with accessory obese spinal insert provides more adipose tissue which provides the palpation of the spinal processes
- Excellent training platform for lumbar puncture, lumbar epidural, thoracic epidural, and cervical epidural procedures*
- Excellent for blind insertion techniques or using ultrasound for guided lumbar puncture and spinal epidural procedures
- Superb for needle access as well as the placement of catheters
- Can be positioned in the upright or lateral decubitus position allowing users to accurately position the model for appropriate training scenarios
- External landmarks as the iliac crests can be palpated in the model to initially orient the user to the proper access points
- Pulpation of the spinous processes provides additional landmarks
- The accessory obese spinal insert** provides more adipose tissue disallowing the palpation of the spinal processes
Each spine tissue module is superb in its realism and contains the appropriate spinal segment, skin tissue, ligamentum flavum, epidural space, dura, subarachnoid membrane, and subarachnoid space containing cerebral spinal fluid. Utilize for full procedural training including injecting local anesthetics, introduce the needle to the epidural space and/or subarachnoid space, thread catheters, infuse simulated anesthetics, and obtain manometer measurements. Realistic tissue response including the pop encountered when traversing the ligamentum flavum, loss of resistance when entering the epidural space, and cerebral spinal fluid flow when the spinal cistern is accurately accessed. The cerebral spinal fluid pressures can be easily increased in order to simulate pathological scenarios during lumbar puncture procedures. The optional thoracic or cervical/upper thoracic spine insert allows users to practice thoracic or cervical epidural needle and catheter placements.

Available in a variety of configurations to meet your training needs. Extremely durable and is self-healing which saves you money by reducing the need to repeatedly purchase replacement parts. All injected fluids are automatically expelled and cerebral spinal fluid that is removed is easily refilled using quick refill ports. Ultrasound can be used for identification of the optimal insertion points, angle of needle insertion, and determination of the depth to the ligamentum flavum, epidural space, and spinal cistern. Superb ultrasound imaging characteristics. Use any ultrasound system and never have to adjust the system settings unrealistically or have problems imaging the model’s anatomy. Ultra-durable self-healing tissue is extremely realistic in ultrasound imaging characteristics and feels like real human tissue. Self-healing tissue will withstand tremendous use and will save you money by dramatically reducing the necessity for purchasing replacement parts. Purchase includes 1 bottle of simulated refill solution; one clear 235mls bottle. Add optional Soft Storage Case for light transport and storage.

Modular design
High quality
Patented technology
Size: 17” x 11” x 17” (43cm x 28cm x 43cm) (L x W x H)
Weight: 33lbs (15kg)

Accessories:

Optional:

Warranty: Two year with all spare parts, during warranty period firm should maintain equipment’s and done PPM as per principle recommendation. If any spare part required during installation or PPM will be responsibility of the firm. Principle recommended software’s (hard copy) will be handed over to end user. (during and after warranty)

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Sr. No 52

Clinical Specialty | Medical and lab Equipment
---|---
Generic Name | Portable Ventilator
Quantity | 04
Clinical purpose | Transport ventilator used for the patient during transportation to move breathable air into and out of the lungs, to provide breathing for a patient who is physically unable to breathe, or breathing insufficiently in ambulance, air ambulance.


Optional:

Warranty: Two year with all spare parts, during warranty period firm should maintain equipments and done PPM as per principle recommendation. If any spare part required during installation or PPM will be responsibility of the firm.
Firm. Firm must send annual PPM schedule with installation report.

Note: Approved PVMS specification, If any firm have any query about specification, must visit at biomedical department in office timing (8am to 2pm) before one week of opening date of tender. Firm should quote their latest model. Firm should provide specification comparative along with technical bid with references of Data sheet or other authentic documents. Demonstration is essential.

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<tr>
<td>53</td>
<td>Medical and lab Equipment</td>
<td>Skill lab for Cath lab</td>
<td>01</td>
</tr>
</tbody>
</table>

**Clinical purpose:**
Use for training purpose in cardiology

**Technical specification:**
Catheterization Laboratory virtual Replica for Psychomotor training.
TTE Ultrasound and Angiography Replica simulation skill Trainer with Color Doppler and Angio Skills.

Angiographic Trainer for catheterization Laboratory.
- Virtual simulator should be height adjustable.
- Realistic physiological responses and realistic fluoro images based System.
- It should have carriage supports the use of up to four coaxial endovascular tools simultaneously.
- System should have capability of ECG and physiological Pacing monitoring.
- Three-Dimensional (3-D) imaging and anatomical view for Vasculature must be capable of the simulation device.
- System should have anatomy plate with four axial output.
- Angiographic, Guiding catheter of maximum size for the training.
- CathLab table includes anatomical plate and table height can be adjusted
- Diagnostic/Therapeutic Wires must be use in the simulator.
- System should have Adjunct Therapy feature allows users to select various pharmacologic and non-pharmacologic therapies. These therapies may be given to prevent or treat complications occurring within the simulation.
- Manifold / Injection of contrast and medications
- Balloon inflation device should be able to use with system for inflation of at least 20cc syringe, pressure gauge.
- Fluoroscopy equipment simulation should be possible with C-arm controller on the hand.
- Dual Screen Interface for anatomical view in the real time and for fluoroscopic images.
- One for physiological monitor and the other one displays vasculature and catheter
- Foot pedal for cine and fluoro controls (Dual foot model).
- Venogram Balloon for the contrast injection.
- Embolic protection devices – Interceptor, Guide wire, Exponent
- Computer with integrated functions.
- Flat Panel Monitors (2) 20 inch or more.
- Simulation Cart Balloon/Stent catheters
- Percutaneous Peripheral Interventions (PPI) Carotid Artery Angioplasty and stenting. All cases include embolic protection devices and pharmacologic/non-pharmacologic therapies.
- Percutaneous Coronary Interventions (PCI): Basic PCI, includes 10 cases of single or multiple-vessel coronary disease, including stenosis, occlusions and thrombus. The main focus of these cases is to familiarize the student with basic angiographic techniques and fluoroscopic visualization of the coronary anatomy. Navigation and tool delivery are emphasized with minimal complications.
- Advance coronary intervention should have 10 cases of challenging anatomy including AMIs, SVGs, CTOs, ostial lesions, thrombus and embolization’s, ability to prevent and treat complications with embolic protection devices, pharmacologic and electrical therapy and o send the patient to “emergency cardiac surgery” if necessary. Proper sequencing of therapies and decision-making are emphasized.
- Comprehensive performance metrics including procedure time, angiography metrics, fluoroscopy metrics, images taken, a complications log (time stamped), and an overall procedure log that time stamps every action performed during the simulated procedure.
- Full System Cardiac Rhythm Disease Management (CRDM) Heart Failure Bradycardia & Cardiac resynchronization Therapy with catheter, lead wire.
- Cardiac Surgery : Transcatheter Aortic Valve Replacement (TAV) , With Transcatheter Pulmonic Valve Replacement (TPV)

System should complete with Embolic Protection Tool Kit should have following:
- Filter Basket EPD Handle
- Occlusive Ballon EPD Handle
- Self-expanding Stent Handle
• 0.014” Guard wire.
• Embolectomy aspiration catheter
• Syringe

CRDM Tool Kit:
• Accessory handles for deflectable catheters (2)
• Guide wire steering handle (torque tool)
• Deflectable (guide) catheters
• 0.035” Diagnostic Guidewire
• 0.016” Nitinolguidewire
• Cook introducer valve
• Left heart module hybrid lead

System should have capability to operate with real-time machine for TEE.

- Realistic torso with tactile features to enhance learning
- Transthoracic Echocardiography probe
- 1 normal heart
- Pathologies: Dilated cardiomyopathy – severe biventricular systolic dysfunction; hyperdynamic left ventricular systolic function, and recent anterior myocardial infarction with pericardial effusion
- Computer with keyboard and mouse
- Display monitor, VGA connector cable, and monitor supply cord
- Ethernet cable
- The Ultrasonography Simulator should include an all-in-one computer, mouse and keyboard to operate the system.
- Provision of Additional software packages when required.
- Capability of upgrading software.

- **Trans Esophageal Echocardiography – TEE probe**: System should have at least 30-40 basic task training exercises for students such as:
  - Basic Probe Movement & Orientation: Time bound exercise, with/without the aid of reference image to help understanding of basic probe handling and movements with metrics.
  - Setting, Adjustment: Facilitate trainees to optimize best image settings for different views, with adjustments of DOF, Beam angle, Gain & Contrast. Expert can verify the outcome after completion of exercise.
  - Target Cut Plane: Trainees recognize standard views with this exercise and after completion expert can evaluate the performance.

- **Transthoracic Echocardiography – TTE probe**: System should have at least 60-70 basic task training exercises such as
  - Basic Probe Movement & Orientation: Time bound exercise, with/without the aid of reference image to help understanding of basic probe handling and movements with metrics.
  - Measurement: Facilitates the trainees to get the idea about how to use different measurement tools, with/without reference image.
  - Abdominal: System should have at least 10-15 basic task training exercises such as
  - Basic Probe Movement & Orientation: Time bound exercise, with/without the aid of reference image to help understanding of basic probe handling and movements with metrics.

- **Pleural Module**: The Pleural Add-on Module provides lung pathologies featuring fully animated lung respiration and respiratory variation of the inferior vena cava (IVC)

**VIMEDIX Cardiac Pathology Includes:**
Anterior Myocardial Infarction in a COPD Patient,
- Biologic Prosthetic Valve in Aortic Position,
- Dilated Cardiomyopathy – Mild Left Ventricular Systolic Dysfunction,
- Dilated Cardiomyopathy – Very Severe Left Ventricular Systolic Dysfunction in a COPD Patient, Left Pleural Effusion,
- Left Ventricular, Apical Aneurysm with Thrombus,
- Mechanical Prosthetic Valve (Bileaflet) in Aortic and Mitral Position,
- Mechanical Prosthetic Valve (Tilting Disk) in Mitral Position,
- Normal Heart in a COPD Patient Tamponade.
- VIMEDIX Cardiac Pathology
- Acute Anterior Myocardial Infarction,
- Acute Lateral Myocardial Infarction in a COPD Patient,
- Aortic Valve Infective Endocarditis, Coarse Ventricular Fibrillation,
- Dilated Cardiomyopathy –
- Very Severe Left Ventricular Systolic Dysfunction, Dilated Cardiomyopathy –
- Mild Left Ventricular Systolic Dysfunction in a COPD Patient,
- Coarse Ventricular Fibrillation,
- Fine Ventricular Fibrillation,
- Pulmonary Hypertension,
- Pulmonary Hypertension in a COPD Patient

**Price to be quoted of optional. For each module.**
- Dilated Cardiomyopathy – Severe Biventricular Systolic Dysfunction
- Hyperdynamic Left Ventricular Systolic Function
- Normal Heart
- Recent Anterior Myocardial Infarction with Pericardial Effusion
- Anterior Myocardial Infarction in a COPD Patient
- Biologic Prosthetic Valve in Aortic Position
- Dilated Cardiomyopathy – Mild Left Ventricular Systolic Dysfunction
- Dilated Cardiomyopathy – Very Severe Left Ventricular Systolic Dysfunction in a COPD Patient
- Patient
- Left Pleural Effusion
- Left Ventricular Apical Aneurysm with Thrombus
- Mechanical Prosthetic Valve (Bileaflet) in Aortic and Mitral Position
- Mechanical Prosthetic Valve (Tilting Disk) in Mitral Position
- Normal Heart in a COPD Patient
- Tamponade
- Acute Anterior Myocardial Infarction
- Acute Lateral Myocardial Infarction in a COPD Patient
- Aortic Valve Infective Endocarditis
- Coarse Ventricular Fibrillation
- Dilated Cardiomyopathy – Very Severe Left Ventricular Systolic Dysfunction
- Dilated Cardiomyopathy – Mild Left Ventricular Systolic Dysfunction in a COPD Patient
- Coarse Ventricular Fibrillation
- Fine Ventricular Fibrillation
- Pulmonary Hypertension
- Pulmonary Hypertension in a COPD Patient
- Acute Inferior Myocardial Infarction
- Acute Lateral Myocardial Infarction
- Acute Right Ventricular Myocardial Infarction
- Aortic Dissection – Type B
- Aortic Stenosis - Valvular
- Ballooning Mitral valve – two leaflets
- Bicuspid Aortic Valve
- Dilated Cardiomyopathy – Severe Left Ventricular Systolic Dysfunction
- Myxoma
- Right Pleural Effusion
- Acute Inferior and Right Ventricular Myocardial Infarction with Ventricular Septal Defect
- Acute Inferior Myocardial Infarction with Right Ventricular Myocardial Infarction
- Aortic Insufficiency
- Atrial Septal Defect - small
- Ballooning Mitral Valve
- Cardiac Arrest Standstill in a COPD patient
- Coronary Artery Disease – Wall Motion Abnormalities in the 3 Coronary Territories
- Dilated Cardiomyopathy – Moderate Biventricular Systolic Dysfunction
- Left Atrial Appendage Thrombus
- Thrombus in Transit Patent Foramen Ovale
- Amyloidosis
- CMP - Dilated
- CMP - Hypertrophic
- Ebstein’s Anomaly - ASD
- LV Apical Thrombus
- Mitral Valve Prolapse
- Mitral Valve - Rheumatic Disease
- Myxoma
- Takotsubo
- VSD (CIV) Post-Infarct
- Abdominal Compartment Syndrome
- Dynamic Right Ventricular Outflow Tract Obstruction
- Floating Pulmonary Embolism
- Full Stomach
- Inferior Vena Cava Stenosis
- Isolated Right Arterial Tamponade
- Left Ventricular Outflow Tract Obstruction
- Mechanical Right Ventricular Outflow Tract Obstruction
- Reduced Mean Systemic Pressure (Reduced Preload) From Liver Abscess
- Reduced Mean Systemic Pressure (Respiratory Variation Of Superior Vena Cava
- Right Pneumothorax And Right Heart Collapse
- Right-sided Carbon Dioxide Or Air Embolism

**System must have following Lung Pathologies:**

- Bilateral Diaphragmatic Dysfunction
- Bilateral Pulmonary Edema
- Central Pneumonia
- Complete Pleural Effusion
- Empyema
- Pneumonia
- Pneumothorax
- Small Pleural Effusion
- Unilateral Diaphragmatic Dysfunction

Optional Software (Price quote separate) Packages to Choose from Must Contain the Following:

**FAST Mix & Match Package No. 1**

1. Tamponade
2. Left Pleural Effusion
3. Right Pleural Effusion
4. Abdominal Aortic Aneurysm
5. Aortic Dissection – Type B
6. Spinal-Renal Space (medium)
7. Hepato-Renal Space (Morrison’s Pouch – medium)
8. Retro-Vesicular Space (Douglas’ Pouch – medium)
9. Spinal-Renal Space (small)
10. Abdominal Aortic Dissection

**Cardiac Package No. 2**

1. Fine Ventricular Fibrillation
2. Asystole
3. Dilated Cardiomyopathy – Very severe left ventricular systolic dysfunction
4. Dilated Cardiomyopathy – Mild left ventricular systolic dysfunction in a COPD patient
5. Coarse Ventricular Fibrillation
6. Pulmonary Hypertension in a COPD patient
7. Pulmonary Hypertension
8. Aortic Valve Infective Endocarditis
9. Acute Lateral Myocardial Infarction in a COPD patient
10. Acute Anterior Myocardial Infarction

Cardiac Package No. 3
1. Acute Inferior Myocardial Infarction
2. Acute Right Ventricular Myocardial Infarction
3. Aortic Dissection – Type B
4. Bicuspid Aortic Valve
5. Myoxma in Left Atrium
6. Aortic Stenosis – Valvular
7. Dilated Cardiomyopathy – Severe Left Ventricular Systolic Dysfunction
8. Right Pleural Effusion
9. Acute Lateral Myocardial Infarction
10. Ballooning Mitral valve – two leaflets

Cardiac Package No. 4
1. Acute Inferior Myocardial Infarction with Right Ventricular Myocardial Infarction
2. Aortic Insufficiency
3. Cardiac Arrest Standstill in a COPD patient
4. Atrial Septal Defect – small
5. Coronary Artery Disease – Wall Motion Abnormalities in the 3 Coronary Territories
6. Left Atrial Appendage Thrombus
7. Dilated Cardiomyopathy – Moderate Biventricular Systolic Dysfunction
8. Acute Inferior and Right Ventricular Myocardial Infarction with Ventricular Septal Defect
9. Ballooning Mitral Valve
10. Pulmonary Hypertension

Cardiac Mix & Match Package No. 1 (For emergency physicians)
1. Right Pleural Effusion
2. Tamponade
3. Fine Ventricular Fibrillation
4. Dilated Cardiomyopathy – Moderate Biventricular Systolic Dysfunction
5. Myoxm
6. Acute Lateral Myocardial Infarction Pulmonary Hypertension

Aortic Stenosis – valvular Anterior Myocardial Infarction in a COPD patient Mechanical Prosthetic Valve
Electrical
- 220- 230 V 50/60 Hz 5-10 A
Country of origin: USA, Japan, Western Europe.
FDA / CE Approval

Accessories:
Optional: Nil

Warranty:
Two year with all spare parts, during warranty period firm should maintain equipments and done PPM as per principle recommendation. If any spare part required during installation or PPM will be responsibility of the firm. Firm must send annual PPM schedule with installation report.

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<th>Medical and lab Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>54</td>
<td>Generic Name</td>
<td>ECG Machine &amp; USB /External Memory</td>
</tr>
<tr>
<td></td>
<td>Quantity</td>
<td>01</td>
</tr>
<tr>
<td></td>
<td>Clinical purpose</td>
<td>Electrocardiography (ECG) is the process of recording the electrical activity of the heart over a period of time using electrodes placed on a patient's body.</td>
</tr>
</tbody>
</table>
These electrodes detect the tiny electrical changes on the skin that arise from the heart muscle depolarizing during each heartbeat.

**Technical specification:**
Twelve Channel ECG on at least 5 inches LCD display Automatic Operation Variable gain: 1/2, 1, 2 cm/mV Thermal recorder for printing out Twelve channels simultaneously. Interpretation software. Recording Trace speed: 10, 25 and 50 mm/sec, Muscle artifact and AC (50Hz) interference filters Defibrillator protection Built-in AC operation & battery backup minimum 30mins Paper size: A4/210mm Built-in AC interference, noise filter and baseline drift control. Capability to interface with LAN/WLAN for data transfer Paper Roll 50.

**Accessories:** standard Accessories.

**Optional:**

**Warranty:** Two year with all spare parts, during warranty period firm should maintain equipments and done PPM as per principle recommendation. If any spare part required during installation or PPM will be responsibility of the firm. Firm must send annual PPM schedule with installation report.

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<tr>
<td><strong>Clinical Specialty</strong></td>
<td>Medical and lab Equipment</td>
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<tr>
<td><strong>Generic Name</strong></td>
<td>3D EP Navigation Mapping system</td>
</tr>
<tr>
<td><strong>Quantity</strong></td>
<td>01</td>
</tr>
<tr>
<td><strong>Clinical purpose</strong></td>
<td>Use in Electrophysiology Department for cardiac patients</td>
</tr>
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</table>

**Technical specification:**
3D NAVIGATION AND MAPPING SYSTEM
Non-Fluoroscopic 3 Dimensional beat by beat mapping system capable of Magnetic based and Impedance based mapping, to create true 3 dimensional geometries by point by point acquisition, to localize the chamber & catheter with precision in both Atrial & Ventricular Chambers.

The system should provide in vivo accuracy of up to 1mm with magnetic based tracking and up to 2mm with impedance based tracking. Should be capable of 24 bit signal resolution
Noise floor (Filtered) must be less than 0.03 mV (Filtered) & 0.15 mV (Unfiltered)
Must be open architecture based system compatible with all diagnostic and ablation catheters available in the lab.

Should offer multi catheter visualization:
- Can visualize unlimited catheters and at least 140 electrodes simultaneously.
- No location shifts overtime.
- All electrode can be seen (tip and curve)

Must provide for atleast 4 direct stimulation inputs. User should be able to select pacing channels using the 3D mapping system interface.

Should be capable of automatic and manual annotation, with real-time option to review all points acquired without affecting the acquisition workflow.

The system should have the capability to provide online activation maps, unipolar maps and bipolar maps as primary maps of the operator choice.
In addition to the primary online maps the system should be capable of providing isochronal, mesh, propagation maps to suit the operator.
The system should be able to create anatomy, activation and voltage maps simultaneously.

Must be capable of multi-electrode mapping with at least 52 electrodes.

Must have the following tools
- Dynamic Review
- Intelligent Automatic Annotation
- Active Respiration compensation
- Virtual Tissue targeting.

The system should be capable to Integrating the patient CT, DYNA-CT, or MRI (DICOM 3 format) image with the image of the heart chamber and overlap the same with 3D maps with high degree of accuracy.
The system should be capable of segmenting the patient image with the in-built software.
The system should be capable to displaying ablation parameters like power, temperature, time etc.
The supplier should be able to interface the 3D mapping system with the Electrophysiology recorder in the department with minimum accessories required.

Supplier should provide the necessary software for analyzing low amplitude and high frequency complex Atrial electro gram.
The computer workstation should comprise of at least 02 high resolution 24” Medical grade LED monitors.
Supplier should provide proper clinical and technical support team to support the system.
### Accessories: Complete with standard accessories. Operating manual, Services manual, error code book, part list and software if any

### Optional: Nil

### Warranty: Two year with all spare parts, during warranty firm should maintain equipments and done PPM as per principle recommendation. If any spare part required during installation or PPM will be responsibility of the firm. Firm must send annual PPM schedule with installation report.

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<td>56</td>
<td>Medical and lab Equipment</td>
<td>Cryoblation system for RF</td>
<td>01</td>
<td></td>
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</table>

**Technical specification:**

**HARDWARE FEATURES:**
- 12 ECG channels, 84 Intracardiac channels, 6 Auxiliary (pressure) channels
- Integrated 2 channel stimulator
- Stimulation on any intracardiac channel, Optically isolated patient connections.

**SOFTWARE FEATURES:**
- Windows 2000/XP/07/08 or any Basket catheter mapping
- Split screen with triggering on last stimulus
- Beat to beat triggered display
- Pace mapping
- Continuous storage on harddisk
- Event log
- Fast LaserJet printing.

**TECHNICAL SUMMARY:**
- Dynamic range: 20 bits
- Sample rate: 1 kHz / channel
- USB 1.1 and 2.0 compliant
- AC adapter 90-240VAC 50/60Hz

**Accessories:** Standard

### Optional:

### Warranty:

Two year with all spare parts, during warranty period firm should maintain equipments and done PPM as per principle recommendation. If any spare part required during installation or PPM will be responsibility of the firm. Firm must send annual PPM schedule with installation report.

### Note:

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<tbody>
<tr>
<td>57</td>
<td>Medical and lab Equipment</td>
<td>Intra cardiac Echocardiography</td>
<td>01</td>
<td>Used in EP department</td>
</tr>
</tbody>
</table>

**Technical specification:**

- Real-time imaging streamlines procedures.
- Premium image quality provides crisp, clear images of anatomical structures.
- Software-based ultrasound console allows for rapid upgrades providing the most up-to-date image quality.
- On-screen menus and displays help guide clinicians through the imaging process.
- Presets and soft keys allow clinicians to save and retrieve settings effortlessly.
- System recognition of transducer parameters optimizes menu displays, simplifying the learning curve.
- Rapid boot-up time reduces time to begin procedures.

**Imaging modes:**
- 2-Dimensional
- M-mode
- Pulsed wave (PW)
- Tissue Doppler imaging
- Continuous wave (CW)
- Color Doppler

**Accessories:** Standard

### Optional:

1. transducer
The phased array (4-1 MHz) transducer is designed to address adult echocardiography, transcranial and abdominal vascular imaging. 16 frequencies within 2-D and M-mode, tissue harmonics, color/power, PW Doppler, compound harmonics and compound imaging. Up to 30 cm penetration.

**2. trans esophageal (TEE) transducer**

The Multiplan phased array transducer, imaging modes for M-mode, color Doppler, PW, TDI (tissue Doppler imaging) and CW imaging. Three 2-D frequencies, two color Doppler frequencies and one spectral Doppler frequency. The intended application is for adult imaging. Requires.

**3. continuous wave transducer**

The continuous wave (2 MHz), non-imaging pencil probe is used for cardiac imaging.

**4. linear transducer**

The linear array (8-3 MHz) transducer, for peripheral vascular imaging. 12 frequencies, including three frequencies for 2-D and M-mode, two for tissue harmonics, one for compound harmonics, and two each for color/power and PW Doppler.

**5. ECG accessory cable**

Used to plug into the ECG monitoring device to capture patient ECG.

---

**Warranty**: Two year with all spare parts, during warranty period firm should maintain equipments and done PPM as per principle recommendation. If any spare part required during installation or PPM will be responsibility of the firm. Firm must send annual PPM schedule with installation report.

**Note**: General specification, If any firm have any query about specification, must visit at biomedical department in office timing (8am to 2pm) before one week of opening date of tender. Firm should quote their latest model. Firm should provide specification comparative along with technical bid with references of Data sheet or other authentic documents. Demonstration is essential.

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**Sr. No 58**

**Clinical Specialty**: Medical and lab Equipment

**Generic Name**: Co-57 flood source

**Quantity**: 01

**Clinical purpose**: Used for daily QC of Gamma camera.

**Technical specification**: (Eckert & Ziegler Germany product cat no. CTRF10017). Co-57, 10mCi, Rectangular Flood Src w/ProKem Tech Transparent Flood Source. Active dimensions: 410 mm x 260 Overall dimensions: 445 x 375 x 8 mmCE-marked Activity tolerance: +/- 15%

**Accessories**: Operating manual, Services manual, error code book, part list and software if any.

**Optional**:

**Warranty**: Two year with all spare parts, during warranty period firm should maintain equipments and done PPM as per principle recommendation. If any spare part required during installation or PPM will be responsibility of the firm. Firm must send annual PPM schedule with installation report.

**Note**: General specification, If any firm have any query about specification, must visit at biomedical department in office timing (8am to 2pm) before one week of opening date of tender. Firm should quote their latest model. Firm should provide specification comparative along with technical bid with references of Data sheet or other authentic documents. Demonstration is essential.

---

**Sr. No 59**

**Clinical Specialty**: Medical and lab Equipment

**Generic Name**: Co-57 point source

**Quantity**: 01

**Clinical purpose**: Single-encapsulated stainless steel point source. ISO rating: C66444. 1mCi = 37MBq. Part#CO738070001M.

**Accessories**: Operating manual, Services manual, error code book, part list and software if any.

**Optional**:

**Warranty**: Two year with all spare parts, during warranty period firm should maintain equipments and done PPM as per principle recommendation. If any spare part required during installation or PPM will be responsibility of the firm. Firm must send annual PPM schedule with installation report.

**Note**: General specification, If any firm have any query about specification, must visit at biomedical department in office timing (8am to 2pm) before one week of opening date of tender. Firm should quote their latest model. Firm should provide specification comparative along with technical bid with references of Data sheet or other authentic documents. Demonstration is essential.

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**Sr. No 60**
<table>
<thead>
<tr>
<th>Clinical Specialty</th>
<th>Medical and lab Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generic Name</td>
<td>Contamination Probe</td>
</tr>
<tr>
<td>Quantity</td>
<td>01</td>
</tr>
<tr>
<td>Clinical purpose</td>
<td>Used in hot lab with survey meter RDS 31.</td>
</tr>
</tbody>
</table>

**Technical specification:** radiation detection: gamma-, beta- and alpha-rays

- energy range: gamma > 6 keV, beta max > 50 keV, and alpha > 1 eV
- detector type: halogen quenched GM tube
- Approximate measurement range: 0 - 10 000 cps
- end window active area: 15.5 cm2 (6.1 in²); window thickness: 1.5 - 2 mg/cm2
- sensitivity: 2.8 cps for uniform 90Sr/90Y source of 0.37 Bq/cm²
- retractable cord, length 800 mm - 2500 mm (31.50 in - 98.42 in)
- temperature range: operation: -25°C to +55°C (-13°F to +131°F); storage: -40°C to +70°C (-40°F to +158°F)
- humidity: 0 - 95% relative humidity, non-condensing
- “pancake” dimensions: 61 x 80 x 20 mm (2.4 x 3.14 x 0.78 in) total probe length 295 mm (11.6 in)

**Accessories:** Operating manual, Services manual, error code book, part list and software if any.

**Optional:**

**Warranty:** Two year with all spare parts, during warranty period firm should maintain equipments and done PPM as per principle recommendation. If any spare part required during installation or PPM will be responsibility of the firm. Firm must send annual PPM schedule with installation report.

**Note:** General specification, If any firm have any query about specification, must visit at biomedical department in office timing (8am to 2pm) before one week of opening date of tender. Firm should quote their latest model. Firm should provide specification comparative along with technical bid with references of Data sheet or other authentic documents. Demonstration is essential.

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<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Clinical Specialty</th>
<th>Medical and lab Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>61</td>
<td>Generic Name</td>
<td>Pocket dosimeter</td>
</tr>
<tr>
<td></td>
<td>Quantity</td>
<td>03</td>
</tr>
<tr>
<td></td>
<td>Clinical purpose</td>
<td>Used to measure instant radiation of individuals.</td>
</tr>
</tbody>
</table>

**Technical specification:** Radiological Characteristics

Radiation detected: - gamma and X-rays

- Detectors:
  - energy compensated si-Diode
- Measurement range:
  - dose: 1 μsv - 9.99 sv or 0.1 mrem - 999 rem –
  - dose rate: 5 μsv/h - 3 sv/h or 0.5 mrem/h - 300 rem/h
- Calibration:
  - better than ±5% (cs-137, 662 keV at 2 msv/h), Hp(10)
- Energy response:
  - Hp(10), 55 keV - 3 MeV, better than ±25%, up tp 6 MeV, better than ±35%

Dose rate linearity:
- better than ±15%, up to 3 sv/h (300rem/h)

**Functional Characteristics**

- Alarm thresholds:
  - six preset values each for integrated dose and dose rate, manually selectable by push-button
- Front panel push
  - button functions:
    - toggle between dose and dose rate display
    - switch On/OFF
    - chirp On/OFF
    - reset integrated dose
    - change alarm thresholds
    - activate battery test
- Audible alarms:
  - seven separate alarms, sound level typically better than 85 dBA at 30 cm
- integrated dose, dose rate, dose overflow, dose rate overflow at 3 sv/h or 300 rem/h
- low battery 1 and 2
- defect

**Power Requirement**
- 100-240VDC

**Reader communication:**
- by infrared through bottom part; by using ADR-1 Reader Head in combination with RADOs Pc software
**Reader and software for dosimeter configuration calibration or access control (Qty 1)**

**Accessories:** Operating manual, Services manual, error code book, part list and software if any.

**Optional:**

**Warranty:** Two year with all spare parts, during warranty period firm should maintain equipments and done PPM as per principle recommendation. If any spare part required during installation or PPM will be responsibility of the firm. Firm must send annual PPM schedule with installation report.

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<table>
<thead>
<tr>
<th>Sr. No 62</th>
<th>Clinical Specialty</th>
<th>Medical and lab Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Generic Name</strong></td>
<td>Syringe Pump (for nuclear)</td>
<td></td>
</tr>
<tr>
<td><strong>Quantity</strong></td>
<td>01</td>
<td></td>
</tr>
<tr>
<td><strong>Clinical purpose</strong></td>
<td>Used for patients to inject adenosine</td>
<td></td>
</tr>
</tbody>
</table>

**Technical specification:** Free flow protection. Automatic calculation of rate based on does increase in mg, microgram, mmol, weight and time related e.g microgram /kg/min.

**Accessories:** Operating manual, Services manual, error code book, part list and software if any.

**Optional:**

**Warranty:** Two year with all spare parts, during warranty period firm should maintain equipments and done PPM as per principle recommendation. If any spare part required during installation or PPM will be responsibility of the firm. Firm must send annual PPM schedule with installation report.

**Note:** General specification, If any firm have any query about specification, must visit at biomedical department in office timing (8am to 2pm) before one week of opening date of tender. Firm should quote their latest model. Firm should provide specification comparative along with technical bid with references of Data sheet or other authentic documents. Demonstration is essential.

<table>
<thead>
<tr>
<th>Sr. No 63</th>
<th>Clinical Specialty</th>
<th>Medical and lab Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Generic Name</strong></td>
<td>Lead syringe carrier</td>
<td></td>
</tr>
<tr>
<td><strong>Quantity</strong></td>
<td>03</td>
<td></td>
</tr>
<tr>
<td><strong>Clinical purpose</strong></td>
<td>Used for transportation of syringes and is made of stainless steel with 3 mm of lead.</td>
<td></td>
</tr>
</tbody>
</table>

**Technical specification:**

**Dimension :**
- I.D: 8.25” x 3” W x 2.9 h (21 x 7.6 x 7.4 cm)
- O.D: 9.5” 1 x 4.4 W x 3.5” h (24 x 11.2 x 8.9 cm)
- Lead shielding.
- Sides, top and bottom: 125” thick (0.32)
- Ends: 25” thick (0.64 cm)
- Weight: 11.3 Ib (5.1 kg)
- 001-181 shielded syringe carrier, small
- **Dimension :**
  - I.D: 8” x 1.9” W x 1.97 h (20.3 x 4.8 x 5 cm)
  - O. D: 9.25” 1 x 3.4” W x 2.6” h (23.5 x 8.6 x 6.6 cm)
- Lead Shielding:
  - Sides top and bottom: 125” thick (0.64cm)
  - weight: 7.5 Ib (3.4 kg)

**Accessories:** NIL

**Optional:**

**Warranty :**

Two year with all spare parts, during warranty period firm should maintain equipments and done PPM as per principle recommendation. If any spare part required during installation or PPM will be responsibility of the firm. Firm must send annual PPM schedule with installation report.

**Note:** General specification, If any firm have any query about specification, must visit at biomedical department in office timing (8am to 2pm) before one week of opening date of tender. Firm should quote their latest model. Firm should provide specification comparative along with technical bid with references of Data sheet or other authentic documents. Demonstration is essential.

<p>| Sr. No 64 | Clinical Specialty | Medical and lab Equipment |</p>
<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Clinical Specialty</th>
<th>Generic Name</th>
<th>Quantity</th>
<th>Clinical purpose</th>
<th>Technical specification</th>
<th>Accessories:</th>
</tr>
</thead>
<tbody>
<tr>
<td>65</td>
<td>Medical and lab Equipment</td>
<td>Radiwash liquid</td>
<td>2</td>
<td>(1 gallon) used for decontamination of radioactive contamination.</td>
<td>RADIACWASH has as a nature PH, contains no phosphates, Chromates, halids and and inert fillers. RADIACWASH is non-alkaline, non-corrosive, germicidal and biodegradable.</td>
<td>Optional:</td>
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<td></td>
<td>Warranty:</td>
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<td></td>
<td>Two year with all spare parts, during warranty period firm should maintain equipments and done PPM as per principle recommendation. If any spare part required during installation or PPM will be responsibility of the firm.</td>
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<td></td>
<td>Ffirm must send annual PPM schedule with installation report.</td>
<td>Note:</td>
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<td>Note: General specification, If any firm have any query about specification, must visit at biomedical department in office timing (8am to 2pm) before one week of opening date of tender. Firm should quote their latest model. Firm should provide specification comparative along with technical bid with references of Data sheet or other authentic documents. Demonstration is essential.</td>
<td></td>
</tr>
<tr>
<td>66</td>
<td>Medical and lab Equipment</td>
<td>Mobile Lead Barrier</td>
<td>1</td>
<td>Used to protect the personnel’s from radiation during examination of patients.</td>
<td>The shields are to be made of 2mm lead between the two solid core plates. Dimensions: Overall (w x h ) cm 106 x 113. Lead : (w x h) cm (100 x 100) (Approx.)</td>
<td>Nil</td>
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<td>Optional:</td>
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<td>Two year with all spare parts, during warranty period firm should maintain equipments and done PPM as per principle recommendation. If any spare part required during installation or PPM will be responsibility of the firm.</td>
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<td>Ffirm must send annual PPM schedule with installation report.</td>
<td>Note:</td>
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<td>Note: General specification, If any firm have any query about specification, must visit at biomedical department in office timing (8am to 2pm) before one week of opening date of tender. Firm should quote their latest model. Firm should provide specification comparative along with technical bid with references of Data sheet or other authentic documents. Demonstration is essential.</td>
<td></td>
</tr>
<tr>
<td>67</td>
<td>Medical and lab Equipment</td>
<td>Printer color for GAMMA (Dicom compatible)</td>
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</tbody>
</table>

**Generic Name**: Lead Bin waste container

**Quantity**: 01

**Clinical purpose**: With a lid operated by a foot pedal and made of stainless steel with 6mm lead.

**Technical specification:**
- Lead shielding: 6mm
- Dimensions (L x W x H): 280 x 280 x 410 mm
- Opening from floor: 460 mm high
- Capacity: ca. 32 litre
- Lead shielding: 6 mm pb

**Accessories**:
- Optional:

**Warranty**:
- Two year with all spare parts, during warranty period firm should maintain equipments and done PPM as per principle recommendation. If any spare part required during installation or PPM will be responsibility of the firm. Firm must send annual PPM schedule with installation report.

**Note**: General specification, If any firm have any query about specification, must visit at biomedical department in office timing (8am to 2pm) before one week of opening date of tender. Firm should quote their latest model. Firm should provide specification comparative along with technical bid with references of Data sheet or other authentic documents. Demonstration is essential.
<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Clinical Specialty</th>
<th>Generic Name</th>
<th>Quantity</th>
<th>Clinical purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>68</td>
<td>Medical and lab Equipment</td>
<td>Printer for Dose calibrator (Hot Lab)</td>
<td>01</td>
<td>Used to print reports of dose calibrator.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Technical specification: Dose Calibrator (VDC-405 Version 3.31, VeenstraInstruments) or equivalent. HP LaserJetP3015 or equivalent</td>
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<td></td>
<td></td>
<td>Optional:</td>
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<td></td>
<td></td>
<td></td>
<td>Two year with all spare parts, during warranty period firm should maintain equipments and done PPM as per principle recommendation. If any spare part required during installation or PPM will be responsibility of the firm. Firm must send annual PPM schedule with installation report.</td>
</tr>
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<td></td>
<td>Note: General specification, If any firm have any query about specification, must visit at biomedical department in office timing (8am to 2pm) before one week of opening date of tender. Firm should quote their latest model. Firm should provide specification comparative along with technical bid with references of Data sheet or other authentic documents. Demonstration is essential.</td>
</tr>
</tbody>
</table>

**Sr. No 69**

<table>
<thead>
<tr>
<th>Clinical Specialty</th>
<th>Medical and lab Equipment</th>
<th>Generic Name</th>
<th>Quantity</th>
<th>Clinical purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>CPET VO₂ Max</td>
<td>01</td>
<td>VO₂ max (also maximal oxygen consumption, maximal oxygen uptake, peak oxygen uptake or maximal aerobic capacity) is the maximum rate of oxygen consumption measured during incremental exercise.[1][2] The name is derived from V - volume, O₂ - oxygen, max - maximum. Maximal oxygen consumption reflects the cardiorespiratory fitness of an individual and is an important determinant of their endurance capacity during prolonged exercise.</td>
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<tr>
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<td></td>
<td></td>
<td></td>
<td>Technical specification:</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>CPET specifically for cardiopulmonary exercise testing, exercise intensity, and exercise range fullspirometry, (O₂, CO₂.) gases, MET, nutrition and vital measurement at rest and during exercise.</td>
</tr>
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<td></td>
<td>Breath-by-breath technology for measurement of Flow/ Volume, O₂, CO₂ and HR.</td>
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<td></td>
<td>Flow/ Volume measurement by turbine digital method.</td>
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<td></td>
<td></td>
<td>O₂ measurement by electro magnetic cell.</td>
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<td></td>
<td></td>
<td></td>
<td>O₂ range adjustable</td>
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<tr>
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<td></td>
<td></td>
<td></td>
<td>Bidirectional synchronization between pulmonary and cardiac modules.</td>
</tr>
<tr>
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<td></td>
<td></td>
<td>Universal interface for control of complete system.</td>
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<tr>
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<td></td>
<td>Maximal oxygen uptake (VO₂max) and measured METs.</td>
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<td></td>
<td>Classification of Exercise Capacity &amp; Anaerobic Threshold</td>
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<td></td>
<td></td>
<td>Nutritional Assessment and resting VO₂</td>
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<td></td>
<td>Full Spirometry (FVC, SVC, MVV, etc.)</td>
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<td></td>
<td></td>
<td>Multiple scores for Cardiovascular and Pulmonary Risk analysis</td>
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<td>Preconfigured special workload ramp profile to perform pre-operative assessment tests.</td>
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<td></td>
<td>Real time presentation of pre-operative assessment data.</td>
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<td></td>
<td>Special masks in different sizes ensure high wearing comfort.</td>
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<td></td>
<td></td>
<td></td>
<td>Extremely durable easy to handle high resolution sensor.</td>
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<td></td>
<td>Professional calibration kit.</td>
</tr>
</tbody>
</table>
12 lead ECG with reusable vacuum electrode application system.
High-resolution pace maker detection.
Simultaneous 12 lead ST segment monitoring during stress test.
Integration of automatic blood pressure measurement and SpO2.
additional features Cardio Pulmonary Exercise Testing
Cardiorespiratory Fitness (VO2max) Anaerobic Threshold (AT)
HR interface w/ external ECG
Indirect Cardiac Output
VO2/HR Training Zones (based on AT)
Exercise Intensity for Cardiac Rehabilitation
Weight Management Program (Energy Balance)
Physical Activity Monitoring (integration with accelerometer)
Diet Software w/ Weekly Meal Planner
complete system with standard accessories and CPET compatible with cardiac ergometer, cardiac treadmill and
free exercise monitoring.
equipment with more advance specification will be preferred
end user principal training of the equipment.

Accessories: Complete with standard accessories, Operating manual, Services manual, error code book, part list and software if any.

Optional:

Warranty: Two year with all spare parts, during warranty period firm should maintain equipments and done PPM as per principle recommendation. If any spare part required during installation or PPM will be responsibility of the firm. Firm must send annual PPM schedule with installation report.

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Sr. No 70

Clinical Specialty | Medical and lab Equipment
--- | ---
Generic Name | Bedside Compression Device
Quantity | 08

Clinical purpose | By mimicking the natural action of the ambulatory calf and/or foot pumps, Intermittent Pneumatic Compression (IPC) moves the blood in the deep veins of the leg reducing the risk of DVT formation.

Technical specification:
- Power supply: 230 Vac, 50-60 Hz
- Maximum mains power absorption: 150 VA
- LCD display: B/W 320 x 240 pixel
- Programmable treatment time: up to 60 minutes
- Number of pneumatic sectors (output): 9
- Air capacity of the compressor: 25 lt/min
- Compressor power: 106 VA
- Maximum pressure delivered by the compressor: 3.5 atm
- Maximum current absorbed by the compressor: 0.45 A
- Maximum pressure: 0 - 150 mm Hg
- Stored protocols: 21
- Storable protocols in the user memory: 100
- Storable protocols in the smart-card: 100

Approved and authorized for medical use ideal for Physiotherapy and cardio respiratory rehabilitation User interface must be user friendly compression adjustable auto/manual as per requirement high level of safety

Country of origin: USA/EUROPE/JAPAN

Accessories:
1 x Power cable
2 x Fuses
1 x Smart Card
1 x Kit for lower limbs 9 sector
1 x Kit for upper limbs 7 sector
Complete with standard accessories, Operating manual, Services manual, error code book, part list and software if any.

Optional:

Warranty: Two year with all spare parts, during warranty period firm should maintain equipments and done PPM as per
principle recommendation. If any spare part required during installation or PPM will be responsibility of the firm. Firm must send annual PPM schedule with installation report.

<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Clinical Specialty</th>
<th>Generic Name</th>
<th>Quantity</th>
<th>Clinical Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>71</td>
<td>Medical and lab Equipment</td>
<td>Stairs Rehabilitation</td>
<td>02</td>
<td>Physical Therapy &amp; Rehabilitation Stairs. One of the more difficult types of movement for those in physical therapy to recover is sloped movement, whether it be on stairs or ramps. It uses different muscles than regular walking and needs to be specially exercised.</td>
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<td></td>
<td></td>
<td></td>
<td>Technical specification:</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>3 corner stair case</strong></td>
</tr>
<tr>
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<td></td>
<td>Module intended for use with three staircases that can be chosen from among three alternatives: low, high steps, and a ramp. A combined structure is created.</td>
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<td>The staircase rehabilitation program makes use of a system consisting of a set of raised platforms and staircases, made up of a painted steel framework, with wear-proof bi-laminated wooden steps and platforms, and thermoplastic non-slip handrails. All parts can be easily washed.</td>
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<td>Max dimensions: 106 x 87 x 138 cm</td>
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<td>Staircase and platform capacity: 180Kg</td>
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<td></td>
<td></td>
<td></td>
<td>Single handrail capacity: 135Kg</td>
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<td></td>
<td>Approved and authorized for medical use, Stairs ideal for Physiotherapy and cardio vascular rehabilitation, User interface must be user friendly, multiple levels of resistance, speed self-generating , compatible with Telemetry , Contact Heart rate, Dual-action total body motion, high level of safety</td>
</tr>
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<td></td>
<td></td>
<td>Accessories: Complete with standard accessories, Operating manual, Services manual, error code book, part list and software if any.</td>
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<td></td>
<td></td>
<td>Optional: Warranty: Two year with all spare parts, during warranty period firm should maintain equipments and done PPM as per principle recommendation. If any spare part required during installation or PPM will be responsibility of the firm. Firm must send annual PPM schedule with installation report.</td>
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<td></td>
<td>Note: Generalize specification, If any firm have any query about specification, must visit at biomedical department in office timing (8am to 2pm) before one week of opening date of tender. Firm should quote their latest model. Firm should provide specification comparative along with technical bid with references of Data sheet or other authentic documents. Demonstration is essential.</td>
</tr>
<tr>
<td>72</td>
<td>Medical and lab Equipment</td>
<td>Rehabilitation Steps</td>
<td>01</td>
<td>Physical Therapy &amp; Rehabilitation steps. One of the more difficult types of movement for those in physical therapy to recover is sloped movement, whether it be on stairs or ramps. It uses different muscles than regular walking and needs to be specially exercised.</td>
</tr>
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<td></td>
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<td></td>
<td>Technical specification:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>3 corner steps</strong></td>
</tr>
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<td></td>
<td></td>
<td>Module intended for use with three staircases that can be chosen from among three alternatives: low, high steps, and a ramp. A combined structure is created.</td>
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<td></td>
<td>The staircase rehabilitation program makes use of a system consisting of a set of raised platforms and staircases, made up of a painted steel framework, with wear-proof bi-laminated wooden steps and platforms, and thermoplastic non-slip handrails. All parts can be easily washed.</td>
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<td></td>
<td>Max dimensions: 106 x 87 x 138 cm</td>
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<td></td>
<td></td>
<td>Staircase and platform capacity: 180Kg</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Single handrail capacity: 135Kg</td>
</tr>
</tbody>
</table>
Approved and authorized for medical use, Steps ideal for Physiotherapy and cardio respiratory rehabilitation, User interface must be user friendly, multiple levels of resistance with interdependence of steps speed self-generating compatible with Telemetry. Contact Heart rate Dual-action total body motion, high level of safety

**Accessories:**
- 1 x Long Step stairs
- 1 x Short step stairs
- 1 x Ramp Case

Complete with standard accessories, Operating manual, Services manual, error code book, part list and software if any.

**Optional:**

**Warranty:**
Two year with all spare parts, during warranty period firm should maintain equipments and done PPM as per principle recommendation. If any spare part required during installation or PPM will be responsibility of the firm. Firm must send annual PPM schedule with installation report.

**Note:** Generalize specification, If any firm have any query about specification, must visit at biomedical department in office timing (8am to 2pm) before one week of opening date of tender. Firm should quote their latest model. Firm should provide specification comparative along with technical bid with references of Data sheet or other authentic documents. Demonstration is essential.

**Sr. No 73**

<table>
<thead>
<tr>
<th>Clinical Specialty</th>
<th>Medical and lab Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Generic Name</strong></td>
<td>6 min Walk test with portable Spirometry</td>
</tr>
<tr>
<td><strong>Quantity</strong></td>
<td>02</td>
</tr>
<tr>
<td><strong>Clinical purpose</strong></td>
<td>6MWT allows full assessment of ventilation limitation due to dynamic hyperinflation and air trapping in patients with pulmonary disease.</td>
</tr>
</tbody>
</table>

**Technical specification:** Approved and authorized for medical uses six minute walk test with portable Spirometry ideal for cardiopulmonary testing with minimum following features, Exercise capacity, oxygen saturation and minute ventilation (VE) during the Six-Minute Walk Test (6MWT), Inspiratory capacity measurement for dynamic hyperinflation assessment, Integrated SpO2 monitor, Full Spirometry testing (FVC, SVC, MVV, Pre-Post BD), Provided with software for data management, real time testing and interpretation on PC.

**Accessories:** Complete with standard accessories, software, Operating manual, Services manual, error code book, part list and software if any.

**Optional:** Nil

**Warranty:** Two year with all spare parts, during warranty period firm should maintain equipments and done PPM as per principle recommendation. If any spare part required during installation or PPM will be responsibility of the firm. Firm must send annual PPM schedule with installation report.

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**Sr. No 74**

<table>
<thead>
<tr>
<th>Clinical Specialty</th>
<th>Medical and lab Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Generic Name</strong></td>
<td>Upper limb Ergo meter</td>
</tr>
<tr>
<td><strong>Quantity</strong></td>
<td>01</td>
</tr>
</tbody>
</table>
| **Clinical purpose** | An upper body ergometer, commonly referred to as a UBE in physical therapy clinics, is a piece of exercise equipment which is like a bicycle that you pedal with your arms. An ergometer is an exercise machine that can measure the work of human muscles. The UBE is an ergometer that can measure how much work your upper body muscles are doing. Settings can be adjusted on the UBE to control resistance to change the amount of work that your upper body muscles are doing. Typical UBE machines have an adjustable seat, and many allow you to also use the machine while standing.

**Technical specification:**
Upper limbs ergometer with high stability and numerous adjustment options. The seat should be depth-adjustable and can be removed if exercises need to be performed from standing or in a wheelchair or on a different seat. The arm of the handles’ fulcrum of rotation can be height adjusted from 78 to 128 cm.
and the handles’ length can also be adjusted. Provided with casters for any necessary transfer. Chest strap for heart rate monitoring should be included.

**Console description**

- Touchscreen 10” display showing heartbeat, calories, charts and key function;
- 10 pre-set exercise profiles;
- 100 free profiles with Watt and time setting for each step;
- 4 preset tests - 14 storable tests;
- Personal user exercises are storable on USB memory;
- Remote use by RS232;
- Decreasing workout programming for exercise duration, distance or calories to burn;
- Possibility of constant pulse rate training, with automatic workload adjustment.

Max user weight: 180 kg

<table>
<thead>
<tr>
<th>Accessory</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Console</strong></td>
<td>touchscreen 10”</td>
</tr>
<tr>
<td><strong>Adjustable constant resistance</strong></td>
<td>from 0 to 600 Watt</td>
</tr>
<tr>
<td><strong>Transmission</strong></td>
<td>belt driven</td>
</tr>
<tr>
<td><strong>Resistance system</strong></td>
<td>electronic</td>
</tr>
<tr>
<td><strong>Workload increment</strong></td>
<td>1 Watt</td>
</tr>
<tr>
<td><strong>Interface type</strong></td>
<td>RS232 port</td>
</tr>
<tr>
<td><strong>Power supply</strong></td>
<td>230 V AC - 50÷60Hz</td>
</tr>
</tbody>
</table>

**Accessories:** Complete with standard accessories, software, Operating manual, Services manual, error code book, part list and software if any.

**Optional:** Nil

**Warranty:**

Two year with all spare parts, during warranty period firm should maintain equipments and done PPM as per principle recommendation. If any spare part required during installation or PPM will be responsibility of the firm. Firm must send annual PPM schedule with installation report.

**Note:** Generalize specification, If any firm have any query about specification, must visit at biomedical department in office timing (8am to 2pm) before one week of opening date of tender. Firm should quote their latest model. Firm should provide specification comparative along with technical bid with references of Data sheet or other authentic documents. Demonstration is essential

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**Sr. No 75**

<table>
<thead>
<tr>
<th>Clinical Specialty</th>
<th>Medical and lab Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Generic Name</strong></td>
<td>Trade Mil Cardiac</td>
</tr>
<tr>
<td><strong>Quantity</strong></td>
<td>02</td>
</tr>
<tr>
<td><strong>Clinical purpose</strong></td>
<td>A treadmill exercise stress test is used to determine the effects of exercise on the heart. Exercise allows doctors to detect abnormal heart rhythms (arrhythmias) and diagnose the presence or absence of coronary artery disease</td>
</tr>
</tbody>
</table>

**Technical specification:**

The professional treadmill for rehabilitation use that should be ideal for health care facilities and large physiotherapy units, with following functions:

- Speed and incline adjustment.
- Liquid crystal display indicating heart rate, speed, time, distance and incline.

**PROFILES:**

- 10 basic profile that can be modified by varying speed, incline and time separately;
- 100 free profiles with the option to set time, tilt and speed for each of the 20 steps;

**CARDIO:**

Cardio exercise is a constant pulse rate training (until reaching 80% of one’s maximum theoretical heart rate), the machine should automatically adjust the speed level so the heart beat remains within the set maximum heart rate;

**FOUR TESTS:**

Two auto tests – CHR (Constant Heart Rate) and CWL (Constant Work Level) – allow you to exercise at a constant heart rate and load. The third test, i.e. RUNNER TEST, allows you to exercise with an increasing load by stepping up the speed by 1 km/h per minute. The fourth test, i.e. COOPER TEST, allows you to exercise for 12 minutes and assess the maximum distance covered.

| User Weight                  | 250kg or more                  |
| Walking deck                 | 154 x 70cm                     |
| Console                      | Touchscreen 10”                |
| Max Workout speed            | 20 km/h                        |
| Min constant workout speed   | 0.1 km/h                       |
| Max reverse motion speed     | 0 - 5 km/h                     |
| Speed increments             | 0.1 km/h                       |
| Incline                      | 0% to 30%                      |
Emergency stop: Button and pull-wire
Incline and speed change: Electronic
Self-centering belt alignment system: Yes
Self-lubricating belt system: Yes
Max peak motor: 7 HP (AC)
Inverter drive: Yes
Power supply: 220/240 V - 50-60 Hz - 12 Amp
Rated input power: 2500 VA
Sound power: < 30 dB
Shock absorbing table: Yes
Serial interface with Trackmaster protocol: Yes
Transport wheels: Yes
Output: RS232

Approved and authorized for medical use, Treadmill ideal for Physiotherapy and cardiovascular rehabilitation, Auto/manual speed with touch screen display Functional Exercise Programmers, The Treadmill meets the medical guidelines and guarantees medically responsible therapy and a high degree of safety, compatible for telemeter system.

Accessories: Complete with standard accessories, software, Operating manual, Services manual, error code book, part list and software if any.

Optional:

Warranty: Two year with all spare parts, during warranty period firm should maintain equipments and done PPM as per principle recommendation. If any spare part required during installation or PPM will be responsibility of the firm. Firm must send annual PPM schedule with installation report.

Note: Generalize specification, If any firm have any query about specification, must visit at biomedical department in office timing (8am to 2pm) before one week of opening date of tender. Firm should quote their latest model. Firm should provide specification comparative along with technical bid with references of Data sheet or other authentic documents. Demonstration is essential

Sr. No 76
Clinical Specialty Medical and lab Equipment
Generic Name Physiology standing table/tilt table
Quantity 01

Clinical purpose IT is a medical procedure often used to diagnose dysautonomia or syncope. Patients with symptoms of dizziness or lightheadedness, with or without a loss of consciousness (fainting), suspected to be associated with a drop in blood pressure or positional tachycardia are good candidates for this test.

Technical specification:
Three-section tilt table for therapy in the supine position, for up to 140 kg. Up to 90° tilt, electric version, 24V low voltage, and operated by hand control. Should be fitted with tilt angle indicator; height from ground should be 56 cm. Transport should be made easier by the wide diameter, braked casters, one of them should be directional. Footboards can be independently adjustable by +/- 20°.

Specifications:
Number of sections: 3
Maximum safe working load (kg): 140
Tilt adjustment: electrical
Power supply: 220 VAC
Tilt indicator in degrees: standard
Table height from the floor (cm): 56
Maximum user height (cm): 200
Caster diameter (mm): 125
Individual brake system: on each single wheel
Steering wheel: standard
Padding thickness (mm) / density (kg/m3): 30 / 30

Approved and authorized for medical use, table ideal for neuro rehabilitation User interface must be user friendly, multiple levels of tilting, electric control, high level of safety complete with standard accessories

Accessories: Complete with standard accessories, software, Operating manual, Services manual, error code book, part list and software if any.

Optional:

Warranty: Two year with all spare parts, during warranty period firm should maintain equipments and done PPM as per principle recommendation. If any spare part required during installation or PPM will be responsibility of the firm. Firm must send annual PPM schedule with installation report.

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<tr>
<th>Sr. No</th>
<th>Clinical Specialty</th>
<th>Generic Name</th>
<th>Quantity</th>
<th>Clinical Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>77</td>
<td>Medical and lab Equipment</td>
<td>Recumbent bike</td>
<td>02</td>
<td>Used in exercise for DCM patients.</td>
</tr>
<tr>
<td></td>
<td><strong>Technical specification:</strong></td>
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<tr>
<td></td>
<td>Max user weight:</td>
<td>180 kg</td>
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<tr>
<td></td>
<td>Console:</td>
<td>touchscreen 10”</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Adjustable constant resistance:</td>
<td>0 to 600 Watt</td>
<td></td>
<td></td>
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<td></td>
<td>Workload increment:</td>
<td>1 Watt</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Max speed:</td>
<td>130 rpm</td>
<td></td>
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<tr>
<td></td>
<td>Transport wheels:</td>
<td>yes</td>
<td></td>
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<tr>
<td></td>
<td>Transmission:</td>
<td>belt driven</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Resistance system:</td>
<td>electronic</td>
<td></td>
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<tr>
<td></td>
<td>Workload adjustment:</td>
<td>electronic</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Interface type:</td>
<td>RS232 port</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Seat adjustment:</td>
<td>adjustable in depth</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Power supply:</td>
<td>230 V AC - 50÷60 Hz</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Approved and authorized for medical use. Bicycle ideal for physiotherapy and cardiovascular rehabilitation User interface must be user friendly multiple level of resistance Speed self-generating adjustable seat arm support and back support Compatible with telemetry Smooth and noise free High level of safety Complete with stranded</td>
<td></td>
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<tr>
<td></td>
<td><strong>Accessories:</strong> Complete with standard accessories, software Operating manual, Services manual, error code book, part list and software if any.</td>
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<td></td>
<td>Optional:</td>
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<td></td>
<td>Warranty:</td>
<td>Two year with all spare parts, during warranty period firm should maintain equipments and done PPM as per principle recommendation. If any spare part required during installation or PPM will be responsibility of the firm. Firm must send annual PPM schedule with installation report.</td>
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<td>Note:</td>
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<tr>
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<th>Generic Name</th>
<th>Quantity</th>
<th>Clinical Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>78</td>
<td>Medical and lab Equipment</td>
<td>Latitude / Lateral stability trainer</td>
<td>01</td>
<td>The Latitude Lateral Stability Trainer uses an innovative motion to help people of all fitness levels build the muscles— and confidence— to stay active in an easy-to-use, engaging way. It allows users to exercise in a recumbent position and strengthens stabilization muscles by activating firing patterns missed by sagittal plane exercisers</td>
</tr>
<tr>
<td></td>
<td><strong>Technical specification:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Approved and authorized for medical use for lateral stability exercises bicycle ideal for Physiotherapy and cardiovascular rehabilitation User interface must be user friendly multiple levels of resistance Speed self-generating, adjustable seat, arm support and back support, compatible with Telemetry, smooth and noise free, high level of safety</td>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td><strong>Accessories:</strong> Complete with standard accessories, software Operating manual, Services manual, error code book, part list and software if any.</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Optional:</td>
<td>Nil</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Note:</td>
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<td>Warranty:</td>
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<tr>
<td>Sr. No 79</td>
<td>Clinical Specialty</td>
<td>Medical and lab Equipment</td>
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<tr>
<td>Generic Name</td>
<td>High Frequency chest wall oscillation (HFCWO)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quantity</td>
<td>01</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clinical purpose</td>
<td>HFCWO is defined by extra-thoracic oscillations generated by forces external to the respiratory system. External chest wall oscillations are applied using an inflatable vest around the torso attached to a machine which vibrates at variable frequencies and intensities, as set by the operator, to ensure the individual’s comfort and associated concordance.</td>
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</tbody>
</table>

**Technical specification:**
- Generator 35 lbs. (22"H x 14.5"W x 10.25"D)
- Stand 8 lbs. (17"H x 25" Diameter base)
- 5 legs with 2 locking casters and 3 non-locking caster
- Electrical 120V AC, 5 Amp, 60 Hz
  - Decibels 58 dB
  - Wrap Vest Sizing Chart
  - Size Chest Circumference
  - Small 23-33 inches
  - Medium >33-43 inches
  - Large >43-53 inches
  - X-Large >53-67 inches

**Accessories:** Complete with standard accessories, software, Operating manual, Services manual, error code book, part list and software if any.

**Optional:** Nil

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<table>
<thead>
<tr>
<th>Sr. No 80</th>
<th>Clinical Specialty</th>
<th>Medical and lab Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generic Name</td>
<td>Chest precursors</td>
<td></td>
</tr>
<tr>
<td>Quantity</td>
<td>01</td>
<td></td>
</tr>
<tr>
<td>Clinical purpose</td>
<td>hand-heldpercussor used in respiratory therapy applications.</td>
<td></td>
</tr>
</tbody>
</table>

**Technical specification:**
- Speed: 20 to 50 cycles per second (CPS)
- Portable, lightweight hand-held device
- Comfortable soft rubber hand grip
- Used as an adjunct for postural drainage
- Can be used with our Self Application Kit and Vari-Tilt body positioner
- Self Application Kit available separately
- Includes 4 micro applicators
- Should have durable, hand-held percussor used in respiratory therapy applications. Totally self-contained, and weighing less than three pounds, it provides optimal freedom of movement and portability with a ten foot hospital grade power cord. can be used with a variety of applicators and has a continuously-variable speed range of 20 - 50 cycles per second. This combination of applicators and speeds provides for a highly-versatile treatment range. Should have hand-held percussor/massager to be granted C.S.A.'s highest medical operational rating. With applicators 250, 251, 253 and 234.

**Accessories:** Complete with standard accessories, software, Operating manual, Services manual, error code book, part list
and software if any.

- Optional:


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**Warranty:**
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<th>Clinical Specialty</th>
<th>Generic Name</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>81</td>
<td>Medical and lab Equipment</td>
<td>4D Echo Machine</td>
<td>2</td>
</tr>
</tbody>
</table>

**TECHNICAL SPECIFICATIONS:**
A complete dedicated digital Echocardiography unit for wide range of premium performance application of cardiovascular imaging in pediatrics and adult. Built in workstation / data management system for digital acquisition, storage and review of complete ultrasound studies including static and dynamic clips in DICOM format, read/write zoom. Studies can be reviewed and output to CD / DVD/MOD. The machine must have sharp and high quality image reproduction with heavy duty performance. It should have minimum following specification: DISPLAY: High resolution 1280x1024 non interlaced, flicker free. Display size Min. 21” LCD TFT, tilt able and swiveable type. OPERATING MODES: B, 2D,4D Imaging, M-Mode, Power Doppler, HPRF, Spectral Doppler, Color Doppler, Velocity Mode, PW Doppler, Duplex And Triplex Doppler, CW Doppler Steerable and ECG Gating, Capable of Performing 4D View. CONTROL PANEL: Alphanumeric keyboard with built-in trackball. Direct access to system functions through dedicated keys. Indicator lights identify activated keys. Audio volume control with bidirectional / stereo speakers and foot switch User selectable image magnification control. Adjustable transmit focusing control. Total and Lateral Gran Compensation controls (6 or more). CALIPER / MEASUREMENTS: 6 to 8 calipers for measurement per screen trace length measurements for: Distance, angle, distance depth from skin line, area, circumferences, compound / volume, slope, time, heart rate and acceleration. APPLICATION: Cardiac, Peripheral, pediatric, adult cephalic and transesophageal with all required software for measurements. OPERATING MODES: 2D tissue, 2D angio flow, color M-Mode, tissue velocity M-mode, tissue strain imaging, disynchrony imaging, continuous wave Doppler, tissue m-mode, pulse wave Doppler, tissue velocity imaging, tissue tracking, tissue synchronization, blood flow imaging, blood flow angio flow imaging. DISPLAY MODES: Live and stored display format: full size and split screen. Review image format: for still and cine, simultaneous capability B+PW, B+ CFM/TVI+PW, CW, B+ or triplex mode, , B+ color split screen display.4 D scan, B+Color Screen display, Slice view Tissue Imaging,4D Mode, 2D mode, M-mode, color Doppler imaging, color flow imaging, color Doppler imaging, color angio, color mmode, blood flow imaging, blood flow angio imaging, tissue velocity imaging, tissue velocity imaging mode, tissue synchronization imaging mode, PW / HPRF Doppler, CW Doppler, LVO Contrast, Vascular / abdominal contrast, vascular calculations, cardiac measurements FRAME RATE (machine to be quoted with Maximum available frame rate) Min. 200fps in B-Mode and 100fps in Doppler mode. CINE MEMORY Min. Cine Memory for 1000 frames or 250mb min. IMAGE VIEWING DEPTH: 20 – 280 mm or more for cardiac application IMAGING MODES / TECHNIQUES: Tissue harmonic Imaging, Tissue Doppler Imaging, Color Angio, Tissue Velocity Imaging Tissue Imaging (Display real time Doppler shift information from moving tissue to better visualize and quantify myocardial function). Capability to display time difference in myocardial motion in color for CRT (Cardiac resynchronization therapy. Quantitative strain rate imaging (Doppler & speckle tracking rate): An advanced quantitative technique of Tissue Doppler Velocity. Strain rate is a measure of the contractile motion of myocardium. Auto-Tracking contrast quantification: quantitative technique for on-line assessment of contrast agent images. Contrast plus sequencing technology: a real time, low mechanical index, non-linear imaging technique for contrast agent examinations. The software should have the capability to show contrast agent only, tissue only or contrast and tissue displays. Contrast Harmonic Imaging capability. Vascular imaging software for carots with IMT measurement. STRESS ECHO Integrated multi stage stress echo system for advance and flexible stress echo Acquisition and measurement for LV B-Mode imaging. Quantitative analysis for contrast during stress. Examinations Used with TDI protocols. STORAGE DEVICE Built-in MOD/CD / DVD Drive WITH 10 DISKETTES SYSTEM DYNAMIC RANGE Dynamic range minimum 160 dB or more COMMUNICATION SOFTWARE System should conform to DICOM 3 communication software for: Image Storage, print, Query / Retrieve, Network Communication. Probes: Should be light weight, capable of multiple centre frequencies on transmit for 2D, color Doppler PW/CW (Steerable) Imaging and to perform Harmonics. PORTS: Video Output USB / RS 232
STANDARD TRANSDUCERS: Linear Probe multi frequency to cover frequency of 6.0-8.0 MHz. Multi frequency Phased array sector probe to cover 2.0/2.5 – 4.0MHz. Multi frequency Phased array sector probe to cover 5.0 – 8.0MHz. CW Pencil Probe Multilane TEE Transducer (3 – 6 MHz) for adults. Transthoracic /4D Volume probe Accessories: Digital Color Thermal Printer with 10 Packs of 100.. Online UPS for 30 min. backup time for complete unit including Printer.(Emerson, Liberty, Chloride, MGE &Riello) Digital B/W Thermal Printer with 50 rolls of papers. Jelly 20 L in bottles. Complete with standard accessories.


Optional:
1. Multilane TEE Transducer (4 – 6 MHz) for peads 4D TEE probe for adult or Paeds 4D quantification Procuring agency will specify & justify the imaging software.
2. Dedicated transthoracic 4D volume probe for pediatric scan 2-7 MHZ. The same probe can be used for routine 2D scan.
3. System should have compatible matrix probes with 9000 or more Probe Elements.
4. Pediatric TEE probe connectivity for less than 3.6 KG weight pediatric patient
5. Software, which automatically fusing live TEE and live fluoroscopic/Angiography images in real-time.

Warranty: Two year with all spare parts, during warranty period firm should maintain equipments and done PPM as per principle recommendation. If any spare part required during installation or PPM will be responsibility of the firm. Firm must send annual PPM schedule with installation report.

Note:specifications are approved from PVMS committee for Radiology Equipment’s. If any firm have any query about specification, must visit at biomedical department in office timing (8am to 2pm) before one week of opening date of tender. Firm should quote their latest model. Firm should provide specification comparative along with technical bid with references of Data sheet or other authentic documents. Demonstration is essential.
reservations, if any, in writing by which will be discussed in the meeting for appropriate decision.

10. In case the date of opening or last date of sale of tender documents is declared as a public holiday by the government or non-working day due to any reason, the next official working day shall be deemed to be the date of sale, submission and opening of tenders accordingly. The time and venue shall remain the same.

Executive Director
Rawalpindi Institute of Cardiology
Rawal Road, Rawalpindi

Performance Guarantee Form

To: [Name & Address of the Procuring Agency]

Whereas [Name of Supplier] (hereinafter called “the Supplier”) has undertaken, in pursuance of Contract No. [number] dated [date] to supply [description of goods] (hereinafter called “the Contract”).

And whereas it has been stipulated by you in the said Contract that the Supplier shall furnish you with a Bank Guarantee by a scheduled bank for the sum of 5% of the total Contract amount as a Security for compliance with the Supplier’s performance obligations in accordance with the Contract.

And whereas we have agreed to give the Supplier a Guarantee:
Therefore we hereby affirm that we are Guarantors and responsible to you, on behalf of the Supplier, up to a total of [Amount of the Guarantee in Words and Figures] and we undertake to pay you, upon your first written demand declaring the Supplier to be in default under the Contract and without cavil or argument, any sum or sums within the limits of [Amount of Guarantee] as aforesaid, without your needing to prove or to show grounds or reasons for your demand or the sum specified therein.

This guarantee is valid until the____________ day of_________, 201__

Signature and Seal of the Guarantors/Bank

Address

Date

Note: 1. It should be valid for a period equal to the warranty period.
2. The contract will be signed/issued after submission of this Performance Security.
3. The firm may submit the Performance Security for the Complete Package by the Lead Contractor or individually for the respective portions of the firms in case of alliance.
(Sample)
[See Clause 3.1 (a) of the Instruction to Bidders]  
To: [name of Procuring Agency]  

WHEREAS [name of the Manufacturer] who are established and reputable Manufacturers of [name and/or description of the goods] having factories at [address of factory] do hereby Exclusively authorize [name and address of Supplier/ Agent] to submit a bid, and subsequently negotiate and sign the Contract with you against IFB No. [reference of the Invitation to Bid] for the goods manufactured by us. We hereby extend our full guarantee and warranty as per Clause 15 of the General Conditions of Contract for the goods offered for supply by the above firm against this Invitation for Bids. We further undertake that the [name of supplier] is a sole agent /Exclusively authorized dealer for the territory of Health Department, Government of Punjab, Pakistan.

[Signature for and on behalf of Manufacturer]  

Note:  
1. This letter of authority should be on the letter head of the Manufacturer and should be signed by a person competent and having the power of attorney to bind the manufacturer.  
2. It should be included by the Bidder in its bid.  
3. The standard authorization letter without the declaration of Sole Distribution / Exclusive authorization by the manufacturer will not be considered and rejected Straight way.  
4. The non exclusive authorization letter is acceptable only in the case of general Machinery, IT equipment and minor nature of medical equipment where extensive after sales services is not required. In this particular case, the procuring agency need to Specify the requirement in the advertised specifications / tender.
THIS CONTRACT is made at __________ on __________day of ________2017, between the (hereinafter referred to as the “Procuring Agency”) of the First Part; and M/s (firm name) a firm having its registered office at (address of the firm) (hereinafter called the “Supplier”) of the Second Part (hereinafter referred to individually as “Party” and collectively as the “Parties”).

WHEREAS the Procuring Agency invited bids for procurement of goods, in pursuance where of M/s (firm name) being the Manufacturer/ authorized Supplier/ authorized Agent of (item name) in Pakistan and ancillary services offered to supply the required item (s); and Whereas the Procuring Agency has accepted the bid by the Supplier for the supply of (item name) and services in the sum of Rs (amount in figures and words) cost per unit, the total amount of (quantity of goods) shall be Rs (amount in figures and words) for free delivery items and/or unit price €/£/$/¥/CHF________ for the total price_______________ €/£/$/¥/CHF of the items of CIF portion for establishing the LC.

NOW THIS CONTRACT WITNESSETH AS FOLLOWS:

1. In this Contract words and expressions shall have the same meanings as are respectively assigned to them in the General Conditions of this Contract hereinafter referred to as “Contract”:

2. The following documents shall be deemed to form and be read and construed as integral part of this Contract , viz:-

   a. the Price Schedule submitted by the Bidder,
   b. the Schedule of Requirements;
   c. the Technical Specifications;
   d. the General Conditions of Contract;
   e. the Special Conditions of Contract;
   f. the Procuring Agency's Notification of Award;
   g. the scope of work;
   h. the Contract; and
   i. the Bid & its clarifications.
   j. the contracted specifications (attached as annexure)
   k. any undertaking provided by the firm

3. In consideration of the payments to be made by the Procuring Agency to the Supplier/ Manufacturer as hereinafter mentioned, the Supplier/ Manufacturer hereby covenants with the Procuring Agency to provide the Goods and Services and to remedy defects therein in conformity in all respects with the provisions of this Contract.

4. The Procuring Agency hereby covenants to pay the Supplier in consideration of the provision of the Goods and Services and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of this Contract at the time and in the manner prescribed by this Contract.

5. [The Supplier] hereby declares that it has not obtained or induced the procurement of any Contract, right, interest, privilege or other obligation or benefit form Government of the Punjab or any administrative subdivision or agency thereof or any other entity owned or controlled by it (Government of the Punjab) through any corrupt business practice.

6. Without limiting the generality of the foregoing, [the Seller/ Supplier] represents and warrants that it has fully declared the brokerage, commission, fees etc, paid or payable to anyone and not given or agreed to give and shall not give or agree to give to anyone within or outside Pakistan either directly or indirectly through any natural or juridical person, including its affiliate, agent, associate, broker, consultant, director, promoter, shareholder, sponsor or subsidiary, any commission, gratification, bribe, finder’s fee or kickback, whether described as consultation fee or otherwise, with the object of obtaining or including the procurement of a Contract, right interest, privilege or other obligation or benefit in whatsoever form from Government of the Punjab, except that which has been expressly declared pursuant hereto.

7. [The Supplier] certifies that has made and shall make full disclosure of all agreements and arrangements with all persons in respect of or related to the transaction with
Government of the Punjab and has not taken any action or shall not take any action to circumvent the above declaration, representation or warranty.

8. *[The Supplier]* accepts full responsibility and strict liability for making any false declaration, not making full disclosure, misrepresenting facts or taking any action likely to defeat the purpose of this declaration, representation and warranty. It agrees that any Contract, right, interest, privilege or other obligation or benefit obtained or procured as aforesaid shall, without prejudice to any other right and remedies available to Government of the Punjab under any law, Contract or other instrument, be voidable at the option of Government of the Punjab.

9. Notwithstanding any rights and remedies exercised by Government of the Punjab in this regard, *[The Supplier]* agrees to indemnify Government of the Punjab for any loss or damage incurred by it on account of its corrupt business practices and further pay compensation to Government of the Punjab in an amount equivalent to ten time the sum of any commission, gratification, bribe, finder’s fee or kickback given by *[The Seller/Supplier]* as aforesaid for the purpose of obtaining or inducing the procurement of any Contract, right, interest, privilege or other obligation or benefit in whatsoever form from Government of the Punjab.

10. In case of any dispute concerning the interpretation and/or application of this Contract shall be settled through arbitration. The decisions taken and/or award made by the arbitrator shall be final and binding on the Parties.

11. This Contract shall be governed by the laws of Pakistan and the courts of Pakistan shall have exclusive jurisdiction.

IN WITNESS Whereof the Parties hereto have caused this Contract to be executed at_________________(the place) and shall enter into force on the day, month and year first above mentioned.

Maj. Gen (R) Signature of Owner of Firm---------------------
Azhar Mahmood Kayani (HI) Name ---------------------------- --------------------
Executive Director Father Name------------------------------- ----
Rawalpindi Institute of Cardiology Designation --------------------------------------
Rawalpindi CNIC# ------------------------------------------

Witnessed By (Official): Witnessed By:
Signature_______________________ Signature_________________________
CNIC#__________________________ CNIC#___________________________
Name __________________________ Name ____________________________
Designation_____________________ Designation_______________________
Address________________________ Address__________________________

Note: 1. In case of alliance; all the firms have to sign this document jointly along with Procuring Agency, as all firms will bear equal responsibility in execution of the contract.
Bid Form

To: [Name and address of Procuring Agency]

Respected Sir

Having examined the Bidding Documents, the receipt of which is hereby duly acknowledged, we, the undersigned, offer the supply and deliver the goods specified in and in conformity with the said Bidding Documents for the sum of [Total Bid Amount], [Bid Amount in words] or such other sums as may be ascertained in accordance with the Schedule of Prices attached herewith and made part of this bid.

We undertake, if our bid is accepted, to deliver the goods in accordance with the delivery schedule specified in the Schedule of Requirements.

If our bid is accepted, we shall obtain an unconditional guarantee of a bank in the sum of ____ percent of the Contract Price for the due performance of the Contract, in the form prescribed by the Procuring Agency.

We agree to abide by this bid for a period of [number] days from the date fixed for bid opening under ITB Clause 18 of the Instructions to Bidders, and it shall remain binding upon us and may be accepted at any time before the expiration of that period. Until a formal Contract is prepared and executed, this bid, together with your written acceptance thereof and your notification of award, shall constitute a binding Contract between us.

We understand that you are not bound to accept the lowest or any bid you may receive. Commissions or gratuities, if any, paid or to be paid by us to agents relating to this Bid, and to contract execution if we are awarded the contract, are listed below:

<table>
<thead>
<tr>
<th>Name and address of bidder (if none, state “none”).”</th>
<th>Amount and Currency</th>
</tr>
</thead>
</table>

Dated this day of , 201-

Signature
(in the capacity of)

Duly authorized to sign bid for and on behalf of

Attachment
## Price Schedule

(CIF Tender)

**Name of Bidder**

---

**Tender No. and the name of the package/Tender**

---

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Name of Item (As listed in invitation of bid)</th>
<th>Make</th>
<th>Model</th>
<th>Country of Origin</th>
<th>Country of Manufacturer</th>
<th>Supplier</th>
<th>Name of Port of dispatch</th>
<th>Qty</th>
<th>Unit CIF Price (£/€/$/¥/CHF)</th>
<th>Total Price for each item (£/€/$/¥/CHF)</th>
<th>Name of beneficiary bank</th>
</tr>
</thead>
<tbody>
<tr>
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</tr>
</tbody>
</table>

---

**Total Package Cost after conversion (Rs.)**

---

**Sign and Stamp of Bidder**

---

**Note:**
1. In case of discrepancy between unit price and total, the unit price shall prevail.
2. Foreign currency rate will be considered on the date of opening of Financial Bid as per selling rate announced by the National/ State Bank.
# Price Schedule

(DDP Tender)

Name of Bidder

---

Tender No. and the name of the package/Tender

---

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Name of Item (As listed in invitation of bid)</th>
<th>Make</th>
<th>Model</th>
<th>Country of Origin</th>
<th>Country of Manufacturer</th>
<th>Supplier</th>
<th>Qty</th>
<th>Unit CIF Price (Rs)</th>
<th>Total Price for each item (Rs)</th>
</tr>
</thead>
<tbody>
<tr>
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</tr>
</tbody>
</table>

Total Package Cost

---

Sign and Stamp of Bidder

---

Note: In case of discrepancy between unit price and total, the unit price shall prevail.
(TEMPLATE)
BID EVALUATION SHEET

Package no/Tender Number:---------------------------------------------
Name of the Equipment and Qty:---------------------------------------------

PART- I

KNOCK DOWN CRITERIA - (COMMERCIAL EVALUATION)
(To be evaluated by Purchase Department)
(All evaluation parameters defined below are mandatory for compliance)

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Evaluation Parameters</th>
<th>M/S ABC</th>
<th>M/S XYZ</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Complete Package/Tender</td>
<td>Yes / No</td>
<td>Yes / No</td>
</tr>
<tr>
<td>2</td>
<td>Original Receipt of Tender</td>
<td>Yes / No</td>
<td>Yes / No</td>
</tr>
<tr>
<td>3</td>
<td>Affidavit from Bidder</td>
<td>Yes / No</td>
<td>Yes / No</td>
</tr>
<tr>
<td>4</td>
<td>Bid Security</td>
<td>Yes / No</td>
<td>Yes / No</td>
</tr>
<tr>
<td>5</td>
<td>Bid Validity</td>
<td>Yes / No</td>
<td>Yes / No</td>
</tr>
<tr>
<td>6</td>
<td>Delivery Period</td>
<td>Yes / No</td>
<td>Yes / No</td>
</tr>
</tbody>
</table>

Remarks: (Eligible/ Not Eligible for further evaluations of PART-II)
### PART-II

**KNOCK DOWN CRITERIA - (VENDOR EVALUATION)**  
(To be evaluated by Technical Evaluation Committee)  
(All evaluation parameters defined below are mandatory for compliance.)

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Evaluation Parameters</th>
<th>M/S ABC</th>
<th>M/S XYZ</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Exclusive Authorization / Sole Agent Certificate by the Manufacturer</td>
<td>Yes / No</td>
<td>Yes / No</td>
</tr>
<tr>
<td>2</td>
<td>Technical &amp; Engineering capability (As defined for the specific tender in specifications)</td>
<td>Yes / No</td>
<td>Yes / No</td>
</tr>
<tr>
<td>3</td>
<td>Certificate from the Manufacturer about the after sales services through agent or itself (In case specifically demanded in the specifications)</td>
<td>Yes / No</td>
<td>Yes / No</td>
</tr>
<tr>
<td>4</td>
<td>Vendor Past performance (In case of unsatisfactory performance, details must be mentioned)</td>
<td>Satisfactory / Unsatisfactory</td>
<td>Satisfactory / Unsatisfactory</td>
</tr>
<tr>
<td>5</td>
<td>Availability of relevant Tools and Testing / Calibration Equipment</td>
<td>Yes / No</td>
<td>Yes / No</td>
</tr>
<tr>
<td>6</td>
<td>Compliance of Warranty as per tender</td>
<td>Yes / No</td>
<td>Yes / No</td>
</tr>
</tbody>
</table>

**Remarks:**  
(Eligible/ Not Eligible for further evaluations of PART-III)  
(Eligible/ Not Eligible for further evaluations of PART-III)
PART – III

KNOCK DOWN CRITERIA - PRODUCT EVALUATION
(All evaluation parameters defined below are mandatory for compliance.)

<table>
<thead>
<tr>
<th>Item Sr.No</th>
<th>SPECIFICATION COMPLIANCE /EVALUATION PARAMETERS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Name of Equipment</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Country of Manufacturer</td>
</tr>
<tr>
<td></td>
<td>Country of Origin of Product/Model Number</td>
</tr>
<tr>
<td></td>
<td>Compliance with defined quality standards</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Specification Compliance features wise:</th>
<th>Remarks</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specifications:</td>
<td>Technically Acceptable /Not (Mention the reasons)</td>
<td>Technically Acceptable /Not (Mention the reasons)</td>
</tr>
<tr>
<td>Technical Eligibility of Product:</td>
<td>Eligible / Not Eligible</td>
<td>Eligible / Not Eligible</td>
</tr>
<tr>
<td>Technical Eligibility of Firm:</td>
<td>Eligible / Not Eligible</td>
<td>Eligible / Not Eligible</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>BID STATUS:</th>
<th>Responsive/Substantially Responsive</th>
<th>Responsive/Substantially Responsive / Non Responsive</th>
</tr>
</thead>
</table>

Note:
1. Non compliance of any of above evaluation parts will lead to the rejection of bid straight way.
2. Detail of rejection of any bid will be mentioned in detail.
3. The Technical status of offers will be declared as Responsive, Non Responsive and Substantially Responsive.
4. The offer will be considered as responsive if it fully meets the tender requirement and specifications.
5. The offer which will not be as per requirement of tender and specifications is to be declared as non responsive.
6. The bid with minor deviations without any effect on the quality, efficiency, reliability and durability of products will be declared as substantially responsive. The minor deviations will be determined by the Technical Evaluation Committee.
7. The bids declared either as Responsive or Substantial Responsive will be considered as acceptable bid for further processing.
8. Sample, where required by the procuring agency will be evaluated by the Technical Evaluation Committee by analyzing its Production quality, Design, Reliability, Conformance to the specification and safe for the usage etc. This report will become the part of above Performa as sample evaluation report.
9. In case of requirement, Procuring Agency / Technical Evaluation committee may inspect the premises of bidder to inspect the Technical and Managerial Capability/ setups for ensuring proper after sales services.