



**BIDDING DOCUMENT**  
*Single Stage - Two Envelope Bidding Procedure*

**PROCUREMENT OF  
LAB. & HOSPITAL EQUIPMENT / INSTRUMENTS**

**(Bid Reference No. DUHS/DP/2017/- 18)**

**N.I.T No. DUHS/DP/2017/- 17-19 Dated 21 February 2017**

<b>TABLE OF CONTENTS</b>		
<b>A.</b>	<b>INSTRUCTIONS TO BIDDERS (ITB)</b>	<b>2</b>
1.	INTRODUCTION	2
2.	THE BIDDING PROCEDURE	3
3.	THE BIDDING DOCUMENTS	3
4.	PREPARATION OF BIDS	4
5.	SUBMISSION OF BIDS	8
6.	OPENING AND EVALUATION OF BIDS	9
7.	AWARD OF CONTRACT	14
<b>B.</b>	<b>GENERAL CONDITIONS OF CONTRACT (GCC)</b>	<b>17</b>
1.	DEFINITIONS	17
2.	APPLICATION	17
3.	STANDARDS	18
4.	USE OF CONTRACT DOCUMENTS AND INFORMATION	18
5.	PATENT RIGHTS	18
6.	ENSURING STORAGE ARRANGEMENTS	18
7.	INSPECTIONS, TESTS AND TRAINING	18
8.	DELIVERY AND DOCUMENTS	19
9.	INSURANCE	19
10.	TRANSPORTATION	19
11.	INCIDENTAL SERVICES	19
12.	WARRANTY / GUARANTEE	19
13.	PAYMENT	20
14.	ASSIGNMENT	20
15.	DELAYS IN THE BIDDER'S PERFORMANCE	20
16.	PENALTIES/ LIQUIDATED DAMAGES	21
17.	TERMINATION FOR DEFAULT	21
18.	FORCE MAJEURE	21
19.	TERMINATION FOR INSOLVENCY	21
20.	ARBITRATION AND RESOLUTION OF DISPUTES	22
21.	PACKING	22
22.	GOVERNING LANGUAGE	22
23.	APPLICABLE LAW	22
<b>C:</b>	<b>INVITATION FOR BIDS (IFB)</b>	<b>23</b>
<b>D:</b>	<b>BID DATA SHEET</b>	<b>24</b>
<b>E:</b>	<b>SPECIAL CONDITIONS OF CONTRACT (SCC)</b>	<b>26</b>
<b>F:</b>	<b>SCHEDULE OF REQUIREMENTS</b>	<b>31</b>
<b>G:</b>	<b>TECHNICAL SPECIFICATIONS</b>	<b>32</b>
<b>H:</b>	<b>SAMPLE FORMS</b>	<b>74</b>
1.	PERFORMANCE GUARANTEE/SECURITY FORM	74
2.	MANUFACTURER'S AUTHORIZATION FORM	75
3.	CONTRACT FORM	76
<b>I:</b>	<b>BID FORM &amp; PRICE SCHEDULE</b>	<b>77</b>
1.	BID FORM	77
2.	PRICE SCHEDULES	78 & 79

# A: Instructions to Bidders. (ITB)

## 1. INTRODUCTION

### 1. GENERAL

- 1.1 The Procuring Agency has allocated fund towards the cost of **“Procurement of Lab. & Hospital Equipment / Instruments”**. It is intended that part of the proceeds of this fund will be applied to eligible payments under the contract for the Procurement of goods.

### 2. ELIGIBLE BIDDERS

- 2.1 This Invitation for Bids is open to all original Manufacturers, within Pakistan and abroad, and their Authorized Agents / Importers / Bidders / Distributors.
- 2.2 Bidders should not be associated, or have been associated in the past, directly or indirectly, with a firm or any of its affiliates which have been engaged by the University to provide consulting services for the preparation of the design, specifications, and other documents to be used for the procurement of the goods to be purchased under this Invitation for Bids.
- 2.3 Government-owned enterprises may participate only if they are legally and financially autonomous, if they operate under commercial law, and if they are not a dependent agency of the Federal Govt. or Provincial Govt.
- 2.4 Bidder should not be eligible to bid if they are under a declaration of ineligibility for corrupt and fraudulent practices issued by any Government organization in accordance with sub **clause 35.1**.

### 3. ELIGIBLE GOODS

- 3.1 All goods and related services to be supplied under the contract shall have their origin in eligible source countries and all expenditures made under the contract shall be limited to such goods and services. For this purpose, the term “Goods” includes any Goods that are the subject of this Invitation for Bids and the term “Services” shall include related services such as transportation, insurance etc. **The “Origin” means the place where the “goods” are mined, grown, or produced, or the place from which the “related services” are supplied.** Goods are produced through manufacturing or processing, or substantial and major assembly of ingredients / components, a commercially recognized product results that is substantially different in basic characteristics or in purpose or utility from its components.

## **2. THE BIDDING PROCEDURE**

### **4. Single Stage - Two Envelope Procedure**

- (a) Bid shall comprise a single package containing two separate envelopes. Each envelope shall contain separately the financial proposal and the technical proposal;
- (b) Envelopes shall be marked as “FINANCIAL PROPOSAL” and TECHNICAL PROPOSAL” in bold and legible letters to avoid confusion;
- (c) Initially, only the envelope marked “TECHNICAL PROPOSAL” shall be opened;
- (d) Envelope marked as “FINANCIAL PROPOSAL” shall be retained in the custody of the procuring agency without being opened;
- (e) Procuring agency shall evaluate the technical proposal in a manner prescribed in advance, without reference to the price and reject any proposal which does not conform to the specified requirements;
- (f) No amendments in the technical proposal shall be permitted during the technical evaluation;
- (g) Financial proposals of technically qualified bids shall be opened publicly at a time, date and venue announced and communicated to the bidders in advance;
- (h) Financial proposal of bids found technically non-responsive shall be returned un-opened to the respective bidders; and
- (j) Bid found to be the lowest evaluated or best evaluated bid shall be accepted.

4.2 The bids shall be opened in the presence of bidders or their authorized representative at the prescribed time, date and venue.

## **3. THE BIDDING DOCUMENTS**

### **5. CONTENTS OF BIDDING DOCUMENTS**

#### **5.1 The Bidding Documents:**

In addition to the Invitation for Bids (IFB) / Tender Notice, the bidding documents include:

- i. Instructions to Bidders (ITB);
- ii. General Conditions of Contract (GCC);
- iii. Special Conditions of Contract (SCC);
- iv. Schedule of Requirements;
- v. Technical Specifications;
- vi. Contract Form;
- vii. Manufacturer's Authorization Form;
- viii. Performance Guarantee Form;
- ix. Bid Form; and
- x. Price Schedules.

5.2 In case of discrepancies between the Invitation for Bids (IFB) / Tender Notice and the Bidding Documents, the Bidding Documents shall take precedence.

5.3 The bidders are expected to examine all instructions, forms, terms, and specifications in the bidding documents. Failure to furnish complete information required in the bidding documents or to submit a bid not substantially responsive to the bidding documents may result in rejection.

#### 6. AMENDMENT OF BIDDING DOCUMENTS

6.1 At any time prior to the deadline for submission of bids, the Procuring Agency may, for any reason, whether at its own initiative or in response to a clarification requested by a prospective Bidder, modify the bidding documents by amendment.

6.2 All prospective bidders that have received the bidding documents will be notified the amendment(s) in writing, which will be binding on them.

6.3 In order to allow prospective bidders reasonable time to take the amendment(s) into account in preparing their bids, the Procuring Agency may, at its discretion, extend the deadline for submission of the bids.

### **4. PREPARATION OF BIDS**

#### 7. LANGUAGE OF BID

##### 7.1 Preparation of Bids

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 in English. Supporting documents and printed literature furnished by the bidder may be in another language provided these are accompanied by an accurate translation of the relevant passages in English, in which case for purposes of interpretation of the Bid, the translated version shall prevail.

#### 8. DOCUMENTS COMPRISING THE BID

8.1 The bid prepared by the Bidder shall comprise the following:

- (a) Bid Form;
- (b) Price Schedule;
- (c) Documentary evidence to the effect that the Bidder is eligible to bid and is qualified to perform the Contract if its bid is accepted;
- (d) Documentary evidence to the effect that the goods to be supplied by the Bidder are eligible goods and related services as defined in clause-3 and conform to the bidding documents; and
- (e) Bid Security.

#### 9. BID PRICES

9.1 The prices and discounts quoted by the Bidder in the Bid Form and in the Price Schedules shall conform to the requirements specified below.

- 9.2 All items in the Schedule of Supply must be listed and priced separately in the Price Schedules. If a Price Schedule shows items listed but not priced, their prices shall be assumed to be included in the prices of other items. Items not listed in the Price Schedule shall be assumed not to be included in the Bid.
- 9.3 The price to be quoted in the Bid Form shall be the total price of the Bid excluding any discounts offered.
- 9.4 The Bidder shall quote any unconditional discounts and the methodology for their application in the Bid Form.
- 9.5 Prices proposed in the Price Schedule Forms for Goods, shall be disaggregated, when appropriate. This disaggregation shall be solely for the purpose of facilitating the comparison of Bids by the Procuring Agency. This shall not in any way limit the Procuring Agency's right to contract on any of the terms offered:
- (a) Price Schedule For Goods offered from within the Procuring Agency's country:
    - (i) Detailed Specification of Stores
    - (ii) Model / Cat No.
    - (iii) Name of Manufacturer.
    - (iv) Country of Origin
    - (v) Quantity of Stores
    - (vi) Unit
    - (vii) the unit price of the goods quoted on delivered duty paid (DDP) basis, including all customs duties and sales and other taxes already paid or payable on the components and raw material used in the manufacture or assembly of goods, or on the previously imported goods of foreign origin;
    - (viii) If there is no mention of taxes, the offered/quoted price will be considered as inclusive of all prevailing taxes/duties. The benefit of exemption from or reduction in the GST or other taxes during the contract period shall be passed on to the Procuring Agency; and
    - (ix) the total price for the item.
  - (b) Price Schedule For Goods offered from outside the Procuring Agency's country:
    - (i) Detailed Specification of Stores
    - (ii) Model / Cat No.
    - (iii) Name of Manufacturer.
    - (iv) Country of Origin
    - (v) Quantity of Stores
    - (vi) Unit

(vii) Currency of Bid

(viii) the unit price of the goods quoted on CFR / C&F basis (Karachi Port), in the Procuring Agency's country;

(ix) the total price for the item in foreign currency.

9.6 Final Prices quoted by the Bidder shall be fixed during the Bidder's performance of the Contract and not subject to variation on any account. A Bid submitted with an adjustable price quotation shall be treated as nonresponsive and shall be rejected.

9.7 If it was proved during the contract period that bidder has supplied the contracted item(s) to any other purchasing agency in Pakistan at the prices lower than the contracted prices, the balance amount will be deducted from the bill and / or security deposit of the bidder.

## 10. BID CURRENCIES

10.1 Prices shall be quoted in Pakistani Rupees for goods offered within the Procuring Agency's country on delivered duty paid (DDP).

10.2 Price shall be quoted in foreign currency for goods offered outside the Procuring Agency's country on CFR / C&F Basis.

## 11. DOCUMENTS ESTABLISHING BIDDER'S ELIGIBILITY AND QUALIFICATION

11.1 The documentary evidence of the Bidder's qualifications to perform the contract if its bid is accepted shall establish to the Procuring Agency's satisfaction:

- (a) that, in the case of a Bidder offering to supply goods under the contract which the Bidder did not manufacture or otherwise produce, the Bidder has been duly authorized by the goods' Manufacturer or producer to supply the goods in the Procuring Agency's country;
- (b) that the Bidder has the financial, technical, and production capability necessary to perform the contract;
- (c) that, in the case of a Bidder not doing business within the Procuring Agency's country, the Bidder is or will be (if awarded the contract) represented by an Agent in that country equipped, and able to carry out the Bidder's maintenance, repair, and spare parts-stocking obligations prescribed in the Conditions of Contract and/or Technical Specifications; and
- (d) that the Bidder meets the evaluation & qualification criteria of bidding document.

## 12. DOCUMENTS ESTABLISHING GOODS' ELIGIBILITY AND CONFORMITY TO BIDDING DOCUMENTS

12.1 Pursuant to ITB Clause 8, the Bidder shall furnish, as part of its bid, documents establishing the eligibility and conformity to the bidding

documents of all goods and services which the Bidder proposes to supply under the contract.

- 12.2 The documentary evidence of the eligibility of the goods and services shall consist of a statement in the Price Schedule of the country of origin of the goods and services offered which shall be confirmed by a certificate of origin issued at the time of shipment.
- 12.3 The documentary evidence of conformity of the goods and services to the bidding documents may be in the form of literature, drawings, and data, and shall consist of:
  - (a) a detailed description of the essential technical and performance characteristics of the goods; and
  - (b) an item-by-item commentary on the Procuring Agency's Technical Specifications demonstrating substantial responsiveness of the goods and services to those specifications, or a statement of deviations and exceptions to the provisions of the Technical Specifications.
- 12.4 For purposes of the commentary to be furnished pursuant to ITB Clause 12.3(b) above, the Bidder shall note that standards for workmanship, material, and equipment, as well as references to brand names or catalogue numbers designated by the Procuring Agency in its Technical Specifications, are intended to be descriptive only and not restrictive. The Bidder may substitute alternative standards, brand names, and/or catalogue numbers in its bid, provided that it demonstrates to the Procuring Agency's satisfaction that the substitutions ensure substantial equivalence to those designated in the Technical Specifications.

### 13. BID SECURITY

- 13.1 The Bidder shall furnish, as part of its proposal, a Bid Security in the amount and currency specified in the Bid Data Sheet and SCC. Unsuccessful bidders' Bid Security will be returned soon after approval of the successful Bidder. The successful Bidder's Bid Security will be discharged upon signing of contract and furnishing the Performance Security bond, duly guaranteed by a scheduled bank.
- 13.2 The Bid Security shall remain valid for a period of 28 days beyond the bid validity period.
- 13.2 The Bid Security is required to protect the Procuring Agency against the risk of Bidder's conduct, which would warrant the Security's forfeiture;
- 13.3 The Bid Security may be forfeited:
  - (a) if a Bidder withdraws its bid during the period of bid validity; or
  - (b) in the case of a successful Bidder, the Bidder fails:
    - (i) to sign the Contract; or
    - (ii) to complete the supplies in accordance with the General Conditions of Contract.

14. BID VALIDITY

14.1 Bids shall remain valid for 90 days from the date of its opening. A bid valid for a shorter period shall be treated as non-responsive and rejected.

14.2 The Procuring Agency shall ordinarily be under an obligation to process and evaluate the bids within the stipulated bid validity period. However, for any 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.

15. ALTERNATIVE BIDS

15.1 If any bidder elects to submit alternative proposal(s), complete information on the alternative items including all data relating to technical specifications shall be given as per following table.

Sr. No.	Description of Stores	Statement of Variation from Specifications	Reasons for Variations

**5. SUBMISSION OF BIDS**

16. SEALING AND MARKING OF BIDS

16.1 The envelopes shall:

- (a) bear the name and address of the Bidder;
- (b) bear the specific identification Name and Number of this bidding process indicated in the Bid Data Sheet; and
- (c) bear the Procuring Agency's name and address i.e. Dow University of Health Sciences (Ojha Campus), Procurement Directorate, Prof. Masood Hameed Khan Library Building, SUPARCO Road, off Main University Road, Gulzar-e-Hijri, Scheme No. 33, Karachi and a statement: "DO NOT OPEN BEFORE," the time and date specified in the Bid Data Sheet.

16.2 If all envelopes are not sealed and marked as required, the Procuring Agency will assume no responsibility for the misplacement or premature opening of the bid.

17. DEADLINE FOR SUBMISSION OF BIDS

17.1 Bids must be submitted by the bidders and received by the Procuring Agency at the specified address not later than the time and date specified in the Bid Data Sheet.

17.2 The Procuring Agency may, at its convenience, extend this deadline for submission of bids by amending the bidding documents in which case all rights and obligations of the Procuring Agency and the Bidders previously subject to the deadline will thereafter be subject to the deadline as extended.

**18. LATE BID**

18.1 Any bid received by the Procuring Agency after the deadline for submission of bids prescribed by the Procuring Agency shall not be entertained and returned unopened to the bidder.

**19. WITHDRAWAL OF BIDS**

19.1 The Bidder may after its submission withdraw prior to the expiry of the deadline prescribed for submission of bids.

**6. OPENING AND EVALUATION OF BIDS**

**20. OPENING OF BIDS BY THE PROCURING AGENCY**

22.1 The Procuring Agency will open all bids in the presence of bidders' representatives who choose to attend, at the time, on the date, and at the place specified in the Bid Data Sheet. The bidders' representatives who are present shall sign a register evidencing their attendance.

22.2 The bidders' names, bid modifications or withdrawals, bid prices, discounts, and the presence or absence of requisite bid security and such other details as the Procuring Agency, at its discretion, may consider appropriate, will be announced at the opening. No bid shall be rejected at bid opening, except for late bids, which shall be returned unopened to the Bidder pursuant to ITB Clause 18.

22.3 Bids (and modifications sent pursuant to ITB Clause 19) that are not opened and read out at bid opening shall not be considered further for evaluation, irrespective of the circumstances. Withdrawn bids will be returned unopened to the bidders.

**21. CLARIFICATION OF BIDS**

21.1 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 the bid shall be sought, offered, or permitted.

**22. PRELIMINARY EXAMINATION**

22.1 The Procuring Agency will examine the bids to determine whether they are complete, whether any computational errors have been made, whether

required sureties have been furnished, whether the documents have been properly signed, and whether the bids are generally in order.

- 22.2 Arithmetical errors will 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 Supplier does not accept the correction of the errors, its bid will be rejected, and its bid security may be forfeited. If there is a discrepancy between words and figures, the amount in words will prevail.
- 22.3 The Procuring Agency may waive any minor informality, nonconformity, or irregularity in a bid which does not constitute a material deviation, provided such waiver does not prejudice or affect the relative ranking of any Bidder.
- 22.4 Prior to the detailed evaluation, pursuant to ITB Clause 23 the Procuring Agency will 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, such as those concerning Bid Security, Applicable Law, and Taxes and Duties, will be deemed to be a material deviation. 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.
- 22.5 If a bid is not substantially responsive, it will be rejected by the Procuring Agency and may not subsequently be made responsive by the Bidder by correction of the nonconformity.

### **23. EVALUATION AND COMPARISON OF BIDS**

- 23.1 The Procuring Agency will evaluate and compare the bids which have been determined to be substantially responsive, pursuant to ITB Clause 22.
- 23.2 The Procuring Agency's evaluation of a bid will be on delivered duty paid (DDP) inclusive of prevailing duties/taxes and C&F / CNF basis and will exclude any allowance for price adjustment during the period of execution of the contract, if provided in the bid.
- 23.3 The Procuring Agency's evaluation of a bid will take into account, in addition to the bid price quoted, one or more of the following factors, and quantified in ITB Clause 24:
  - (a) **Incidental costs**  
Incidental costs provided by the bidder will be added by Procuring Agency to the bid price at the final destination.
  - (b) **Delivery schedule offered in the bid**  
The goods covered under this invitation are required to be delivered (shipped) within an acceptable range of weeks specified in the Schedule of Requirement.

- (c) **Deviations in payment schedule from that specified in the Special Conditions of Contract**  
Bidders shall state their bid price for the payment schedule outlined in the SCC. Bids will be evaluated on the basis of this base price. Bidders are, however, permitted to state an alternative payment schedule and indicate the reduction in bid price they wish to offer for such alternative payment schedule. The Procuring Agency may consider the alternative payment schedule offered by the selected Bidder.
- (d) **Cost of components, mandatory spare parts, and service**  
The Procuring Agency will estimate the cost of spare parts usage in the initial period of operation, based on information furnished by each Bidder, as well as on past experience of the Procuring Agency or other procuring agencies in similar situations. Such costs shall be added to the bid price for evaluation.
- (e) **Availability of spare parts and after sales services for the equipment offered in the bid**  
The cost to the Procuring Agency of establishing the minimum service facilities and parts inventories, as outlined in the Bid Data Sheet or elsewhere in the bidding documents, if quoted separately, shall be added to the bid price.
- (f) **Projected operating and maintenance costs during the life of the equipment;**  
Since the operating and maintenance costs of the goods under procurement form a major part of the life cycle cost of the equipment, these costs will be evaluated in accordance with the criteria specified in the Bid Data Sheet or in the Technical Specifications.
- (g) **Performance and productivity of the equipment offered**  
Bidders shall state the guaranteed performance or efficiency in response to the Technical Specification. For each drop in the performance or efficiency below the norm of 100, an adjustment for an amount will be added to the bid price, representing the capitalized cost of additional operating costs over the life of the plant, using the methodology specified in the Bid Data Sheet or in the Technical Specifications.

## 24. EVALUATION / QUALIFICATION CRITERIA

### 24.1 Merit Point System:

The following merit point system for weighing evaluation factors/criteria will be applied for technical proposals.

#### A. PRODUCT EVALUATION

S#	PARAMETERS	SUB-PARAMETERS	Total Marks
<b>1</b>	<b>Conformity to the Purchaser's Specifications</b>		<b>25</b>
		Fully compliant with the required specifications	25
		Compliant with minor deviation (up to 10% subject to main function is not effected)	20
<b>2</b>	<b>Product Certification</b>		<b>15</b>
		Food and Drug Administration (FDA) 510K and European Community (CE) MDD or Japan Industrial Standard (JIS)/ Japan Quality Assurance Organization (JQAO)	15
		European Community (CE) MDD and Japan Industrial Standard (JIS)	12
		Food and Drug Administration (FDA) 510K	10
		European Community (CE) MDD	08
		Japan Industrial Standard (JIS)/Japan Quality Assurance Organization (JQAO)	08
<b>TOTAL MARKS PRODUCT EVALUATION (A)</b>			<b>40</b>

#### B. BIDDER EVALUATION

S#	PARAMETERS	SUB-PARAMETERS	Total Marks
<b>3</b>	<b>Legal Requirement</b>		<b>17</b>
		Manufacturer Authorization	5
		Price Schedule (without prices)	4
		Bid Form (without prices)	4
		Tender Purchase Receipt	2
		Taxation Certificate (NTN and GST)	2
<b>4</b>	<b>Technical Staff</b>		<b>13</b>
		Simple Technician (minimum two)	2
		Diploma Engineers (minimum two)	3
		Graduate Engineers (For High Tech / Critical equipment Graduate Engineer of relevant field is mandatory for each product) (minimum two)	5
		MSc / PhD qualification/Foreign training	3

S#	PARAMETERS	SUB-PARAMETERS	Total Marks
<b>5</b>	<b>Networking and Training</b>		<b>8</b>
		Networking setup across Pakistan (1 mark for each setup upto maximum 6)	6
		Certificate to the affect that the firm will provide training in the use of equipment to the relevant technical staff. Training plan must be attached with certificate	2
<b>6</b>	<b>Delivery</b>		<b>6</b>
		4 to 6 Weeks or earlier	6
		7 to 12 Weeks or earlier	2
<b>7</b>	<b>Past Experience / Performance</b>		<b>4</b>
		Satisfactory performance certificate for the quoted equipment from the medical institutions within Pakistan (1 mark for each certificate upto maximum 4)	4
<b>8</b>	<b>Financial Status</b>		<b>6</b>
		Bank Certificate	2
		Last year verified Balance Sheet	2
		Yearly turn-over of over 100 Million	2
<b>9</b>	<b>Bonus points</b>		<b>6</b>
		Warranty period extension free of cost (the firm offered greater period will get the marks) warranty must be from original manufacturer	2
		Comparative Running Cost (consumables / reagents / replacement parts	2
		Post warranty maintenance contract, including service and parts, rates (companies to offer percentage (%) of the contract value in the technical bid. The lowest will get the full marks.	2
<b>TOTAL BIDDER EVALUATION (B)</b>			<b>60</b>
<b>GRAND TOTAL (A + B)</b>			<b>100</b>

**Note:**

- If a bidder fails to obtain minimum 20 marks, against the criteria “**Conformity to the Purchaser's Specifications**” and **unable to provide valid manufacture Authorization** his offer will not be considered for further evaluation and rejected.
- Bidders achieving minimum 70 marks will be considered only.

- 24.2 **Litigation History**  
The Bidder should not be involved in any litigation with the Procuring Agency/Govt. Deptt: (Provincial/Federal), else their bid will be rejected.

25. **CONTACTING THE PROCURING AGENCY**

- 25.1 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. If any bidder wishes to bring additional information to the notice of the Procuring Agency, it may do so in writing.
- 25.2 Any direct or indirect effort by a bidding firm to influence the Procuring Agency during the process of selection of a bidder or award of contract may besides rejection of its bid result into its disqualification from participation in the Procuring Agency's future bids.

26. **REJECTION OF BIDS**

- 26.1 Notwithstanding anything stated here-before after the Procuring Agency may reject any or all bids at any time prior to the acceptance of a bid. The Procuring Agency may upon request, communicate to a bidder, the grounds for its rejection, but shall not be under obligation to justify those grounds.

27. **RE-BIDDING**

- 27.1 If the Procuring Agency has rejected all bids, it may move for a re-bidding or may seek any alternative method of procurement under the provisions of the prevailing Rules.

28. **ANNOUNCEMENT OF EVALUATION REPORT**

- 28.1 The Procuring Agency will announce the Evaluation Report and the resultant acceptance or rejection of bids at least seven days prior to the award of procurement contract.

**7. AWARD OF CONTRACT**

29. **ACCEPTANCE OF BID AND AWARD CRITERIA**

- 29.1 The bidder with lowest evaluated bid under clause 22, 23 & 24, if not in conflict with any other law, rules, regulations or policy of the Government, will be awarded the contract within the original or extended period of bid validity.

30. **PROCURING AGENCY'S RIGHT TO VARY QUANTITIES**

- 30.1 The Procuring Agency reserves the right to increase or decrease the quantity of stores originally specified in the Price Schedule and Schedule of Requirements without any change in unit price or other terms and conditions.

31. LIMITATIONS ON NEGOTIATIONS

- 31.1 The Procuring Agency reserves the right to hold negotiation of rates, delivery schedule or completion schedule for all the items or any item.
- 31.2 Negotiations will not be used to change substantially:
- i. the technical quality or details of the requirement, including the tasks or responsibilities of the bidder or the performance of the goods;
  - ii. the terms and conditions of the Contract and;
  - iii. anything affecting the crucial or deciding factors in the evaluation of the proposals / bid and / or selection of successful bidder..

32. NOTIFICATION OF AWARD

- 32.1 Prior to the expiry of the original or extended period of bid validity, the successful bidder will be informed in writing of acceptance of its bid by the Procuring Agency.

33. SIGNING OF CONTRACT

- 33.1 While conveying acceptance of bid to the successful bidder, the Procuring Agency will send the bidder Contract Form provided in the bidding documents, incorporating all points of agreement between the Parties.
- 33.2 Ten days after the official announcement of the award, both the successful Bidder and the Procuring Agency will sign and date the Contract on legal stamp paper valuing 0.30% of the value of contract, (cost shall be borne by the bidder). In case the successful Bidder, after completion of all codal formalities, shows inability to sign the Contract, its Bid Security shall be forfeited. The firm may also be blacklisted from taking part in any future bidding of Procuring Agency for a period upto five Years. In such a situation, the Procuring Agency may make the award to the next lowest evaluated responsive bidder or move for re-bid.

34. PERFORMANCE SECURITY

- 34.1 The successful Bidder shall furnish Performance Security. Upon submission of Performance Security the Bid Security will be returned to the Bidder. The amount of Performance Security is specified at Bid Data Sheet.
- 34.2 Failure of the successful Bidder to comply with any of the requirements specified in this document shall be considered as sufficient grounds for the annulment of the award and forfeiture of the Bid Security, in which event the Procuring Agency may make the award to the next lowest evaluated Bidder at the risk and cost of the former.

35. CORRUPT OR FRAUDULENT PRACTICES

- 35.1 (a) the Procuring Agency and the Bidders / Manufacturers / Contractors are expected to observe the highest standard of ethics during the procurement and execution of the Contract. In pursuance of this policy, the relevant terms / phrases as may apply are defined below:
- (i) "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; and
  - (ii) "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;
- (b) the Procuring Agency will take all possible administrative / legal measures if it is found that the Bidder recommended for award was / is engaged in corrupt or fraudulent practice(s) before or after signing of the contract resulting into the conviction of the proprietor under criminal case besides blacklisting of the firm either indefinitely or for such period of time as may be determined by the Procuring Agency.
- (c) will declare a firm ineligible, either indefinitely or for a stated period of time, for the award of 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.

## **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 Bidder, as recorded in the Contract Form signed by the Parties, including all attachments and appendices thereto and all documents incorporated by reference therein.
- (b) "The Contract Price" means the price payable to the Bidder under the Contract for the full and proper performance of its Contractual obligations.
- (c) "Goods" means all of the commodities, raw material, machinery and equipment, and/or other materials that the Supplier is required to supply to the Procuring Agency under the Contract.
- (d) "Related Services" means the services incidental to the supply of the goods, such as insurance, installation, training and initial maintenance, printing of special instructions on the label and packing, design and logo of the Procuring Agency, transportation of goods up to the desired destinations and other such obligations of the Bidder covered under the Contract.
- (e) "GCC" means the General Conditions of Contract contained in this section.
- (f) "SCC" means the Special Conditions of Contract.
- (g) "The Procuring Agency" means the Dow University of Health Sciences, Karachi.
- (h) "The Bidder" means the individual or firm supplying the goods under this Contract.
- (i) "Day" means official working day excluding national holidays.

### **2. APPLICATION**

2.1 These General Conditions shall apply to the extent that they are not inconsistent with provisions of other parts of the Contract.

### 3. STANDARDS

3.1 The goods supplied under this Contract shall conform to the standards mentioned in the Technical Specifications goods eligibility criteria.

### 4. USE OF CONTRACT DOCUMENTS AND INFORMATION

4.1 The Bidder 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 Bidder in the performance of the Contract. Disclosure to such employed person shall be made in confidence and shall extend only, as far as may be necessary, to such performance and not further or otherwise.

4.2 Any document, other than the Contract itself, shall remain the property of the Procuring Agency and shall be returned (all copies) on completion of the Bidder's performance under the Contract.

4.3 The Bidder shall permit the Procuring Agency to inspect the Bidder's accounts and records relating to the performance of the Supplies.

### 5. PATENT RIGHTS

5.1 The Bidder 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.

### 6. ENSURING STORAGE ARRANGEMENTS

6.1 To ensure storage arrangements for the intended supplies, the Bidder shall inform the Procuring Agency at least two weeks prior to the arrival of the consignments at its store/warehouse. However, in case no space is available at its store/warehouse at the time of supply, the Procuring Agency shall, seven days prior to such a situation, inform the Bidder, in writing, of the possible time-frame of availability of space by which the supplies could be made. In case the Bidder abides by the given time frame, he will not be penalized for delay.

### 7. INSPECTIONS, TESTS AND TRAINING

7.1 The Procuring Agency or its representative shall have the right to inspect and/or test the goods to confirm their conformity to the Contract specifications at the cost payable by the Bidder.

7.2 The Procuring Agency's right to inspect, test and, where necessary, reject the goods either at Bidder's premises or upon arrival at Procuring Agency's destinations shall in no way be limited or waived by reasons of the goods having previously been inspected, tested, and approved by the Procuring

Agency or its representative prior to the goods shipment from the manufacturing point.

- 7.3 Any specialized training required for the smooth operation of the goods shall be the responsibility of the Bidder.

## 8. DELIVERY AND DOCUMENTS

- 8.1 The Bidder shall in accordance with the terms specified in the Schedule of Requirements make delivery of the goods. Details of documents to be furnished by the Bidder are specified in SCC.

## 9. INSURANCE

- 9.1 The goods supplied under the Contract shall be delivered to the Procuring Agency after the payment of all taxes and customs duty, cess, octroi charges etc. Risk will be transferred to the Procuring Agency only after the delivery of these goods has been made to the Procuring Agency. Hence, payment of insurance premium, if any, shall be the responsibility of the Bidder.

## 10. TRANSPORTATION

- 10.1 The Bidder shall arrange such transportation of the goods as is required to prevent them from damage or deterioration during transit to their final destination as indicated in the Schedule of Requirements.
- 10.2 The goods shall be supplied on "**D.D.P**" basis at the Dow University of Health Sciences, Karachi AND / OR "**CFR / C&F**" Basis at Karachi Port as per Schedule of Requirements on the risk and cost of the Bidder. Transportation including loading/unloading of goods shall be the responsibility of Bidder.

## 11. INCIDENTAL SERVICES

- 11.1 The Bidder will be required to provide to the Procuring Agency incidental services the cost of which should be included in the total bid price.

## 12. WARRANTY / GUARANTEE

- 12.1 The term period of warranty / guarantee mean the period of twelve (**12**) **months** form the date on which the Stores have been put into operation and demonstrated to the University staff. In any case this period shall not exceed eighteen (18) months from the date of taking-over certificate.
- 12.2 During the period of warranty / guarantee, the Contractor shall remedy, at his / her expense, all defects in design, materials, and workmanship that may develop or are revealed under normal use of the goods upon receiving written notice from the University; the notice shall indicate in what respect the goods are faulty.

- 12.3 The provisions of this Clause include all the expenses that the Contractor may have to incur for delivery and installation of such replacement parts, material and equipment as are needed for satisfactory operation of the goods at the University premises.
- 12.4 The contractor shall provide warranty / guarantee for supply of kits and chemicals, consumables, films etc. for at least 05 years (where applicable).
- 12.5 The contractor shall remain responsible for providing after sale services even after expiry of warranty / guarantee period and sign a Service Contract including Parts with Procuring Agency for 05 years (minimum). **THE BIDDER SHALL SEPARATELY QUOTE THE PRICE OF SERVICE CONTRACT INCLUSIVE OF PARTS.**
- 12.6 In case of consumable items, kits, chemicals, films etc. the contractor shall remain responsible for specificity, efficacy & sensitivity with maximum period of expiry as much allowed by manufacturer.
- 12.7 The Procuring Agency shall promptly notify the Bidder in writing of any claims arising out of this warranty.

### 13. PAYMENT

- 13.1 The method and conditions of payment to be made to the Bidder under this Contract are specified in SCC.

### 14. ASSIGNMENT

- 14.1 The Bidder shall not assign, in whole or in part, its obligations to perform to another party under this Contract, except with the Procuring Agency's prior written consent.

### 15. DELAYS IN THE BIDDER'S PERFORMANCE

- 15.1 Delivery of the goods shall be made by the Bidder in accordance with the time schedule prescribed by the Procuring Agency in the Schedule of Requirements / Contract Award.
- 15.2 If at any time in the course of performance of the Contract, the Bidder encounters anything impeding timely delivery of the goods, he shall promptly notify the Procuring Agency in writing of the causes of delay and its likely duration. As soon as practicable, after receipt of the Bidder's notice, the Procuring Agency shall evaluate the situation and may, depending on merits of the situation, extend the Bidder's time for performance, with or without liquidated damages, in which case the extension shall be ratified by the Parties by a supplementary Contract to be treated as an addendum to the original contract.
- 15.3 Any undue delay by the Bidder in the performance of its delivery obligations shall render it liable to the imposition of liquidated damages.

## 16. PENALTIES LIQUIDATED DAMAGES

16.1 In case of late delivery, even for reasons beyond control, penalty as specified in SCC will be imposed upon the Bidder / Manufacturer. The Procuring Agency may consider termination of the Contract in case there is an unusual delay in the delivery of the goods whereby the ongoing activity is likely to be affected seriously.

## 17. TERMINATION FOR DEFAULT

17.1 The Procuring Agency may, without prejudice to any other remedy for breach of Contract, by a written notice of default sent to the Bidder, terminate this Contract in whole or in part if:

- (a) the Bidder 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;
- (b) the Bidder fails to perform any other obligation(s) under the Contract to the satisfaction of the Procuring Agency; and
- (c) the Bidder, in the judgment of the Procuring Agency, has engaged itself in corrupt or fraudulent practices before or after executing the Contract.

## 18. FORCE MAJEURE

18.1 The Bidder shall not be liable for forfeiture of its Performance Guaranty/ Bid Security, or termination / blacklisting for default if and to the extent that this 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 Bidder and not involving the Bidder's fault or negligence directly or indirectly purporting to mal-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 Bidder shall promptly notify the Procuring Agency in writing with sufficient and valid evidence of such condition and the cause thereof. The Committee, constituted for redressing grievances, will examine the pros and cons of the case and all reasonable alternative means for completion of purchase order under the Contract and will submit its recommendations to the competent authority. However, unless otherwise directed by the Procuring Agency in writing, the Bidder 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.

## 19. TERMINATION FOR INSOLVENCY

19.1 The Procuring Agency may at any time terminate the Contract by giving written notice of one month time to the Bidder if the Bidder becomes bankrupt or otherwise insolvent. In that event, termination will be without compensation

to the Bidder, provided that such termination will not prejudice or affect any right or remedy which has accrued or will accrue thereafter to the Parties.

## 20. ARBITRATION AND RESOLUTION OF DISPUTES

20.1 The Procuring Agency and the Bidder shall make every effort to resolve amicably by direct informal negotiations any disagreement or dispute arising between them under or in connection with the Contract.

20.2 If, after thirty (30) days from the commencement of such informal negotiations, the Procuring Agency and the Bidder 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.

20.3 In case of any dispute concerning the interpretation and/or application of this Contract is to be settled through arbitration, the arbitrator to be appointed with the approval of the University's Syndicate. The decisions taken and/or award given by the sole arbitrator shall be final and binding on the Parties.

## 21. PACKING

21.1 The Bidder shall provide such packing of the Goods as is required to prevent their damage or deterioration during transit to their final destination, as indicated in the Contract. The packing shall be sufficient to withstand, without limitation, rough handling during transit and exposure to extreme temperatures, salt and precipitation during transit, and open storage. Packing case size and weights shall take into consideration, where appropriate, the remoteness of the Goods' final destination and the absence of heavy handling facilities at all points in transit.

21.2 The packing, marking, and documentation within and outside the packages shall comply strictly with such special requirements as shall be expressly provided for in the Contract, including additional requirements, if any, specified in SCC, and in any subsequent instructions ordered by the Procuring Agency.

## 22. GOVERNING LANGUAGE

22.1 The Contract shall be written in English language. All correspondence and other documents pertaining to the Contract, which are exchanged by the Parties, shall be written in English.

## 23. APPLICABLE LAW

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

## C: NOTICE INVITING TENDER (NIT)

No. DUHS/DP/2017/-17-19 Dated 21 February 2017

Dow University of Health Sciences (DUHS), Karachi invites following bids on DDP / C&F basis from authorized Dealers / Distributors / Manufacturers, registered with GST & Income Tax.

Name of Bid	Reference No.	Bidding Procedure
Procurement of Radiology Equipment / Instruments	DUHS/DP/2017/17	Single Stage Two Envelope
Procurement of Lab. & Hospital Equipment / Instruments	DUHS/DP/2017/18	Single Stage Two Envelope
Procurement of Ophthalmology Equipment / Instruments & Ancillaries	DUHS/DP/2017/19	Single Stage Two Envelope

Tender Fee	Rs. 2,000/- (Rupees two thousand only) Non-Refundable in shape of Pay Order / Demand Draft in favor of Dow University of Health Sciences, Karachi
Bid Security	2% of the total bid value.
Purchasing Date & Time	27 February 2017 to 14 March 2017
Bids Delivery Date & Time	15 March 2017 at 11:00 a.m.
Bid Opening Date & Time	15 March 2017 at 11:30 a.m. In case of any unforeseen situation or government holiday resulting in closure of office on the date of opening, bids shall be submitted / opened on next working day at the given time.

Bidding document may be purchased by interested bidders on the submission of a written application, NTN, GST Certificates and Pay Order / Demand Draft of tender fee during office hours. Bidding Documents are also available at DUHS and SPPRA websites. Interested Bidders may obtain further information personally from 11:00 A.M. to 02:00 P.M.

S. Shafqat Hussain  
Director Procurement  
Procurement Directorate  
Prof. Masood Hameed Khan Library Building  
Dow University of Health Sciences (Ojha Campus)  
SUPARCO Road, off Main University Road,  
Gulzar-e-Hijri, Scheme No. 33, Karachi.  
Phone No. + 92-21-99261497  
Email: director.procurement@duhs.edu.pk

## D: Bid Data Sheet

The following specific data for the goods to be procured shall complement, supplement, or amend the provisions in the Instructions to Bidders (ITB). Whenever there is a conflict, the provisions herein shall prevail over those in ITB.

### INTRODUCTION

**ITB 1.1** Name of Procuring Agency: Dow University of Health Sciences, Karachi.

**ITB 1.1** Name of Contract:  
**Procurement of Lab. & Hospital Equipment / Instruments**

### THE BIDDING PROCEDURE

**ITB 4.1** Bids shall be accepted under the **Single Stage - Two Envelope Procedure**.

### PREPARATION OF BIDS

**ITB 7.1** Language of the bid shall be English

**ITB 9.6** **For the Goods offered within the Procuring Agency's Country:** the price quoted shall be on **delivered duty paid (DDP) Basis** at Consignee's End.

**For the Goods offered from Outside the Procuring Agency's Country:** the price quoted shall be on **CFR / C&F Karachi Basis**.

**ITB 10.1** **For the Goods offered within the Procuring Agency's Country:** the price quoted shall be in **Pak Rupees**.

**ITB 10.2** **For the Goods offered from Outside the Procuring Agency's Country:** the price quoted shall be in **Foreign Currency**.

**ITB 13.1** The Bid Security shall not be less than **2%** of the total Bid price in Pak Rupees.

**ITB 14.1** Bid validity period shall be **90 days**.

**ITB 15.1** If any bidder elects to submit alternative proposal(s), complete information on the alternative items including all data relating to technical specifications shall be provided.

## **SUBMISSION OF BIDS**

- ITB 16.1 (b)** The identification of this bidding process is:  
**Procurement of Lab. & Hospital Equipment / Instruments**  
**Bid Reference No. DUHS/DP/2017/18**  
**NIT No. DUHS/DP/2017/-17-19 Dated 21 February 2017**
- ITB 16.1 (c)** Dow University of Health Sciences (Ojha Campus), Procurement Directorate, Prof. Masood Hameed Khan Library Building, SUPARCO Road, off Main University Road, Gulzar-e-Hijri, Scheme No. 33, Karachi.  
“Must bear the name of the bidder” and a warning “Do Not Opened Before the time and date of bid opening”.
- ITB 17.1** **Deadline for bid submission:** 15 March 2017 at 11:00 a.m.

## **OPENING & EVALUATION OF BIDS**

- ITB 20.1** The bid opening shall take place at:  
Dow University of Health Sciences (Ojha Campus), Procurement Directorate, Prof. Masood Hameed Khan Library Building, SUPARCO Road, off Main University Road, Gulzar-e-Hijri, Scheme No. 33, Karachi.  
Date: **15 March 2017**  
Time: **11:30 a.m.**

## **CONTRACT AWARD**

- ITB 31.1** Qty. could be increased or decreased during the contract period (including extended period) according to the actual requirement.
- ITB 34.1** The successful Bidder shall furnish the Performance Security equivalent to 5% of the total Contract amount from any scheduled banks in shape of Pay Order / Demand Draft / Call Deposit / Bank Guarantee. The Performance Guarantee/Security Form is provided in the bidding documents. Upon submission of Performance Security / Guarantee the Bid Security would be returned to the Bidder.

## **E: Special Conditions of Contract (SCC)**

### 1. DEFINITIONS (GCC CLAUSE 1)

GCC 1.1 (g) The Procuring Agency is the Dow University of Health Sciences, Karachi.

GCC 1.1 (h) The Bidder is: \_\_\_\_\_  
(name and address of the successful bidder)

### 2. BID SECURITY (ITB CLAUSE 13)

ITB 13.1 The Bidder shall furnish, as part of its financial proposal/bid, refundable Bid Security in Pak Rupees @ 2% of the total bid value in the shape of Bank Draft / Pay Order / Call Deposit / Bank Guarantee in the name of the Dow University of Health Sciences, Karachi. The financial bid found deficient of the Bid Security will be rejected. No personal cheque in lieu thereof will be acceptable at any cost. The previous Bid Security, if any, will not be considered or carried forward. However, the Bid Security of the successful Bidder will be returned upon submission of Performance Security equal to 5% of the Contract amount that will remain with the Dow University of Health Sciences, Karachi till satisfactory completion of the Contract period. After delivery and acceptance of the Goods, the performance security shall be reduced to two (2) percent of the Contract Price to cover the Supplier's warranty obligations

### 3. INSPECTIONS, TESTS AND TRAINING (GCC CLAUSE 7)

GCC 7.1, 7.2 & 7.3 The goods received in the Dow University of Health Services, Karachi from the Bidder will be thoroughly inspected and examined by a Committee to make sure that the goods received conform to the specifications laid down in the bid documents and which have been approved by the Procurement Committee for procurement. The Committee will submit its inspection report, any deficiency pointed out by the Committee shall have to be rectified by the Bidder free of cost. The Bidder will be responsible to provide the Foreign and or Local Training to the University Staff for the specialized Equipment.

### 4. DELIVERY AND DOCUMENTS (GCC CLAUSE 8)

GCC Clause 8.1 *(a) For Goods from within the Procuring Agency's country:*

The Bidder shall provide the following documents at the time of delivery of goods to the Store / Warehouse of the Dow University of Health Sciences, Karachi for verification duly completed in all respects:

- i. Original copies of Delivery Note (Delivery Challan) (in duplicate) showing item's description, make, model, quantity as well as Lot Number, Batch Number, Registration Number, manufacturing and expiry dates (if applicable).
- ii. Original copies of the Bidder's invoices (in duplicate) showing warranty, item's description, make, model as well as Lot Number, Batch Number, Registration Number, manufacturing and expiry dates (if applicable) per unit cost, and total amount.
- iii. Original copies of the Sales Tax Invoices (where applicable) in duplicate showing item's description, quantity, per unit cost (without GST), amount of GST and total amount (with GST).
- iv. Manufacturer's or Bidder's warranty certificate.
- v. Inspection certificate issued by the nominated inspection committee along with Bidder's factory inspection report.
- vi. Certificate of origin.

***(b) For Goods supplied from abroad as per INCOTERM CFR / C&F Karachi:***

Details of shipping and documents to be furnished by the Bidder shall be:

Upon shipment, the Bidder shall notify the Procuring Agency and the Insurance Company by telex or fax or email the full details of the shipment, including Contract number, description of Goods, quantity, the vessel / flight, the Bill of Lading / Air Way Bill number and date, port of loading, date of shipment, port of discharge, etc. The Bidder shall send the following documents to the Procuring Agency, with a copy to the Insurance Company:

- i. 04 copies of the Bidder's invoice showing the description of the Goods, quantity, unit price, and total amount.
- ii. Original and 04 copies of the negotiable, clean, on-board bill of lading / air way bill marked "freight prepaid" and 04 copies of non-negotiable bill of lading / air way bill.
- iii. 04 copies of the packing list identifying contents of each package.
- iv. Insurance certificate.
- v. Manufacturer's or Bidder's warranty certificate.
- v. Inspection certificate, issued by the nominated inspection agency along with Bidder's factory inspection report.
- vi. Certificate of origin.

The Procuring Agency shall receive the above documents at least one week before arrival of the Goods at the port or place of arrival and, if

not received, the Bidder will be responsible for any consequent expenses.

5. INSURANCE (GCC CLAUSE 9)

GCC 9.1 The goods supplied under the Contract shall be on DDP / CFR / C&F basis at consignee's end under which risk will be transferred to the Procuring Agency only after it has taken delivery of the goods. Hence insurance coverage is Bidder's responsibility.

6. WARRANTY / GUARANTEE (GCC CLAUSE 12)

GCC 12.1 The goods shall be accompanied by manufacturer standard warranty / guarantee or 1 year, whichever is more.

GCC 12.2 The Procuring Agency shall promptly notify the Bidder in writing of any claims arising out of this warranty.

GCC 12.5 **The bidder shall separately quote the price of service contract inclusive of parts for 5 years (minimum) in term of %age for total contract value.**

7. PAYMENT (GCC CLAUSE 13)

GCC 13.1 The method and conditions of payment to be made to the Bidder under this Contract shall be as follows:

*i. For Goods supplied from within the Procuring Agency's country:*

- (a) Payment shall be made in Pak Rupees.
- (b) The payment will be made to the Bidder within 30 days of the receipt of original delivery challan(s) and invoice(s) in duplicate duly completed in all respect and signed and stamped by the Chairman of the Inspection Committee. The Inspection Committee will prepare and submit a report of physical inspection with a certificate to the effect that the goods conform to the specifications laid down in the bidding documents.

**OR**

*ii. For Goods supplied from outside the Procuring Agency's country:*

- (a) The Procuring Agency shall pay the Bidder or its Principal through irrevocable letter of credit opened in favor of the Bidder or Its Principal in a bank in its country, upon submission of all the requisite documents.
- (b) Bidder will bear all the additional bank charges inside and outside the Procuring Agency country on account of Confirmation of L/C, if he desire to establish a Confirmed L/C etc.

**OR**

*iii. For Goods supplied from outside the Procuring Agency's country:*

- (a) The Procuring Agency shall pay the Bidder or its Principal through **3 years deferred payment** by irrevocable letter of credit opened in favor

of the Bidder or Its Principal in a bank in its country, upon submission of all the requisite documents.

- (b) Bidder will bear all the additional bank charges inside and outside the Procuring Agency country on account of Confirmation of L/C, if he desire to establish a Confirmed L/C etc.

#### 8. PENALTIES/ LIQUIDATED DAMAGES (GCC CLAUSE 16)

GCC 16.1 In case deliveries are not completed within the time frame specified in the schedule of requirements / contract, a Show Cause Notice will be served on the Bidder which will be following by cancellation of the Contract to the extent of non-delivered portion of installments. No supplies will be accepted and the amount of Performance Guarantee / Security to the extent of non-delivered portion of supplies of relevant installments will be forfeited. If the firm fails to supply the whole installments, the entire amount of Performance Guarantee/Security will be forfeited to the Government Account and the firm will be blacklisted at least for two years for future participation in bids:

The liquidated damage shall be 0.5 % per week or part thereof. The maximum amount of liquidated damages shall be 10% of the amount of contract. Once the cumulative amount of liquidated damages reaches ten percent (10%) of the amount of the contract, the Procuring Agency shall rescind the contract, without prejudice to other courses of action and remedies open to it.

#### 9. "ARBITRATION" AND RESOLUTION OF DISPUTES (GCC CLAUSE 20)

GCC 20.3 Dispute resolution mechanism to be applied shall be as follows:

In case of any dispute concerning the interpretation and/or application of this Contract is to be settled through arbitration, the arbitrator to be appointed with the approval of the University's Syndicate. The decisions taken and/or award given by the sole arbitrator shall be final and binding on the Parties

#### 10. PACKING (GCC CLAUSE 21)

GCC 21.1 The packing, marking and documentation within and outside the packages shall be as per manufacturer standards meeting the safety requirements of the goods.

#### 12. GOVERNING LANGUAGE (GCC CLAUSE 22)

GCC 22.1 The language of this Contract shall be English.

#### 11. APPLICABLE LAWS (GCC CLAUSE 23)

GCC 23.1 The Contract shall be governed by the Laws of Pakistan and the Courts of Pakistan shall have exclusive jurisdiction.

12. NOTICES

***Procuring Agency's address for notice purposes:***

Additional Director Procurement  
Procurement Directorate  
Prof. Masood Hameed Khan Library Building  
Dow University of Health Sciences (Ojha Campus)  
SUPARCO Road, off Main University Road,  
Gulzar-e-Hijri, Scheme No. 33, Karachi.  
Phone No. + 92-21-99261497  
Email: director.procurement@duhs.edu.pk

***Bidder's address for notice purposes:***

Name of Bidder: \_\_\_\_\_

Name of Contact Person & Designation: \_\_\_\_\_

Phone No. \_\_\_\_\_

Fax No. \_\_\_\_\_

Mobile Phone No. \_\_\_\_\_

Email Address \_\_\_\_\_

# F: Schedule of Requirements

## 1. SCHEDULE OF REQUIREMENTS

### 1.1 For Goods supplied from within the Procuring Agency's country (DDP Basis)

- i) The entire quantity of the ordered goods shall be delivered within **30 days** or earlier from the date of issuance of supply order / contract award.
- ii) The delivery period shall start from the date of contract signature.

### 1.2 For Goods supplied from outside the Procuring Agency's country (C&F / CFR / CNF / CPT Basis):

- i. The shipment of the items of Stores which are to be imported shall be started as early as possible (**preferable within 45 days**); the shipment schedule shall be submitted along with the offer, and shall be negotiable and subject to approval by the University.
- ii. The bidder must indicate in his offer the port **from where** the Stores will be **shipped**.
- iii. The delivery period shall start from the date of opening of letter of credit.

## G: Technical Specifications

Item No.	Name of Goods, Technical Description, Specifications and Standards	Qty.
1.	<p><b>Heart Lung Machine with Online Blood Monitoring Unit</b></p> <p><b><u>Latest Version Modular Heart Lung Machine</u></b></p> <ul style="list-style-type: none"> <li>• 03 Single roller pumps +1 Twin Pump + Centrifugal pump</li> <li>• Dual Pressure module</li> <li>• Temperature module</li> <li>• Air-emboli module</li> <li>• Capacitive Level sensor</li> <li>• Ultrasonic Bubble detector</li> <li>• Flexible LED Lamp with arm</li> <li>• Mechanical Gas blender</li> <li>• Cardioplegia Monitoring Unit</li> <li>• System Control Panel</li> </ul> <p><b><u>05- Pump Console:</u></b></p> <ul style="list-style-type: none"> <li>• The Console should have a compact base place for entire pumps with small footprint.</li> <li>• Entire system should operate on battery system for a minimum of 90 Minutes For arterial pump battery backup should be 180 minute or more.</li> <li>• Battery should recharge automatically when the system is operating with main power supply.</li> <li>• 24Volt operated socket for all pumps to avoid risk.</li> <li>• Modules pump should have easy access connection for interchanging the pump with console.</li> <li>• Pump should be peristaltic for durability and convince of handling.</li> <li>• Roller pump should have a self-diagnostic circuit with provision to detect and display critical alarm conditions</li> </ul> <p><b><u>Cardioplegia monitoring unit:</u></b></p> <ul style="list-style-type: none"> <li>• It should display Volume ratio, timer, temperature, and pressure of full control of independent cardioplegia line. Master follower function and pump to stop</li> </ul> <p><b><u>Pressure Monitor: (Four Pressure Module)</u></b></p> <ul style="list-style-type: none"> <li>• Along with necessary pressure transducers Kit, cables and domes reusable, with accurate digital display and alarm facilities audio and visual.</li> </ul> <p><b><u>Temperature Monitor:</u></b></p> <ul style="list-style-type: none"> <li>• 04 temperature displays on Control panel for patient monitoring and for cardioplegia monitoring with digital display in Celsius with 04 necessary compatible temperature probes 2x esophageal (Adults &amp; Peads) 2x oxygenator (Adult &amp; Peads)</li> </ul> <p><b><u>Capacitive Level sensor &amp; Ultrasonic Air Bubble detection :</u></b></p> <ul style="list-style-type: none"> <li>• With alarm settings. Should be able to provide both alert alarm for audible and visual alarms or low blood level alarm</li> <li>• Level sensor pads 100 pcs</li> </ul>	01 No.

Item No.	Name of Goods, Technical Description, Specifications and Standards	Qty.
	<ul style="list-style-type: none"> <li>• Micro –bubble detection: 300 micrometer.</li> </ul> <p><b><u>Centrifugal Pump:</u></b> Centrifugal Pump system should be used as a fully independent stand-alone unit and can be use as part of heart lung machine. Triple power supplies i.e. mains, Heart Lung, or own batteries.</p> <ul style="list-style-type: none"> <li>• Flow and bubble measuring function must be integral part of the Console</li> <li>• Emergency drive, a manual drive (hand crank) with speed indicator</li> <li>• Specialized ECMO unit certified by FDA/CE/MHLW for 7/14 days or more</li> <li>• Constant flow mode of operation</li> <li>• Suitability for pulsatile operation</li> <li>• Priming: 40 ml or less</li> <li>• Trolley imported from Manufacturer</li> </ul> <p><b><u>Stand-Alone Online Arterial And Venous Blood Monitoring :</u></b></p> <ul style="list-style-type: none"> <li>• LCD display of 10.4 touch screen monitor “</li> <li>• Measurement of Hemoglobin, Arterial partial pressure of oxygen, Arterial temperature. PaO<sub>2</sub>,</li> <li>• Measurement of line, Hemoglobin, hematocrit, PaO<sub>2</sub> , SvO<sub>2</sub> , VO<sub>2</sub> , Q-Blood</li> <li>• Interface for PC Connection Rs-232 Input /output</li> <li>• USB Connection for Printer</li> <li>• Integrated barcode scanner.</li> </ul> <p><b><u>Hypo / Hyper Thermia Unit:</u></b></p> <ul style="list-style-type: none"> <li>• System should be latest Version with temperature control of oxygenator, heat exchanger, patient blanket and cardioplegia delivery system.</li> <li>• Temperature gradient facility for both patient and Cardioplegia side</li> <li>• Water temperature range: 1-40 °c accuracy: +/-0.3 deg/ C</li> <li>• Tank volume capacity : 25 liters or better</li> <li>• Compressor will automatically start if a shortage of ice in the tank.</li> <li>• UV-light for disinfect internal water tubing and hoses with 99.9 % bacterial or viral destruction or equivalent</li> </ul> <p><b><u>Accessories :</u></b></p> <ul style="list-style-type: none"> <li>• Two reusable Thermal Blankets (Adults &amp; Peads each)</li> <li>• External Temperature sensor.</li> </ul>	
2.	<p><b>Convection Warmer</b></p> <p>The adult convection warming blanket for use in pre-operative care, intra-operative care, post-operative care, and outpatient care. With full coverage for patients of all sizes with extra material for the shoulders and feet. The foot drape to reduces the risk of thermal injury.</p>	10 Nos.

Item No.	Name of Goods, Technical Description, Specifications and Standards	Qty.
3.	<p><b>External Pacemaker Dual Chamber</b></p> <p>Dual chamber multi-mode temporary 'pacemaker for cardiac Pacing</p> <p><b>OPERATING FEATURES and CHARACTERISTICS:</b>  LCD display of all pacing, sensing and warning indicators</p> <p><b>PARAMETERS:</b>  Multi-mode: all combinations of atrial, ventricular &amp; dual; AA, VV, DD, A0, VO, DO, DV  Adjustable pacing rate adjustment upto 150 ppm  Adjustable pacing voltage upto 10V  Sensitivity control upto 8mV  Pulse width upto 1.5 m sec</p> <p><b>OTHER FEATURES:</b>  Portable  Accessories including case and cables</p> <p><b>OPERATING REQUIREMENTS:</b>  Standard alkaline battery operation  Backup operation during battery change</p>	4 Nos.
4.	<p><b>GAS FLOW ANALYZER</b></p> <p>This unit should be measure Bi-directional flow, pressure, volume, and oxygen concentration, and pressure measurements.  Included Windows-compatible graphics software.  All 21ventilator parameters displayed at once on one screen.  Low- and high-pressure, and flow measurement capability.  Special HF mode—up to 900 BPM (15 Hz).  RS-232 and printer ports.  Minimum, maximum, average, absolute, and graph for all parameters.  Operation by user-friendly VT PLUS HF command mode or special RT-200 command mode.  Multiple special-function tests for efficient troubleshooting.</p> <p><b>Power:</b> 100 V ac to 240 V ac, 50/60 Hz</p> <p><b>Maximum Over-Voltage:</b> 264 Vac</p> <p><b>DISPLAY</b>  320 x 240 LCD with CFL backlight  <b>Viewing Area:</b>10.1 cm x 8.2 cm (3 in x 4 in)  <b>Operational Modes:</b> Manual mode, for simple tests or troubleshooting  Computer-control mode, using RS-232serial port for special applications  Use of VT PLUS HF with VT Plus for Windows, for recording graphs and logging data to a computer</p> <p><b>OXYGEN MEASUREMENT</b>  <b>Range:</b>0 % to 100 %  <b>Accuracy:</b>±2 % FSO</p>	01 No.

Item No.	Name of Goods, Technical Description, Specifications and Standards	Qty.
	<p><b>Resolution:</b>0.1 % O<sub>2</sub>  <b>Transducer Location:</b> Internal</p> <p><b>Gas Compatibility:</b> Air, O<sub>2</sub>, CO<sub>2</sub>, N<sub>2</sub>, N<sub>2</sub>O, He, mixtures or user-defined</p> <p><b>Gas Reference Units:</b> ATP, STPD<sub>0</sub>, STPD<sub>21</sub> and BTPS</p> <p><b>Output Ports:</b> RS-232 serial port and parallel printer port</p> <p><b>TEST PARAMETERS</b></p> <p><b>Continuous Flow:</b> Low Flow: ± (2 % of reading and 1 % of range)  High Flow: ± (2 % of reading and 1 % of range)</p> <p><b>VOLUMETRIC FLOW</b></p> <p><b>Low-Flow:</b>  Flow Range: -25 lpm to 25 lpm  Accuracy: ± 1 % of range  Frequency Response: &gt; 25 Hz or t<sub>10-90</sub>  &lt; 40 ms, whichever is greater  Low Flow Dropout: 0.01 lpm  Breath-Defect Threshold: 0.5 lpm  Maximum-Flow Rate: 50 lpm  Volume Range: &gt; ± 60 L  Sample Rate: 100 Hz  Resolution: 0.01 lpm flow &gt; 1 lpm; 0.001 lpm flow &lt; 1 lpm  Dynamic resistance: &lt; 2.5 cmH<sub>2</sub>O @ 5Lpm  Fittings: 15 mm OD, 1:40 conical male; 0.25 in NPT ID per ASTM F-1054 aluminum with black anodized finish</p> <p><b>Notes:</b>  Tidal-volume accuracy: ± 3 % of reading or ± 2 ml, whichever is greater  Volume accuracy tested to 1 liter  Flow accuracy is specified for dry air or oxygen  Below 3.0 lpm, measurement accuracy is obtained by allowing the VT PLUS HF to fully warm up or manually zeroing before reading or documenting measurement</p> <p><b>High-Flow:</b>  Flow Range: -300 lpm to 300 lpm  Accuracy: ± 2 % of reading or ± 2 % of range, whichever is greater  Frequency Response: &gt; 25 Hz  High-Flow Dropout: 25 lpm  Breath-Detect Threshold: 2 lpm  Maximum-Flow Rate: 500 lpm  Volume Range: &gt; ± 60 L  Dynamic Resistance: &lt; 2 cmH<sub>2</sub>O @ 60 lpm  Sample Rate: 100 Hz  Resolution: 0.01 lpm  Fittings: 22 mm OD, 1:40 conical male; 15 mm ID, 1:40 conical female per ASTM F-1054 aluminum with black anodized finish</p>	

Item No.	Name of Goods, Technical Description, Specifications and Standards	Qty.
	<p><b>Notes:</b> Tidal-volume accuracy: <math>\pm 3\%</math> of reading or <math>\pm 10</math> ml, whichever is greater Volume accuracy tested to 7 liters Flow accuracy is specified for dry air or oxygen</p> <p><b>Low-Pressure:</b> Range: <math>\pm 500</math> mmHg (10 psi) Accuracy: <math>\pm 0.8\%</math> of reading or <math>\pm 1.5</math> mmHg, whichever is greater Frequency Response: <math>&gt; 10</math> Hz Resolution: 0.1 mmHg Fittings: Luer lock, stainless steel Maximum Applied Pressure: 60 psi Sample Rate: 100 Hz Operating Pressure: 30 psi</p> <p><b>Note:</b> Fluid pressure may be applied to the positive port; however, fluids should be kept from entering the pressure port by using a suitable length of connection tubing</p> <p><b>High-Pressure:</b> Maximum Applied Pressure: 150 psi Range: <math>\pm 100</math> psi Accuracy: <math>\pm 1\%</math> of reading or <math>\pm 0.3</math> psig, whichever is greater Frequency Response: <math>&gt; 10</math> Hz Resolution: 0.1 psi Sample Rate: 100 Hz Fittings: DISS connector, stainless steel</p> <p><b>Airway-Pressure:</b> Maximum Applied Pressure: 20 psi Range: <math>\pm 120</math> cmH<sub>2</sub>O Accuracy: <math>\pm 0.75\%</math> of reading or <math>\pm 0.5</math> cmH<sub>2</sub>O, whichever is greater Frequency Response: <math>&gt; 25</math> Hz or <math>t^{10-90} &lt; 40</math> ms, whichever is greater Resolution: 0.1 cmH<sub>2</sub>O Fittings: Internally connected at the transducer distal end</p> <p><b>Note:</b> Airway pressure is internally tapped off the proximal-flow sensor port, which is the port closest to the exhaust port on the VT PLUS HF</p> <p><b>VENTILATOR PARAMETER</b></p> <p><b>Inspiratory and Expiratory Tidal Volume:</b> Range: As specified in high-flow/low-flow. Spec Accuracy: As specified in high-flow/low-flow spec</p> <p><b>Expiratory Minute Volume:</b> Range: 0 L to 60 L -- Accuracy: <math>\pm 3</math> of % or 250 ml</p> <p><b>Breath Rate:</b> Range: 0.5 BPM to 150.0 BPM -- Accuracy: <math>\pm 1</math> of %</p>	

Item No.	Name of Goods, Technical Description, Specifications and Standards	Qty.
	<p><b>Inspiratory-to-Expiratory Time Ratio (I:E Ratio):</b> Range: 1:200 to 200:1 -- Accuracy: <math>\pm 2\%</math> or <math>\pm 0.1</math> s</p> <p><b>Peak Inspiratory:</b> <b>Pressure:</b> Range: <math>\pm 120</math> cmH<sub>2</sub>O -- Accuracy: <math>\pm 3\%</math> or <math>\pm 1</math> cmH<sub>2</sub>O</p> <p><b>Inspiratory Pause</b> <b>Pressure:</b> Range: <math>\pm 120</math> cmH<sub>2</sub>O -- Accuracy: <math>\pm 3\%</math> or <math>\pm 1</math> cmH<sub>2</sub>O</p> <p><b>Mean Airway Pressure:</b> Range: <math>\pm 80</math> cmH<sub>2</sub>O -- Accuracy: <math>\pm 3\%</math> or <math>\pm 0.5</math> cmH<sub>2</sub>O</p> <p><b>Positive End-Expiratory Pressure (PEEP):</b> Range: -5 to 40 cmH<sub>2</sub>O -- Accuracy: <math>\pm 3\%</math> or <math>\pm 0.5</math> cmH<sub>2</sub>O</p> <p><b>Lung Compliance:</b> Range: 0 to 150 ml/cmH<sub>2</sub>O -- Accuracy: <math>\pm 5\%</math> or <math>\pm 5</math> ml/cmH<sub>2</sub>O</p> <p><b>Inspiratory Hold Time:</b> Range: 0 s to 60 s -- Accuracy: <math>\pm 1\%</math> or <math>\pm 0.1</math> s</p> <p><b>Expiratory Hold Time:</b> Range: 0 s to 90 s -- Accuracy: <math>\pm 1\%</math> or <math>\pm 0.1</math> s</p> <p><b>Flow Bias:</b> Range: 0 lpm to 30 lpm -- Accuracy: <math>\pm 2\%</math> or <math>\pm 0.5</math> lpm</p>	
5.	<p><b>Vital Signs Simulator</b></p> <ul style="list-style-type: none"> <li>• The unit should be -in-one patient simulator 80 % smaller and 17 lbs./7.7 kilos lighter than single function simulator test tools</li> <li>• 8-in-1 multifunction patient simulator is a combination ECG simulator, fetal simulator, arrhythmia simulator, respiration simulator, temperature simulator, IBP simulator, cardiac output simulator, cardiac catheterization simulator, NIBP simulator, SpO<sub>2</sub> tester, and is the premier SpO<sub>2</sub> simulator to test Rainbow multi-wavelength waveforms</li> <li>• Stay-connected ECG posts for easy/secure ECG snap and lead connections</li> <li>• Custom SpO<sub>2</sub> r-curve for accurate testing of the latest and future oximetry technologies</li> <li>• Static pressure linearity testing</li> <li>• Repeatable NIBP simulation for dynamic pressure repeatability testing</li> <li>• Physiologically synchronized pulses across all parameters</li> <li>• Optional PC-interface software offers customizable procedures/checklists and automated data capture/storage</li> </ul>	01 No.

Item No.	Name of Goods, Technical Description, Specifications and Standards	Qty.
	<ul style="list-style-type: none"> <li>Wireless communication for remote PC control of test device, as well as data transfer and automated regulatory reporting</li> </ul> <p><b>Temperature</b>  <b>Operating:</b> 10 °C to 40 °C (50 °F to 104 °F)  <b>Storage:</b> -20 °C to +60 °C (- 4 °F to 140 °F)</p> <p><b>Humidity:</b> 10 % to 90 % non-condensing</p> <p><b>Altitude:</b> 3,000 meters (9,843 ft)</p> <p><b>Display:</b> LCD color display</p> <p><b>Communication</b>  <b>USB device upstream port:</b> Mini-B connector for control by a computer  <b>USB host controller port:</b> Type A, 5 V output, 0.5 A max load.  Connector for keyboard, barcode reader, and printer  <b>Wireless:</b> IEEE 82.15.4 for control by a computer  <b>Power:</b> Lithium-ion rechargeable battery  <b>Battery Charger:</b> 100 V to 240 V input, 15 V/2.0 A output. For best performance, the battery charger should be connected to a properly-grounded ac receptacle  <b>Battery Life:</b> 9 hours (minimum), 100 NIBP cycles typical</p>	
6.	<p><b>Defibrillator / Pacemaker Analyzer</b></p> <p>This unit should be Low, Edmark, trapezoidal, biphasic and pulsed-biphasic defibrillation technology compatibility  Flexible heart-rate settings (1BPM step)  First-in-class accuracy <math>\pm 1\%</math> of reading + 0.1J  Long lasting, rechargeable battery  AED compatibility  12-lead ECG simulation  Ability to test external transcutaneous pacemakers (Impulse 7000 DP only)  Internal pacer brand selections</p> <p><b>Temperature, Operating:</b> 10 °C to 40 °C (50 °F to 104 °F)  <b>Display:</b> LCD display  <b>Battery Charger:</b> 100 V to 240 V input, 15 V/1.5 V A output. For best performance, the battery charger should be connected to a properly grounded ac receptacle  <b>Enclosure:</b> ABS plastic housing  <b>Communications:</b> USB device port for computer control  <b>Modes of Operation:</b> Manual and remote  <b>Power:</b> Internal rechargeable NiMH battery pack for nine hours (typical) operation after full charge or the battery charger can operate the analyzer</p>	01 No.

Item No.	Name of Goods, Technical Description, Specifications and Standards	Qty.
	and charge the battery simultaneously <b>Temperature, Storage:</b> -20 °C to +60 °C (-4 °F to +140 °F) <b>Humidity:</b> 10 % to 90 % non-condensing	
7.	<p><b>Infusion Device Analyzer</b></p> <p>Integrated carrying handle and lightweight (2.7 lb) for easy portability            Average and instantaneous flow measurement            Occlusion pressure measurements to 45 psi            Maximize accuracy with Autostart mode enabling unit to begin testing only when fluid is detected            Battery powered with up to 10 hours of continuous operation for on-the-go operation            LCD touch screen for ease of use            Compatible with a wide variety of infusion pumps            Based on technology that is proven and trusted worldwide            On-board memory allows test results storage instantly            Hydrograph graphical software to control unit, display results and print results via PC            Global sales, service and support</p> <p><b>Flow rate measurement</b>  <b>Accuracy:</b> 1 % of reading <math>\pm 1</math> LSD for flows of 16 ml/h to 200 ml/h for volumes over 20 ml, otherwise 2 % of reading <math>\pm 1</math> LSD for volumes over 10 ml under laboratory conditions.  <b>Technique:</b> Flow is calculated by measuring volume over time  <b>Range:</b> 0.5 ml/h to 1000 ml/h  <b>Max test duration:</b> 10 hours on battery</p> <p><b>Volume measurement</b>  <b>Technique:</b> Volume measured directly by the measuring module in minimum sample sizes of 60 microliters  <b>Accuracy:</b> 1 % of reading <math>\pm 1</math> LSD for flow rates of 16 ml/h to 200 ml/h for volumes over 20 ml. Otherwise 2 % of reading <math>\pm 1</math> LSD for volumes over 10 ml under laboratory conditions.  <b>Range:</b> 0.06 ml to 999 ml</p> <p><b>Max test duration:</b> 10 hours on battery</p> <p><b>Pressure measurement</b>  <b>Range:</b> 0 psi to 45 psi or equivalent in mmHg and kPa  <b>Accuracy:</b> 1 % of full scale <math>\pm 1</math> LSD under laboratory conditions  <b>Max test duration:</b> 30 minutes  <b>Technique (Occlusion test):</b> Direct measurement of pressure at the inlet port</p>	01 No.

Item No.	Name of Goods, Technical Description, Specifications and Standards	Qty.
	<p><b>General specifications</b>  <b>Storage of results:</b> Test results stored for later viewing, printing or transfer to PC.  Typical practical capacity: 100 tests</p> <p><b>Power Down:</b> The results of tests in progress will be saved in the case of accidental power down</p> <p><b>Computer control:</b> The Product can be fully controlled from a PC using HydroGraphV3 software for IDA-1S</p> <p><b>Battery power:</b> 4 x Panasonic HHR210ABNiMh 2000 mAh batteries</p> <p><b>Charger</b>  Operating voltage range: 100V ac to 240V ac  Supply frequency: 50Hz / 60 Hz  Supply power: &lt;20 VA</p>	
8.	<p><b>Electrical Safety Analyzer</b></p> <p>Utilizing Vision-Pad Technology TM.  Hi-resolution Graphical User Interface  Large, bold fonts for easy reading of test results Icon based test functions.  On-line Test Procedure display capability  Touch screen interface with optional keypad or mouse  Unlimited user comments in test records  Wireless communication to PC and Printer  Up to 32 Gbyte storage  Apps-based upgrade path.</p> <p><b>Product features:</b>  Automated and Manual Electrical Safety Testing per IEC 62353, AS 3551, AAMI/ANSI ES-1 and IEC 60601 standards USB, RS-232 and wireless communication DA-COM RS-232 multi-device external control  Extensive internal storage Unlimited user comments in test records  Complete test procedures available instantly Integrated ECG&amp; Arrhythmia Simulator Automated Testing Sequences for defibrillators, infusion devices, patient monitors. All Auto sequences and Checklists are 100% editable for total procedural customization Internal test record storage Automatic “flagging” of test results that are outside of pre-established test limits Prints test result reports &amp; inspection stickers  Reduces paperwork, eliminates handwritten records, standardizes medical device testing Increases quality and accuracy Increases throughput – saves more than 50% over manual testing &amp; hand-written records Core element of MEI Test SystemTM CMMS compatible.</p>	01 No.

Item No.	Name of Goods, Technical Description, Specifications and Standards	Qty.
9.	<p><b>ETT Machine</b></p> <p>Complete with Stress ECG/ NIBP Device, Medical Treadmill , Latest Computer, Printer Monitor and Trolley</p> <p><b><u>Specifications/ Feature:</u></b></p> <ul style="list-style-type: none"> <li>• Simple, user friendly software with multiple functions</li> <li>• PC Connection of ECG Device: Wireless Bluetooth.</li> <li>• Should have the Blood Pressure Monitor With Wireless Connectivity (Optional)</li> <li>• Precise QRS classification</li> <li>• Built-in expert system</li> <li>• Short and long resting ECG record</li> <li>• Color-coded ST level, slope and ST loop graphs</li> <li>• SAECG</li> <li>• MET - VO2 computation</li> <li>• HR, BP, load, MET graphs</li> <li>• Various printable reports</li> <li>• Customizable alarm and stop criteria</li> <li>• Ergometer and Treadmill database</li> <li>• Comparing measurements</li> <li>• DICOM, GDT, MFER</li> <li>• Local and network operation</li> <li>• Export and import functions</li> <li>• ECG channels: 12 simultaneous.</li> <li>• Sampling rate: 1000 Hz.</li> <li>• A/D resolution: 16 bit.</li> <li>• Frequency response: 0.05-150 Hz.</li> <li>• Power supply: 2 X 1.2 V rechargeable batteries.</li> <li>• Built-in expert system to give precise diagnosis.</li> <li>• Alarm to detect electrode falling off.</li> <li>• <b>Ergometer and Treadmill database.</b> Besides 17 ergometer and 18 treadmill built-in protocols, the software also contains Master-Step and Walking Test. All protocols have been tested.</li> </ul>	01 No.
10.	<p><b>Ambulatory (Holter) HR ECG Monitoring System: Complete With Computer, Software and Holter Devices (04 Nos)</b></p> <p><b><u>Specifications/ Feature:</u></b></p> <ul style="list-style-type: none"> <li>• Fast record analysis</li> <li>• Should have FDA 510K certificate</li> <li>• Simple, user friendly software with multiple functions</li> <li>• Precise QRS classification and rhythm analysis</li> <li>• QRS template classification</li> <li>• Arrhythmia analysis, arrhythmia overview</li> </ul>	01 No.

Item No.	Name of Goods, Technical Description, Specifications and Standards	Qty.
	<ul style="list-style-type: none"> <li>• Color coded graphs</li> <li>• ST level and slope analysis</li> <li>• QT analysis</li> <li>• Heart Rate Variability analysis (Time and frequency domain)</li> <li>• Heart Rate Turbulence analysis</li> <li>• Atrial Fibrillation analysis</li> <li>• Microvolt T</li> <li>• Pacemaker analysis</li> <li>• BP record analysis using multiple computed parameters and graphs</li> <li>• Various Holter reports</li> <li>• GDT</li> <li>• Local, network operation</li> <li>• Export, import functions</li> <li>• Full-disclosure ambulatory ECG records</li> <li>• 2 independent channels</li> <li>• Compact size, lightweight, graphic LCD display</li> <li>• Wireless (Bluetooth) communication with PC</li> <li>• Patient event</li> <li>• Recording duration: 24, 48, 72 hours</li> <li>• PC connection: Bluetooth, USB</li> <li>• Sampling rate: 128, 256, 512, 1024 Hz</li> <li>• Recording rate: 128, 256, 512, 1024 Hz</li> <li>• ADC resolution: 16 bit</li> <li>• Dynamic range: +/- 20 mV</li> <li>• Power supply: 1 X 1.2 V AAA</li> </ul>	
11.	<p><b>Ambulatory B.P Monitoring System Complete With Computer, Software and Holter Devices (04 Nos)</b></p> <ul style="list-style-type: none"> <li>• Fast record analysis</li> <li>• Simple, user friendly software with multiple functions</li> <li>• Precise QRS classification and rhythm analysis</li> <li>• QRS template classification</li> <li>• Arrhythmia analysis, arrhythmia overview</li> <li>• Colour coded graphs</li> <li>• ST level and slope analysis</li> <li>• QT analysis</li> <li>• Heart Rate Variability analysis (Time and frequency domain)</li> <li>• Heart Rate Turbulence analysis</li> <li>• Atrial Fibrillation analysis</li> <li>• Microvolt T alternans</li> <li>• Pacemaker analysis</li> <li>• BP record analysis using multiple computed parameters and graphs</li> <li>• Various Holter reports</li> <li>• GDT</li> </ul>	01 No.

Item No.	Name of Goods, Technical Description, Specifications and Standards	Qty.
	<ul style="list-style-type: none"> <li>• Local, network operation</li> <li>• Export, import functions</li> <li>• Method of measurement: oscillometry with step deflation</li> <li>• Blood Pressure measurement interval: 25 - 260 mmHg</li> <li>• Accuracy: ± 3mmHg</li> <li>• PC connection: MIni USB interface; Bluetooth</li> <li>• Power supply: 2 X 1.2 V rechargeable batteries</li> <li>• Stores 250 BP measurements, up to 48 hours</li> <li>• Interval settings: 10, 15, 30, 45, 60, 90 min.</li> <li>• Option for patient event BP measurements</li> <li>• Oscillometric method with step deflation</li> <li>• Rechargeable batteries for economic operation</li> <li>• Automatic analysis for precise diagnosis</li> <li>• Digital signal storage in the solid state memory</li> <li>• Precise systole and diastole values</li> <li>• Values displayed in tables, pie charts, graphs, histograms</li> <li>• Various editing and printing possibilities</li> <li>• Simple, user-friendly interface</li> </ul>	
12.	<p><b>Vital Sign Monitor (Adult, Pediatrics &amp; Neonatal) With ECG/SPO2 /NIBP/RESP And TEMP Complete with All Standard Accessories</b> Should have FDA With 510K certificate</p> <p><b><u>Specifications/ Feature:</u></b></p> <ul style="list-style-type: none"> <li>• ECG</li> <li>• NIBP</li> <li>• SpO2</li> <li>• Respiration</li> <li>• Temperature</li> <li>• Color TFT touch screen display.</li> <li>• Size/ Dimensions : 13” x 15” Or better.</li> <li>• Manual/Automatic/Continuous measurement of NIBP</li> <li>• Applications from Neonate,</li> <li>• SpO2 Masimo Technology</li> <li>• 3/5/ 12-lead ECG waveform synchronously displays high precision ECG measurement technology, assisting in precise diagnosis of patients.</li> <li>• Intelligent alarm management allows auto identification of alarm level and self-adjusts proper alarm time to reduce false alarms.</li> <li>• Network capability</li> <li>• Handwriting pen, SD card and USB interface available for your convenience.</li> <li>• Rechargeable Lithium Ion battery allows for over 4 hours of continuous working time.</li> <li>• Monitor should be quoted with 2 X IBP , Cardiac Output And ETCO2</li> </ul>	35 Nos.

Item No.	Name of Goods, Technical Description, Specifications and Standards	Qty.
13.	<p><b>Defibrillator</b></p> <ul style="list-style-type: none"> <li>• 7” color graphic TFT LCD display</li> <li>• 360 J energy, Biphasic Waveform Technology</li> <li>• Built-in standard 12-lead ECG</li> <li>• Synchronous or asynchronous mode</li> <li>• Semi-automatic (AED) or manual control</li> <li>• Operation from paddles</li> <li>• Short charging time, typically 2.7 secs to 200 J , 4.5 secs to 360 J</li> <li>• Alarm functions</li> <li>• 3-channel high-resolution recorder</li> <li>• Optional transcutaneous pacemaker</li> <li>• Optional SpO2, NIBP</li> <li>• Optional electrodes for internal defibrillation</li> <li>• Battery Capacity More than 5 hours continuous monitoring or 200 shocks at 200J Indicator 5-stage indicator on screen and LED indicator when turned off, Must be Charge time Less than 2 hours for full charge.</li> <li>• Report Browser Software On PC, from exported USB data.</li> </ul>	15 Nos.
14.	<p><b>ECG MACHINE 12 CHANNELS</b></p> <ul style="list-style-type: none"> <li>• 12 lead interpretative ECG.</li> <li>• 5.6" graphic LCD</li> <li>• 3/6/12ch ECG recording.</li> <li>• Multi-languages</li> <li>• Built-in high resolution printer</li> <li>• Rechargeable battery About 3 Hours With fully charge battery.</li> <li>• Storage memory for 50ECGs,Option(1GB SD card):5000ECGs</li> <li>• Software management system[PC Interface:RS232, LAN</li> <li>• Full alphanumeric capability keyboard</li> <li>• Firmware upgrade using USB memory stick</li> <li>• A4size z-fold type ECG recording paper.</li> <li>• One-button operation for acquisition, analysis, storage and printing.</li> <li>• LCD preview of ECG signal appear a false lead and signal noise.</li> <li>• Full alphanumeric keyboard for operation convenience.</li> <li>• Real-time continuous recording capability of 3,6,12 channels.</li> <li>• Using the RS232, LAN or SD card , ECG can be transmitted to PC from the cardiograph for ECG management.</li> <li>• Server /client network service capability</li> <li>• Image ( Jph or bmp) report printing capability</li> </ul>	10 Nos.
15.	<p><b>Automatic Ankle Brachial Index (ABI) System</b></p> <p><b>a- ABI System (1 No)</b>  ABI process and provides automatic, easy, fast and accurate measurements with an immediate printout of results from the integral printer or optional DR4 software package.</p>	1 Set

Item No.	Name of Goods, Technical Description, Specifications and Standards	Qty.
	<p>Should records the ankle pulse volume waveforms which provide pictorial evidence to aid a clinician's diagnosis; this is of particular value in patients who are prone to arterial calcification, such as diabetics.</p> <p>Measurement of ABI:</p> <ul style="list-style-type: none"> <li>• Rapid measurements in 3 mins</li> <li>• No need to rest the patient</li> <li>• Can be used by healthcare support staff</li> <li>• Reduces inappropriate referrals</li> <li>• Immediate printouts</li> <li>• Printouts and archiving of results with DR4 software package</li> </ul> <p><b>b- ANKLE BRACHIAL INDEX KIT – (1 No.)</b> Included: Digital Doppler Medical grade recharging kit Widebeam 8MHz Doppler probe 5 MHZ Doppler probe Trigger operated sphyg Arm/Ankle cuffs (standard and large: latex free) Educational CD Large carry bag</p> <p><b>c- Ankle And Toe Pressure Kit – (1 No.)</b> ATP Kit includes: Digital Doppler Medical grade recharging kit Wide-beam 8MHz Doppler probe APPG probe and adaptor Toe cuffs &amp; inflator Arm/Ankle cuffs (standard and large: latex free) Trigger operated sphyg Neuropen &amp; box of tips (includes 10g monofilament) Educational CD Large carry bag</p> <p><b>d- Vascular Doppler with 10 MHz Probe &amp; Re-chargeable Battery (1 No.)</b> High resolution Display Bi-directional waveform generated from the digital Doppler spectrum with auto scaling feature Maximises accuracy and clarity of waveforms; essential for patients with poor blood flow. Scroll facility to review your test and choose the ideal waveforms. Arterial and Venous modes.</p>	

Item No.	Name of Goods, Technical Description, Specifications and Standards	Qty.
16.	<p><b>X-Ray Illuminator (LED) Two Banks</b></p> <p>High frequency slim X-Ray Film Viewer  Advanced technology application and Auto Film Activation  Separate control for different single bank when it is more than one banks  Super Luminance 4000 cd / m<sup>2</sup>  Color temperature over 12000 k  Brightness can be controlled by pressing key in four steps  LED life 100,000 hours  Size (L x W x T mm): 854 x 502 x 24  With LED light source  (Imported)</p>	15 Nos.
17.	<p><b>X-Ray Illuminator (LED) Four Films</b></p> <p>High frequency slim X-Ray Film Viewer  Advanced technology application and Auto Film Activation  Separate control for different single bank when it is more than one banks  Super Luminance 4000 cd / m<sup>2</sup>  Color temperature over 12000 k  Brightness can be controlled by pressing key in four steps  LED life 100,000 hours  Size (L x W x T mm): 1568 x 502 x 24  With LED light source  (Imported)</p>	05 Nos.
18.	<p><b>Phototherapy System</b></p> <p>Constantly monitors UV and electrical power levels with real time readings  Assures Optimal treatment times</p> <p>Microprocessor controlled sensors  Viewing window to monitor patient during treatment  Safety screen snaps out for easy lamp replacement  Hand rail and non-skid floor for patient safety  Raised floor for proper treatment of lower legs  Perimeter flow ventilation for increased patient comfort  Safety interlock automatically shuts unit off when door of phototherapy system is open  Watchdog circuitry automatically shuts off unit if potential malfunction detected  Combination Narrowband UVB / UVA Unit  Equipment with 24 Narrowband UVB lamps and 24 UVA  Dimension: 46" W x 49" D x 85" H</p> <p>All parts (excluding lamps) and labor 5 years warranty</p>	01 No.

Item No.	Name of Goods, Technical Description, Specifications and Standards	Qty.
19.	<p><b>IPL &amp; PIP Toning System</b></p> <p><b>Key Features</b></p> <ul style="list-style-type: none"> <li>• PIP (Pulse In Pulse)</li> <li>• Safety secured by the low voltages.</li> <li>• Perfect square pulse performance</li> <li>• User friendly interface</li> <li>• Instant high peak power</li> </ul> <p><b>Indications</b></p> <ul style="list-style-type: none"> <li>• Very light pigment</li> <li>• Toning</li> <li>• Hair removal</li> <li>• PIH treatment</li> <li>• Melasma</li> <li>• Vascular lesion</li> <li>• Acne</li> </ul> <p><b>System Specifications</b></p> <p>Laser Category: Multi-Waved AR(IPL) System  Laser Source: Xenon Flash Lamp  Wavelength: 560nm / 585nm / 700nm --- 430nm(Option)  Energy Density: Max 40 J/cm<sup>2</sup>  Spot Size: 13mm X 40mm  Hand piece: Contact Cooling System, Ergonomic Low-Weight, Water Cooled Waveguide  Repetition: 0.5Hz  Display: Touch Screen LCD 8”  Electrical Requirement 220V / 50~60Hz</p>	01 No.
20.	<p><b>Centrifuge Machine with Rotors</b></p> <p>Compatible with PRP Kits</p>	01 No.
21.	<p><b>Platelet Rich Plasma (PRP) Kits</b></p> <p>Compatible with Centrifuge Machine with Rotor  A 5 year Rate Contract (extendable) will be signed with the bidder.</p>	50 Kits
22.	<p><b>FUE Machine ( with punch and its blades)</b></p> <p>Automatic motorized punching device to extracts grafts for FUE technique.  Consist s of a motorized hand piece that moves a pun ch of 0.8-1.3 mm in diameter with an alternating rotation movement.  Punch rotates automatically in alternating direction  Avoid twisting and damaging hair grafts when the punch penetrates the skin.  Rotation speed of the punch adjustable. Speed from 4 to 10 revolutions</p>	01 No.

Item No.	Name of Goods, Technical Description, Specifications and Standards	Qty.
	<p>per second. Rotation angle of the punch adjustable from 22° to 540°. Thin walled punch. Touch screen easily to control and operate.</p>	
23.	<p><b>Dermatome with Mesh Graft</b></p> <p>Pneumatic air dermatome For clinical use Precise thickness of cut from 0 to .030 inch ( 0. To 0.78 mm) in easily adjusted .002 inch (0.05 mm) increments Maintaining consistent calibration Width setting from 1 to 4 inches (2.5 to 10 cm) I inch (25 cm) increments. Blade can be accurately and easily inserted without damaging cutting edge. Nitrogen power hose exhausts 10 feet (3 m) away from surgical site. The meshgraft dermatome system. Skin crafts provides for early and rapid skin. Coverage of large cutaneous defects when minimal donor sites are available. Expansion ration: 1½ to 1 Expansion ration: 3 to 1 Expansion ration: 6 to 1 Expansion ration: 9 to 1</p>	01 No.
24.	<p><b>Fluid Warmer Cabinet (Large Size)</b></p> <ol style="list-style-type: none"> <li>1. Warm infusion &amp; blood products up to the patient's body temperature.</li> <li>2. To accept all standard IV sets.</li> <li>3. No consumable requirement.</li> <li>4. Suitable to warm IV fluids up-to 40°C/104 °K in 30-60 minutes</li> <li>5. Dual temp. sensors.</li> <li>6. Accuracy of + 1°C</li> <li>7. Should have audio-visual alarm for high temp.</li> <li>8. Should work continuously for 8 hours.</li> </ol>	2 Nos.
25.	<p><b>Autoclave Machine</b></p> <p>Chamber Size / Volume: Ø 25 cm x 35 cm length / 18 liters Load: 6 kg instruments / 2 kg textiles Extra-large colour-touch-display for quick program selection, options settings, individualization of the display colour etc.</p> <p><b>Twin Chamber Technology</b> Fitted with a high-quality, double-wall sterilization chamber as used in the large hospital-based autoclaves. The sterilization chambers should be preheated by using the sterilization stream.</p>	02 Nos.

Item No.	Name of Goods, Technical Description, Specifications and Standards	Qty.
	<p><b>High-quality sterilization</b> High-quality sterilization is the result of the combination of a high-performance vacuum system and best quality steam. The twin chamber technology use to enable quick air evacuation from the sterilization chamber, sterilization packaging and instrument cavities. At the same time, the air is evacuated from the steam very effectively.</p> <p><b>Sterilization Time</b> 20 minutes in Quick-Program for the sterilization of wrapped instruments. 10 minutes in Quick-Program for the sterilization of unwrapped. Both times include fractionated pre-vacuum and drying. 30 minutes for load of up to 7 kg of instruments</p> <p>Vacuklav 41 B+, Melag Germany or at least equivalent</p>	
26.	<p><b>Lead Apron with Thyroid Protector</b></p> <p>Prices for each available size must be quoted separately Best quality Imported</p>	20 Nos.
27.	<p><b>Diathermy Unit Mono &amp; Bipolar</b></p> <p>Microprocessor based electrosurgical unit for normal and under water cutting usages. Automatic self test function. Operation in Radio Frequency range. Controls for cutting, mono/bipolar coagulation, spray and blends. Mono polar cutting power of 300 watts. Mono polar coagulation power of 100 Watts. Bipolar coagulation power of 50 Watts. Spray coagulation mode. Floating output with bipolar coagulation. Different gradations of blending of cutting and coagulation power. Digital display of all controls and set values of cutting and coagulation power. Audio and visual alarms on fault occurrence. Earth free patient circuit. Reusable Silicon patient plate. Double paddle foot switch, explosion proof. Monopolar handle with cord. Bipolar forceps with cord. Trolley with two shelves having 125mm anti static lockable wheels. 220V, 50 Hz. Accessories/ electrodes: Attachment for Monopolar Coagulation (one set). Handle with 2 Activating Buttons Knife Electrode, 25mm Long Surgical Electrode, Ball-Shaped, 4mm Dia</p>	03 Nos.

Item No.	Name of Goods, Technical Description, Specifications and Standards	Qty.
	Wire Loop Electrode, 10mm Dia Needle Electrode, Str. Isolated, 125 mm Ball Electrode, 5mm Dia Needle Electrode, 100mm Bipol. Cable for Forceps with Flat Socket Bipolar Coagulation Forceps, 220mm	
28.	<b>Ambulatory Sleep Study System</b>  Should have minimum 19 Or More EEG channels For PSG Study. Should have 1-2 or More EMG Channels for PSG study Should have ECG channel Should have EOG recording feature Should have Airflow , Thermister Thoracic /or abdominal belts for PSG study Should have Body Position snore microphone Should have wireless connectivity with PC and minimum 4GB integral storage Included with standard accessories kit for trolley Laptop Monitor printer etc.	01 No.
29.	<b>Loupe For Liver Surgery</b>  Galilean Design Magnification 2.5X Working Distance 450mm with lens protection shield Eye PD adjustment Tilting mechanism for loupe Titanium frame  Galilean Design Magnification 2.5X Working Distance 550mm with lens protection shield Eye PD adjustment Tilting mechanism for loupe Titanium frame  Kepler Design Magnification 4.0X Working Distance 500mm with lens protection shield Eye PD adjustment Tilting mechanism for loupe Titanium frame	02 Sets

Item No.	Name of Goods, Technical Description, Specifications and Standards	Qty.
30.	<p><b>Sternal Saw</b></p> <p><b>Reciprocating Saw For Cardiac Surgery</b>  Power Consumption : 250 W  Weight : 1.54 kg  Stroke size: 3.2mm ; 180 x 47 x 200mm</p> <p><b>Consisting of:</b>  Lid  NiMH battery  Sterile funnel  Cleaning Plate</p> <p><b>Charging Unit</b>  4 Charging Bays, Automatic battery diagnosis function  100-240 V AC , 50/60 Hz</p> <p><b>Special Container for Drill</b>  DRILL/ACCESSORY  BOTTOM FOR 1/1 CONTAINER HEIGHT:135MM  1/1 LID COLOR BLUE</p> <p><b>Essential Attachments</b>  PROTECT. GUIDE F/STERNUM SAW BLADE (5 Nos.)  RECIP. STERNUM SAW BLADE 34/7.5/0.7MM (5 Nos.)  MANS CORD 5M LONG</p> <p><b>Redo Saw</b>  250 w - 0 -15.000 1/min Oscillation frequency  &lt;4"47 ; 107 x 47 x 200 mm Oscillaton angle  1600 g Weight  Consisting parts  Lid  NiMH battery  Funnel  Redo Saw Blade</p>	01 Set
31.	<p><b>Infusion Pumps</b></p> <ul style="list-style-type: none"> <li>• Linear peristaltic infusion pump for fluid administration</li> <li>• Operating features, and characteristics:</li> <li>• Automatic control of infusion rate independent of venous or arterial pressure, solution container height, and solution viscosity.</li> <li>• Automatic switchover to keep vein open (KVO) rate of 1.0 ml/hr (or previous rate, whichever is less)</li> <li>• Flow Sensor: Detects a "no flow" situation i.e. empty container.</li> <li>• Display: Numeric display which indicates flow rate and volume infused. Parameters:</li> </ul>	50 Nos.

Item No.	Name of Goods, Technical Description, Specifications and Standards	Qty.
	<ul style="list-style-type: none"> <li>• Set infusion rate range: 0. 1 -999 ml/hr in 1 ml/hr increments.</li> <li>• Volume limits selection: From 0. 1 -9999 ml.</li> <li>• KVO RATE: 1 ml./hr or set rate whichever is lower.</li> <li>• Accuracy : 5%</li> <li>• capable to handle Standard Infusion Set Alarms:</li> <li>• Visual and Audible</li> <li>• Activated by Empty Container. Occlusion Low Battery Air-in-line detector, internal malfunction. Operating Requirement</li> <li>• AC.220V / 50Hz Battery:</li> <li>• Rechargeable batteries with 2 hours operation when fully charged.</li> </ul>	
32.	<p><b>Suction Apparatus</b></p> <p><b>Motor:</b> Oilless and maintenance-free piston pump  <b>Power Feeding:</b> 230V-50 Hz  <b>ISO 10079-1 Classification:</b> HIGH VACUUM / HIGH FLOW  <b>Max free air flow rate:</b> 60 l/min with 2 jars 4000 ml/eah  <b>Max Vacuum (adjustable):</b> -0.90 Bar -90 kPa -675 mmHg  <b>Noise level:</b> 51,7 dB  <b>Power consumption:</b> 230 VA  <b>Fuse:</b> 1 x F 4 A 250 V  <b>Duty Cycle:</b> Non-stop operation</p>	15 Nos.
33.	<p><b>Portable Dinamap (BP, SP02, SAT, PULSE, MAP)</b></p> <ul style="list-style-type: none"> <li>• Mains and battery operated SPOT check vital signs monitor</li> <li>• NIBP (Non-invasive blood pressure) for all patient groups, Adult, infant, neonate, supplied standard with NIBP hose, 1 x Std. Adult Cuff</li> <li>• Massimo SpO2 technology, pulse rate with perfusion Index, supplied with interface cable and Massimo Adult Finger Sensor</li> <li>• Power cord</li> <li>• Long life integrated battery</li> </ul>	06 Nos.
34.	<p><b>Spirometer- Desk Top</b></p> <p>Power Supply: Rechargeable battery and mains power  Temperature Sensor: Semiconductor 0-50° C Flow Sensor: bi directional digital turbine,  Flow Range: +- 16 L/s – Volume Accuracy: ±2% or 20 ml/s  Flow Accuracy: ±3% or 300 ml/s  Dynamic Resistance: &lt;0.8 cmH2O/l/s  Connectivity: USB and RS232 (Bluetooth<sup>®</sup> optional)  6000 or more spirometry test memory, Possibility to be used with reusable and disposable turbine, Full Alphabetic Keyboard  Full Alphanumeric Keyboard, Cursor Keyboard, display for device protection and visibility in different light conditions,  Display: FSTN Graphic, 320 x 240 pixel,</p>	04 Nos.

Item No.	Name of Goods, Technical Description, Specifications and Standards	Qty.
	Printer / Paper: Thermal 120mm Mouthpieces: Ø 1.18 inch (30 mm) Measured Parameters: FVC, FEV1, FEV1/FVC%, FEV3, FEV3/FVC%, FEV6, FEV1/FEV6%, PEF FEF25%, FEF50%, FEF75%, FEF25-75%, FET, Vext, Lung Age, FIVC, FIV1, FIV1/FIVC  Calibration Syringe	
35.	<b>Air Mattress With Air Pump</b>	15 Nos.
36.	<b>Irradiator for Blood Bank</b> <ul style="list-style-type: none"> <li>• X -Rays Technology</li> <li>• Should have green latest technology</li> <li>• Should have FDA With 510K certificate</li> <li>• System should be quoted room /space requirement with all Accessories and necessary calibration part required for first time use.</li> </ul> <b>Specifications:</b> <ul style="list-style-type: none"> <li>• 4pi X-ray emitter technology</li> <li>• Carousel</li> <li>• Capacity 1 – 6 bag per cycle capacity</li> <li>• Cycle time of 300 seconds (5 min) to 25Gy center-line dose</li> <li>• Dose Information: 25Gy target dose, Max/Min throughout &lt; 1.5</li> <li>• Self-Contained with Internal Cooling Module (no water / drain required)</li> <li>• Mounted on casters for easy installation and cleaning</li> <li>• Manufactured as a Cabinet X-Ray Device under the CFR 21 1020.40 for minimal external emissions**</li> <li>• NO Nuclear Site License required (x-ray tube registration with State is required)</li> <li>• NO External room shielding or access security is required</li> <li>• <b>Power requirements:</b> 200-230 VAC single phase 35 Amp or better</li> </ul>	01 No.
37.	<b>Irradiator for Blood Bank</b> <ul style="list-style-type: none"> <li>• Gamma Rays Technology or better technology</li> <li>• System should be quoted special room requirement /Construction for Aeration / drainage /safety requirement with cost</li> <li>• Should be offer with all accessories and necessary calibration part required for first time use.</li> <li>• Should have green latest technology</li> <li>• Should have FDA With 510K certificate</li> </ul> <b>Specifications:</b> <b>Irradiation Chamber</b> Volume: 64 litre Irradiation levels: 4	01 No.

Item No.	Name of Goods, Technical Description, Specifications and Standards	Qty.
	Cable/air input access points: 5  <b>Source</b> Source Activity: Cs-137 up to 200 TBq Surface dose rate: < 5 µSv/hr Dose uniformity: < 10 % over a 300 mm square	
38.	<b>Autoclavable Endoscopic Saphenous Vein Harvesting System</b>  <b>TO BE USED WITH EXISTING CAMERA SYSTEM</b> Endoscopic Vein Retractor, for harvesting the great saphenous vein, distal width 25 mm, working length 27 cm, with insufflation channel, with integrated guide in handle for fiber optic light cable, autoclavable, for use with Telescope <b>Consisting of:</b> Vein Retractor, FREIBURG model, Cleaning Adaptor, Cleaning Brush  <ol style="list-style-type: none"> <li>1. Forward-Oblique Telescope 45°, diameter 5 mm, length 29 cm, autoclavable, fiber optic light transmission incorporated, color code: black ( 1 No.)</li> <li>2. Ring Dissector, for blunt exposure of the vessel, distal angled to right, size 3 mm, working length 41 cm (2 Nos.)</li> <li>3. Ring Dissector, for blunt exposure of the vessel, distal angled to left, size 3 mm, working length 41 cm (2 Nos.)</li> <li>4. Clip Applicator for ligating clips , (medium),dismantling, rotating, with ratchet to lock the jaw part holding the clip, size 10 mm, length 36 cm, <b>Consisting of:</b> Metal Handle, with ratchet, Metal Outer Tube Insert (2 Nos.)</li> <li>5. Pilling-Weck Titanium-Clips, medium, box with 10 sterile cartridges, 25 clips each, for use with applicators (2 Nos.)</li> <li>6. Coagulation and Dissecting Electrode, with suction channel, with connector pin for unipolar coagulation, size 5 mm, length 36 cm (2 Nos.)</li> <li>7. Retractor, 2 x 2 prongs, length 11 cm (2 Nos.)</li> <li>8. Scissors, rotating, dismantling, with connector pin for unipolar coagulation, with LUER-Lock irrigation connector for cleaning, double action jaws, spoon-shaped jaws, serrated, curved, length of jaws 20 mm, size 5 mm, length 43 cm <b>Consisting of:</b> Plastic Handle, without ratchets, Metal Outer Sheath, insulated, Scissors Insert for use with telescopes with inbuilt working channel and trocars size 6 mm (2 Nos.)</li> <li>9. Hook Scissors, rotating, with connector pin for unipolar coagulation, size 5 mm, length 43 cm, single action jaws, <b>Consisting of:</b> Plastic Handle, without ratchet Outer tube, insulated Scissors Insert (2 Nos.)</li> <li>10. Grasping Forceps, , rotating, dismantling, with connector pin for bipolar coagulation, single action jaws, narrow jaws, for fine dissection, grasping and bipolar coagulation of fine structures, size 5 mm, length 43 cm <b>Consisting of:</b> Plastic Handle, without Ratchet,</li> </ol>	01 Set

Item No.	Name of Goods, Technical Description, Specifications and Standards	Qty.
	<p>color code: light blue Outer Sheath Forceps Insert (2 Nos.)</p> <p>11. Endo-Loop Ligature, with knot, for bleeding stumps, with absorbable synthetic suture, for single use, sterile, USP 0, size 3 mm, length 33 cm, package of 12 (2 Nos.)</p> <p>12. Unipolar High Frequency Cord, with 4 mm plug, length 300 cm (4 Nos.)</p> <p>13. Bipolar High Frequency Cord, length 300 cm (4 Nos.)</p>	
39.	<p><b>Vein Finder</b></p> <p>The projection vein finder based on principle that human hemoglobin has a higher absorption of infrared light than other tissues. With enhanced imaging processing unit, upto 80% invisible vein could be detected. The processed vein image is synchronously and precisely projected back on to the skin.</p> <p><b><u>Features</u></b>  Adjustable brightness  Pediatric mode  Basic mode  Depth Detection mode  Green Light mode</p> <p><b><u>Specifications</u></b>  <b>Brightness:</b> 4 Levels  <b>infrared wavelength:</b> 850nm &amp; 940nm  <b>Optimal imaging distance:</b> 210mm +/- 30mm  <b>Image resolution:</b> 856 x 480 pixel  <b>Power source:</b> Rechargeable Battery (Backup 45 mins) or AC</p> <p><b><u>Including following accessories</u></b>  Charger  Floor Stand</p>	10 Nos.
40.	<p><b>Multi-Channel Computerized Data Recording System</b></p> <p>The system should have ready-to use experiments with step-by-step instructions for a wide range of experiments on humans.</p> <p>Software:</p> <ul style="list-style-type: none"> <li>• It should have report pages which include study questions as well as students' recorded data, analysis tables and graphs from their completed experiments. It should allow students to type their answers and the reports can saved for easy review or printing.</li> <li>• It should allow students and educators to access experiment material as well as the recorded data anywhere from outside the lab through internet.</li> <li>• The software should allow user to customize experiments as per their</li> </ul>	04 Nos.

Item No.	Name of Goods, Technical Description, Specifications and Standards	Qty.
	<p>lab requirement.</p> <ul style="list-style-type: none"> <li>The software should be provided with free experiments and software updates for at least 5 years.</li> </ul> <p>Hardware:</p> <ul style="list-style-type: none"> <li>The USB based 4 channel Data acquisition system with a variable sampling rate 100,000 samples/second ,two channel for general purpose input and two channel for bio-potential &amp; isolated stimulator with a software controlled filtering, stimulation and recording range of 2mV to 10V &amp; Voltage Range: 0-10 V &amp; Current Range: 0-20mA with software selectable pulse duration (50-200 <math>\mu</math> sec).</li> <li>Pulse Transducer, 5 Lead Shielded Bio Amp Cable, Shielded Lead Wires (5 snap-on), Stimulating Bar Electrode, Sphygmomanometer, Respiratory Belt Transducer, Grip Force Transducer, Cardio Microphone, Push Button Switch, EEG Flat Electrodes, Dry Earth Strap, Reusable ECG Electrodes, Disposable ECG Electrodes (100 pack)</li> <li>Should have clinical pharmacology/Medical case laboratories live videos &amp; Patient data to provide student an interactive solution for learning.</li> <li>Should have an ISO, IEC and other safety standard certificates and international publications</li> <li>Demonstration is mandatory before finalisation/acceptance.</li> </ul> <p><b>Branded Desktop Computer System with latest configuration along with compatible UPS (15 to 30 minutes backup)</b></p>	
41.	<p><b>Nerve and Muscle Kit II</b></p> <p>Includes the Teaching Force Transducer (0-500g) , Animal Nerve Stimulating Electrode, Nerve Chamber (includes a Stimulator Cable, two Differential Pod Input Cables). Shielded Lead Wires (Alligator), Muscle Holder and Manipulator with Stand.</p>	02 Nos.
42.	<p><b>Pharmacology Kit</b></p> <p>The Radnoti Single Chamber Organ Bath is supplied with a 25 mL tissue bath. The steel base is coated to resist corrosive salt solutions. The perfusate flows from a water jacketed, temperature controlled 1-liter reservoir to the tissue bath through a pre-heating coil built within the water jacket of tissue bath. The bath is emptied via a bottom drain controlled with a stopcock. The bath may also be used in a constant flow mode with excess perfusate exiting an overflow outlet at the top of the bath. Both overflow and drains may be routed to permit monitoring the release of endogenous substances, drug metabolites, or to design a cascade system configuration. Bath aeration is finely controlled via a removable Teflon needle valve Oxy-tube.</p>	02 Nos.

Item No.	Name of Goods, Technical Description, Specifications and Standards	Qty.
43.	<p><b>6L Digital Precise Circulation Water Bath</b></p> <p>For Biotechnology, Medical, Pharmaceutical and Industrial Applications. Features include a temperature range of 5 to 100 degree Celsius with +/- 0.1 accuracy and 14L/min pump speed. Dimensions are 350 x 210 x 410mm and weight is 11kg. Other features include innovative Patented Easy-to-Use Digital Fuzzy Controller and is CE certified. It has a stainless steel bath and lid for superior durability, high thermal efficiency, prevents evaporation and keeps constant temperature. Nozzle 7mm ID 11mm OD.</p>	02 Nos.
44.	<p><b>Semi Automatic Rotary Microtome</b></p> <p>Feed mechanism and coarse feed system in sealed and ergonomic designed cabinet</p> <ul style="list-style-type: none"> <li>• Solid base design, free of torsion</li> <li>• Vertical guide, free of backlash and equipped with high-end linear Cross-Roller-Bearings</li> <li>• Integrated switch panel with multifunctional graphic display</li> <li>• Feed and coarse feed movement performed by highly precise stepping motor</li> <li>• Feed steps <ul style="list-style-type: none"> <li>- up to 99 <math>\mu\text{m}</math> in 1 <math>\mu\text{m}</math> sequences</li> </ul> </li> <li>• Coarse feed steps performed by the stepping motor max. 500 <math>\mu\text{m}</math> <ul style="list-style-type: none"> <li>- from 5 <math>\mu\text{m}</math> to 100 <math>\mu\text{m}</math> in 5 <math>\mu\text{m}</math> sequences</li> <li>- from 100 <math>\mu\text{m}</math> to 500 <math>\mu\text{m}</math> in 50 <math>\mu\text{m}</math> sequences</li> </ul> </li> <li>• Horizontal movement 30 mm</li> <li>• Vertical movement 68 mm</li> <li>• Automatic positioning return at the end of cycle</li> <li>• Automatic specimen retraction in return movement, switch off on demand</li> <li>• Memory key to store the section start position (3 positions)</li> <li>• Total travel indication of the horizontal movement</li> <li>• Electromechanical movement for coarse and fine feed movement</li> <li>• Setting wheel for value settings and display indication</li> <li>• Integrated and smooth running hand wheel, 360° lockable</li> <li>• Coaxial specimen orientation</li> <li>• Specimen clamp 360° turnable</li> <li>• Quick release system for all clamping types.</li> <li>• Precise cradle for knife holder</li> <li>• Clearly arranged operating controls</li> <li>• All components and accessories are xylene resistant</li> <li>• Spaciously designed and integrated section waste tray, detachable volume: 1.5 liters Supplied with disposable blade carrier for low profile and universal specimen clamp.</li> <li>• Low profile Blade Holder</li> </ul>	02 Nos.

Item No.	Name of Goods, Technical Description, Specifications and Standards	Qty.
45.	<p><b>Compound Microscope</b></p> <p>Binocular microscope with Plan Phase 10/20/S40/S100x oil IOS objectives, mechanical rackless stage and 3W LED illumination WF 10x/20 mm eyepieces Binocular head, Siedentopf type, 30° inclined tubes. Interpupillary distance 50-75 mm Reversed quadruple revolving nosepiece on ball-bearings Plan Phase 10x, 20x, S40x, S100x oil IOS objectives. All optical parts are anti-fungus treated Coaxial coarse and 200 µm fine focusing, 2 µm precision and tension adjustment Plain 140 x 150 mm stage with 75 x 40 mm mechanical rackless stage In height adjustable Zernike Phase Abbe condenser N.A. 1.25 with iris diaphragm and filter holder 3W Neo LED illumination. Internal power supply 100-240 V (CE) With power cord and dust cover</p>	25 Nos.
46.	<p><b>Anatomical Models &amp; Histology Slides</b></p> <p><b>A. GIANT FUNCTIONAL CENTER BRAIN (A72)</b> Brain model reproduces the brain of a right-handed person, employing contrasting colors and hand-lettered captions to locate and identify motor and sensory functional centers. In addition to focusing on the intellectual role of the dominant left brain, and the creative role of the right, the model highlights the emotional, sexual, memory and learning functions of the limbic system. Sensory regions and centers receptive to 20 specific body regions are distinguished, as are the motor centers controlling 19 body regions. More than 120 features, hand-numbered on the model, are identified in the corresponding key.</p>	1 Set
	<p><b>B. FIVE-PART BIASECTED HEAD (A76)</b> Life-size vinyl reproduction of the head and neck has been sectioned into halves near the median to display interior details of the brain, nose, mouth and throat, as well as exterior features of the head and skull. The skin and muscles of the right half have been removed to expose the facial bones of the skull, sinuses, air cells of the ethmoid bone, parotid gland, and the eyeball in its bony orbit. To facilitate further study, the eyeball, tongue, and facial bone detach. 104 numbered features are identified in the corresponding key.</p>	
	<p><b>C. GIANT EYE IN BONY ORBIT (A28)</b> 6 times life-size (twice the size of competitors' models) and dissectible into eight parts, vinyl eyeball sits in its bony socket to provide a better understanding of its relationship with major blood vessels, muscles and nerves. All six muscles of movement can be seen and the upper half of the</p>	

Item No.	Name of Goods, Technical Description, Specifications and Standards	Qty.
	<p>eyeball with its lacrimal (tear) gland lifts off. Present and extractable are the superior and lateral rectus muscles, the iris and cornea, which can be removed as a unit, the Lucite lens, which actually magnifies and inverts images, and the transparent vitreous body, which exposes the fovea centralis on the retina. The choroid coat, retina, and optic disk can also be seen, as well as a schematic cross section through retinal layers. 77 hand-numbered features are identified in the accompanying key.</p> <p>Included a reproducible black line copy master with numbered parts that correspond to the model, making it easy to print illustrated study sheets. Answer key is on reverse.</p>	
	<p><b>D. GIANT FIVE-PART EYEBALL (A22)</b> Six-times life-size, unbreakable vinyl plastic replica is packed with useful teaching features. On the exterior of the eyeball is the cornea, through which the iris and pupil are visible, the large lacrimal (tear) gland, attachments for all six extrinsic muscles of the eye, the optic nerve roots, and surrounding blood vessels.</p> <p>The eyeball divides in half for study of the interior including the meticulously hand-painted choroid coat of the retina. Here, several removable parts are discovered such as the vitreous ball, iris/cornea, and Lucite lens, capable of magnifying and inverting images when removed from the model. Rods, cones, and other retinal microstructures are detailed in a highly-magnified, diagrammatic cross-section.</p> <p>42 hand-coded features are identified in the corresponding key.</p>	
	<p><b>E. NOSE AND OLFACTORY ORGAN SET (A95)</b> Two unbreakable plastic models on one hardwood base depict the nose and nasal passages enlarged to 4 times their normal size. The model on the right shows the nasal septum, its arteries and veins, the inner group of olfactory nerve filaments, nasopalatine nerve, soft and hard palate, uvula and the cranial floor. The model on the left depicts the left nostril, olfactory nerve, bulb and filaments, spheno-palatine ganglion, communicating sinuses, arteries and veins, the pharyngeal orifice of the Eustachian tube and the nasal conchae. The turbinate bone and nasolacrimal canal are also presented. 32 numbered features are identified in the accompanying key.</p>	
	<p><b>F. DELUXE SPINAL CORD (A65)</b> 6 times life-size, vinyl plastic model replicates a segment of the upper thoracic spinal cord. Sectioned both longitudinally and in cross section, a portion of white matter of the right half has been cut away to expose the anterior and posterior nerve roots. Color-coding differentiates them and a color-keyed circuitry schematic is mounted along with the model on a hardwood base. 30 numbered features are identified in a corresponding key.</p>	

Item No.	Name of Goods, Technical Description, Specifications and Standards	Qty.
	<p><b>G. RIGHT HALF OF HEAD AND NECK MUSCULATURE (A74)</b> Sagittally sectioned, unbreakable vinyl replica represents the human head and neck down to the level of the clavicle. Surface muscles and blood vessels are depicted on one side, while the other shows the median section through the interior. 119 features are numbered and identified in the corresponding key</p>	
	<p><b>H. DELUXE EIGHT-PART EAR (A34)</b> 5 times life-size in unbreakable vinyl, detailed ear model provides a more complete perspective of the middle and inner ear structures within the temporal bone.</p> <p>All the skin has been peeled off the detachable auricle to expose its cartilaginous structure, muscles, auricular arteries and nerves, as well as the entrance to the auditory canal. Sections of the petrous and mastoid portions of the temporal bone can be lifted off to expose the middle and inner ear chambers. The tympanic ring with its see-through tympanic membrane and attached ossicles can also be lifted out.</p> <p>The extractable labyrinth is dissectible into three portions. Half of it, consisting of the semicircular canals and vestibule, demonstrates the sense of balance. Transparent tubing with colored liquid represents two of the semicircular canals. An air bubble in each will move when tipped, demonstrating the canals' function in equilibrium. The other half of the labyrinth, upon removal, shows the vestibular and cochlear nerves, which join to form the auditory nerve. The cochlea itself separates into halves to reveal cochlear, vestibular and tympanic ducts and the branching of the cochlear nerve.</p> <p>95 hand-numbered features are identified in the corresponding key.</p>	
	<p><b>I. GIANT FUNCTIONAL LARYNX (AP48)</b> 4 times life-size and uniquely American-made, unbreakable vinyl replica is complete with hyoid bone and epiglottis. The right side depicts only the cartilaginous structure, while the left shows the musculature as well. Movable vocal cords, arytenoid cartilages and epiglottis all accurately demonstrate their functions. Perfect for speech correction and music, as well as anatomy and physiology, 55 hand-coded features are identified in the accompanying key.</p>	
	<p><b>J. EMBRYONIC DEVELOPMENT MODEL IN 12 STAGES (VG391)</b> The model represents the development of the human germ cells from fertilisation until the end of the 2nd month of pregnancy in 12 stages. Each stage can be removed from the common stand as an individual part and can be purposefully used for teaching and tests for the embryological specialist field.</p> <ul style="list-style-type: none"> <li>• Ovum at time of fertilisation (conception) with male gamete (sperm)</li> </ul>	

Item No.	Name of Goods, Technical Description, Specifications and Standards	Qty.
	<ul style="list-style-type: none"> <li>• Zygote at 2-cell stage, approx. 30 hours after fertilisation</li> <li>• Zygote at 4-cell stage, after around 40-50 hours</li> <li>• Zygote at 8-cell stage, after around 55 hours</li> <li>• Morula</li> <li>• Blastocyst after around 4 days</li> <li>• Blastocyst after around 5 days</li> <li>• Blastocyst after around 8-9 days</li> <li>• Germ cells at approx. 11th day</li> <li>• Germ cells at approx. 20th day</li> <li>• Embryo at around the end of the 1st month of pregnancy</li> <li>• Embryo at around the end of the 2nd month of pregnancy</li> </ul>	
	<p><b>K. MULTI-TORSO: MALE &amp; FEMALE CONFIGURATION (T15)</b>  48 dissected structures, 30 removable parts  The FULL-SIZE Multi-Torso:</p> <p>Multipurpose: with complete musculature on one side, and skin and surface topography on the other. • Multifaceted: with 11 LIFE-SIZE organ systems: Skin - Skeletal - Muscular - Nervous and Sense Organs - Respiratory - Cardiovascular - Lymphatic - Digestive - Urinary - Endocrine - Reproductive. • Multidimensional: with 5 interchangeable pelvic inserts - genderless, male, non pregnant female, or pregnant female in the 1st or 3rd trimesters – with 5 different torso models rolled into one.</p> <p>Furnished with the four-part male pelvic insert, the four-part non-pregnant female pelvic insert, and the removable mammary gland.</p>	
	<p><b>L. BONE STRUCTURE MODEL (A92)</b>  Depicting a fragment of compact bone about the size of a pinhead magnified approximately 500 times, hand-painted model shows one complete haversian system and a portion of two others in cross-section. Lamellae are cut away at various depths in step-wise fashion.</p>	
	<p><b>M. HUMAN SKIN SERIES (A942) WITH BURN PATHOLOGIES</b></p> <p>Three-dimensional and magnified 75 times. The front face of the model compares and contrasts normal healthy skin from three different body regions: the palm or sole (totally hairless) • the axilla or arm pit (sparsely endowed with hair) • the scalp (completely hirsute)</p> <p>The epidermis, dermis, and hypodermis, as well as the glands, hair follicles, nerves and receptors are all sculpted in full relief with contrasting colors. 46 features are identified in the accompanying key. The back face shows the progressive severity of injury caused by burns - from the reddening and transitory damage of the first degree burn, to the blistering, often permanent damage of the second degree burn, to the deep charring and permanent tissue destruction of the third degree burn. Burn segments are fully labeled on model.</p>	

Item No.	Name of Goods, Technical Description, Specifications and Standards	Qty.
	<p><b>N. SKELETON MODEL (A10)</b> Standard model of a human skeleton, very high quality and robust construction, perfect for use in hospitals, schools, universities and laboratories. On a stable metal stand with 5 casters!</p> <ul style="list-style-type: none"> <li>• Exceptional value for money</li> <li>• 3 year guarantee</li> <li>• Top quality natural casting</li> <li>• Final assembly carried out by hand</li> <li>• Made from a durable, unbreakable synthetic material</li> <li>• On a stable metal stand with 5 casters (painted white)</li> <li>• Close to the realistic weight of around 200 bones</li> <li>• Natural skeleton size</li> <li>• 3 part assembled skull</li> <li>• Individually inserted teeth</li> <li>• Limbs can be removed quickly and easily</li> <li>• With metal stand and transparent dust cover</li> </ul>	
	<p><b>O. 9-STAGE HUMAN PREGNANCY SERIES (0304-11)</b> Details human development from 4th week through 7th month</p> <p>Encompassing a four-week embryo depicted 25 times life-size, plus eight life-size models of the pregnant uterus illustrating key developmental stages and fetal positions, including twinning - each of the five later stages permits the fetus to be lifted from the uterus for detailed examination.</p> <p>Mounted on individual pedestal bases. The models range in size from 5x5x7 inches (12x12 x19cm) to 6x13x11 inches (15x32x27 cm).</p>	
	<p><b>P. SAGITTAL BRAIN SECTION (A79)</b> Sectioned through the right side of the brain and base of the skull, enlarged section is also double-sided. One surface conforms to the median plane and includes a section of the falx cerebri. The reverse surface depicts a sagittal cut which exposes the lateral ventricle.</p> <p>49 color-coded features of the brain and meninges are identified in the accompanying key. The model rests on a detachable stand.</p> <p>Overall dimensions: 10x7x5 inches (25x18x12 cm).</p>	
	<p><b>Q. CLASSIC THREE-PART SKULL WITH NUMBERING (0257-21)</b> Rendition of Classic Skull enhanced with hand numbering of the bones and major osteological features on one side. In addition, all the suture lines have been highlighted in yellow to make it easier to discern the interlocking bony plates which together comprise the human skull. A key to all numbered structures is furnished.</p>	

Item No.	Name of Goods, Technical Description, Specifications and Standards	Qty.
	<p><b>R. MANDIBLE OF YOUNG ADULT (A83)</b>  The left mandible of a post-adolescent with its full complement of eight teeth, approximately three times life size, is faithfully rendered in unbreakable plastic. The bony outer layer of the jaw is cut away, exposing the mandibular blood vessels, roots of the teeth, and their nerves. Sectioned longitudinally from crown to root, one molar shows the destructive action of caries, while another exhibits advanced inflammation (pulpitis). The inner surface of the jaw shows the submaxillary and sublingual salivary glands. Forty-eight numbered features are defined in the accompanying key.</p> <p>Overall dimensions: 13×14×9 inches (33×36×23 cm).</p>	
	<p><b>S.. FETAL HALF SKULL WITH DURA MATER (SK39)</b>  Medical quality plastic reproduction of an actual specimen is bisected and beautifully illustrates the dural membrane, fontanels and developing bones.</p>	
	<p><b>T. HEAD MODEL 6 PARTS (C09/1)</b>  Life-size 6-part head is mounted on a base and features a removable 4-part brain half with arteries. The eyeball with optic nerve is also removable and one side of the high quality model exposes the nose, mouth cavity, pharynx, occiput and skull base. Head model is delivered on a removable base for easy display in a classroom or doctor's office.</p>	
	<p><b>U. DELUXE BISECTED SKULL (0281-00)</b>  To reveal the hidden complexities of the sinuses and nasal passages With the look and feel of real bone, highly-detailed plastic reproduction divides mid-sagittally. Especially suited for examination of the cranial vault, sinuses, nasal passages and palate, one half includes the nasal septum and complete mandible. The other half exposes the nasal conchae and nasal passages.</p>	
	<p><b>V. CLASSIC HEART SET ON SINGLE WOOD BASE (A388)</b>  Classic Heart shows the ventricles, atria, veins and aorta in precise detail. The front heart wall is detachable to reveal its inner valves and chambers.</p> <p>Ideal for explaining the treatment of coronary heart disease, the Classic Heart with Bypass model contains all of the features above, plus color representations of venal bypasses to the right coronary artery and ramus interventricularis anterior, as well as the ramus circumflexus of the left coronary artery.</p> <p>Transparent to illustrate the vessels of the heart, the Classic Heart with Conducting System shows the coronary arteries and veins in colored relief, and the complete conducting system is also represented in color. The front heart wall is removable, and the entire heart can be taken off its stand.</p>	

Item No.	Name of Goods, Technical Description, Specifications and Standards	Qty.
	<p><b>W. FLEXIBLE SPINE WITH THORAX AND MOVABLE FEMUR HEADS (SP64)</b>  Perfect for respiratory studies</p> <p>Full-size natural cast replica of an adult male specimen makes an ideal subject for meaningful study of respiratory mechanics.</p> <p>Because provided with the entire rib cage in addition to a flexibly-articulated vertebral column, can reproduce all the natural movements of the spine and thorax.</p>	
	<p><b>X. BASIC MEDICAL HISTOLOGY SLIDES SET (311998)</b>  Basic collection of 50 slides taken from human or comparable mammalian tissues, although less comprehensive than item# 311992, is an excellent resource for instruction at the high school, college, and graduate levels. Most organ systems and tissues are represented.</p>	

Item No	Name of Goods, Technical Description, Specifications, and Standards				Qty. Required
47.	<b>Cardiac Open Surgery Set 1-A</b>				01 Set
	<b>S#</b>	<b>Name of instrument</b>	<b>Size</b>	<b>Qty.</b>	
	1	B.P. Handle	3. No	8	
	2	B.P. Handle	7. No	15	
	3	B.P. Handle	4. No	8	
		<b>DISSECTING FORCEPS</b>			
	4	Russian D/F	8"	4	
	5	Semekan D/F plain broad tip	8"	16	
	6	Semekan D/F narrow tip	8"	16	
	7	Semekan D/F tooth	8"	16	
	8	Semekan D/F tooth	7"	16	
	9	Semekan D/F tooth	6"	16	
	10	Debakay D/F BLUNT	8"	10	
	11	Debakay D/F	8"	10	
	12	Debakay D/F angular	8"	05	
	13	Debakay D/F angular	6"	05	
		<b>DISSECTING FORCEPS FINE</b>			
	14	LONG DISSECTING FORCEPS PLAIN	10"	10	
		<b>SCISSORS</b>			
	15	Metzenbaum scissor cvd golden	7"	10	
	16	Metzenbaum scissor cvd golden	8"	10	
	17	Metzenbaum scissor cvd golden	8"	12	
	18	Metzenbaum scissor cvd golden	9"	06	
	19	Metzenbaum scissor straight golden	8"	10	
	20	Mayo scissor straight golden	7"	10	
	21	Mayo scissor curved golden	9"	10	
	22	Tube cutting scissors		10	
		<b>NEEDLE HOLDERS</b>			
	23	Debakey Needle Holder Heavy	7"	12	
	24	Debakay Needle Holder Heavy	8"	15	
	25	Debakay Needle Holder Heavy	9"	06	
	26	Debakay Needle Holder Fine Tip		12	
	27	Debakay Needle Holder		12	
		<b>RETRACTORS</b>			
	28	Right Angled retractor Medium		10	
	29	At Retractor basic set		02	
	30	IMA RETRACTOR SET COMPLETE		04	
	31	Aorta Valve Retractor		04	
	32	Aorta Valve Retractor		04	
	33	Aorta Valve Retractor		04	
	34	Aorta Valve Retractor		04	
	35	Volkman retractor		08	
	36	US-ARMY RETRACTOR		08	
	37	CUSHING VEIN RETRACTOR		04	

Item No	Name of Goods, Technical Description, Specifications, and Standards		Qty. Required
38	VEIN RETRACTOR		04
39	Deakey Rib Spreader		02
	<b>SUCTION NOZZLES</b>		
40	Suction Nozzle Yankauer large		4
41	FERG-FRAZIER SUCT 12FR		4
42	POOL SUCTION		2
	<b>ARTERY FORCEPS</b>		
43	Monihans Artery Force's	9"	06
44	Lahey forceps medium		06
45	Babcock forceps	8"	04
46	Allis tissue forceps	8"	04
47	Aortic clamps	7"	06
48	Aortic clamps	8"	06
49	Derra clamp small		04
50	Derra clamp medium		04
51	Derra clamp large		04
52	Duval forceps medium	8"	04
53	Duval forceps small		04
54	Robert clamp curved heavy	9"	04
55	Robert clamp curved fine	9"	04
56	Kocher clamps curved	8"	48
57	Crile artery forceps curved	5.5"	50
58	Mosquito artery forceps curved	5"	50
59	Mosquito artery forceps straight	5"	20
	<b>OTHER MISC.</b>		
60	Wire twister small		08
61	Wire twister large		08
62	Wire holding forcepS		04
63	Wire cutter		04
64	Wire cutter		04
65	Tubing clamp heavy	8"	22
66	Snugar wire straight		06
67	Sponge Holder		20
68	Deakey Atraumata Tangential clamp		02
69	Deakey satinsky Tangential clamp		02
70	Deakey satinsky Tangential clamp		02

<b>Item No</b>	<b>Name of Goods, Technical Description, Specifications, and Standards</b>				<b>Qty. Required</b>
48.	<b>Cardiac Open Surgery Micro Box</b>				01 Set
	<b>S#</b>	<b>Instruments Name</b>	<b>Size</b>	<b>Qty.</b>	
	1	Vascular dilator	0.5 mm	02	
	2	Vascular dilator		02	
	3	Vascular Dilator	1 mm	02	
	4	Vascular Dilator	1.5 mm	02	
	5	Vascular Dilator	2 mm	02	
	6	Nerve Hook	7"	02	
	7	Nerve Hook	9"	02	
	8	Watson chynae Dissector		02	
	9	Bulldog clamps		10	
	10	Bulldog clamps		10	
	11	Bulldog clamps		10	
	12	Castroviejo Micro Needle Holder	7"	10	
	13	Castroviejo Micro Needle Holder -CVD		05	
	14	Castroviejo Micro Needle Holder	8"	10	
	15	Potts De Martel scissors Forward	25 Deg 6"	05	
	16	Potts De Martel scissors Forward	45 Deg 6"	05	
	17	Potts De Martel scissors forward	90 Deg 6"	05	
	18	Potts De Martel scissors Backward	125 Deg 6"	05	
	19	MICRO SCISSOR	60 Deg	05	
	20	MICRO SCISSOR	90 Deg	05	
	21	MICRO SCISSOR	125 Deg	05	
	22	Geral D/F plain	7"	10	
	23	DeBaKey tip forceps	8"	10	
	24	Ring D/F round handle	7"	05	
	25	SELF RETRACTOR		02	

<b>Item No</b>	<b>Name of Goods, Technical Description, Specifications, and Standards</b>				<b>Qty. Required</b>
49.	<b>Sterilization Containers For General &amp; Micro Instruments</b>				01 Set
	<b>S#</b>	<b>PARTICULARS</b>		<b>QTY.</b>	
	1	Bottom for 3/4 container height : 120 mm		02	
	2	3/4 size perf basket 406 x 253 x 76 mm		02	
	3	Primeline clear lid 3/4 size		02	
	4	Silicone cushioning pad 3/4 size		02	
	5	Bottom for 1/1 container height :135 mm		04	
	6	Primeline clear lid 1/1 size		04	
	7	1/1 size perf basket 540 x 253 x 56 mm		04	

Item No	Name of Goods, Technical Description, Specifications, and Standards			Qty. Required
50.	<b>Minimal Invasive cardiac Surgery Instruments Set</b>			01 Set
	<b>S#</b>	<b>Instruments Name</b>	<b>Size</b>	<b>Qty.</b>
	1	CERAMO HCR valve forceps	3.0 x 15/350 mm	1
	2	CERAMO HCR non-trauma. forceps	str. 2.8 x 15 / 350 mm	1
	3	HCR MIC non-traumatic forceps.	(2x3 toothing) cvd.4,6x80/360mm	1
	4	CERAMO HCR needle holder	cvd. 2 x 10 / 340 mm	1
	5	CERAMO HCR nerv hook	1 x 7 / 340 mm	2
	6	CERAMO HCR knot pusher	25° angl., 340 mm	1
	7	CERAMO HCR valve scissors	double-action,bl/bl cvd. 350mm	1
	8	CERAMO TC HCR needle holder	straight 3 x 10 / 340 mm	1
	9	CERAMO TC HCR needle holder	cvd. 3 x 10 / 340 mm	1
	10	CERAMO HCR vascular scissors	45° angl. 345 mm	1
	11	CERAMO HCR vascular scissors	90° angl. 335 mm	1
	12	MICS cannula for cardio- plegia	, LL. 3 x 270 mm	1
	13	Chordae gauge MICS and knot-	assistent 15-40 x 350 mm	1
	14	MICS Intercostal retractor	body only	1
	15	Blades (pair) f. MRP-1	40 x 35 mm	1
	16	Blades (pair) f. MRP-1	fenestrated, 50 x 35 mm	1
	17	Ball joint adapter (D8) for	MRR-2/MRP-1	1
	18	Ball joint adapter (D4) for	distance elevator for MRN-3	1
	19	Transthoracic atrial retractor	- blade guide, 220mm	2
	20	Atrium bracket for MRN-3	45x30mm	1
	21	Atrium bracket for MRN-3	60x30mm	1
	22	Retainer for septal fold and	diaphragm	1
	23	Guiding clamp for atrial blade	and retainer	1
	24	Atrial retractor expandable	55 x 30 mm	1
	25	Cardan screwdriver		1
	26	Ball joint adapter d 4 mm	length and height variable	1
	27	Clamping element f. ball joint	adapter movable	1
	28	Myocardial muscle stabilisator	with ball joint connector (D7)	1
	29	Blade guide for adapter	d 4, 120 mm	1
	30	SUPERPLAST Retractor f.	mitral valve cusp d 4, 250 mm	1
	31	MICS Sterilization and	storage tray, 530 x 250 x 20mm	1

Item No	Name of Goods, Technical Description, Specifications, and Standards			Qty. Required
32	Container for HCR	MIS instruments 550x250x100mm	1	
33	Sterilisation a. stor. tray f.	SUPERFLEX soft tissue retract.	1	
34	SUPERFLEX soft tissue retrac-	tor, spatula shaped, 25x200mm	1	
35	MICS IMA Retractor Complete	IMA Blade Size 18x40x72mm, Lever arm Size 70mm	1	
36	MICS IMA Retractor Blade	IMA Blade size 20x45x80mm	1	
37	MICS IMA Retractor Blade	IMA Blade Size 22x50x88mm	1	
38	MICS IMA Retractor Lever Arm	Lever arm Size 100 mm	1	

Item No	Name of Goods, Technical Description, Specifications, and Standards	Qty. Required
51	<p><b>Freeze Dryer</b></p> <p>Air-cooled, refrigerator 0.43 kW (1/3 HP), CFC and H-CFC-free refrigerant, without vacuum pump, bench top unit, integrated support plate for direct mounting of a drying chamber or accessories with a diameter of 240 mm, stainless steel worktop, ice condenser and ice condenser chamber with drain valve for defrosted water, ice capacity max. 2.5 kg, ice condenser performance max. 2 kg/24 h, ice condenser temperature approx. -60°C, ice condenser chamber 3.5 litres, with hot gas defrosting, vertical lay-out, suitable for freeze drying in round flasks, wide neck filter bottles and/or on unheated shelves, also suitable as a cooling trap for the rotational-vacuum-concentrator RVC, equipped with process controller LD plus (Lyo-Display-plus): Clearly arranged graphic LC-display showing the process data (ice condenser temperature, process time, section time and vacuum in combination with vacuum measuring sensor A VSP 62 MV), easily operated and intuitional menu navigation in German, English and French language, conversion of temperature and vacuum according to the vapour pressure above ice, vacuum control possible in connection with pressure control valve</p> <p><b>Vacuum Pump Rotary Type Double Stage Rotary-Vane Pump</b></p> <ul style="list-style-type: none"> <li>• High Flow Rates even at vacuum Levels approaching Ultimate Vacuum</li> <li>• High water vapor tolerance.</li> <li>• Vacuum-tight switch-off without need for anti-suck back valve.</li> <li>• Large oil volume: long intervals between oil changes.</li> <li>• Ease of maintenance due to telescopic design.</li> </ul> <p><b>Technical Data:</b></p> <ul style="list-style-type: none"> <li>• Number of stage: 2</li> <li>• Capacity: 45 Liter/Minute approx</li> <li>• Max. pumping speed 50/60Hz (m3/h): 2.3/2.8</li> <li>• Ultimate Partial vacuum (abs): 4 x 10<sup>-4</sup></li> <li>• Ultimate vacuum (abs): 2 x 10<sup>-3</sup></li> <li>• with gas ballast (mbar): 1 x 10<sup>-2</sup></li> <li>• Water vapor tolerance (mbar): 40</li> <li>• Oil capacity (B-oil) Min/Max Lit 0.1/0.28</li> </ul> <p><b>Exhaust filter for vacuum pump</b></p> <p><b>Vacuum Sensor</b></p> <p><b>Vacuum hose incl. standard flange</b></p> <p>Connections DN 16/25 ISO-KF for external connection of the vacuum pumps RZ-2, RC-5, MZ, 2C and MD 4C</p> <p><b>Base plate</b></p> <p>For freeze dryers ALPHA 1-2 for drying inside the acrylic chambers</p>	01 No.

Item No	Name of Goods, Technical Description, Specifications, and Standards	Qty. Required
	<p><b>Acrylic chamber</b> with 6 connections  <b>Rubber valve</b> (6-Nos.)</p>	
52	<p><b>Trinocular Microscope with Camera Attachment</b></p> <p>Expanding the application possibilities of the, the EPI Fluorescence attachment effortlessly fits on top of the to provide reflected light fluorescence imaging. Color Corrected Infinity Optical System, T-shaped, 3-cassette slider mount [excluding dummy cassette], HBO 100W center able attachment</p> <p><b>Optical System:</b> Color corrected infinity Optical System.  <b>Observation tube:</b> Wide field binocular 30°C [F.N. 22] and Wide field trinocular 30°C [F.N. 22] – light distribution 20 / 80 and Wide field trinocular 30°C [F.N. 22] – light distribution 0 / 100.  <b>Nosepiece:</b> Reversed Quintuple or Sextuple.  <b>Stage:</b> 175x145mm surface; 80x53mm movement; hard anodized coated with coaxial movement and left or right hand controls; torque adjustment of X and Y axis controls.  <b>Condenser:</b> Swing-out Achromatic (N.A. 0.9/0.13) condenser. 4-position N.A. 1.25 Phase Contrast turret condenser [10x, 20x, 40x, 100x &amp; BF]Phase and Dark field Contrast N.A. 1.25 turret condenser [10x, 40x, 100x &amp; DF (10x-40x)]  <b>Focus:</b> 42mm stroke; torque adjustment for course; focus lock. 1 um minimum increments; silicon coated focus controls. Illumination: Externally mounted, Transmitted 6V/30W Quartz Halogen Koehler Illumination  <b>Accessories:</b> Phase and Dark field contrast condensers, gout diagnosis polarizer kit, high resolution built-in digital head; photo/digital documentation adapters</p> <p><b>Digital Camera</b>  Digital Camera 5 MP – 1/2.5” – 12mm – Mini USB</p>	2 Nos.
53.	<p><b>Pharmaceutical Refrigerator</b></p> <p>Cooling system, Forced – Air Circulation, Temperature control, Safety Control System  Ergonomic design</p> <p><b>Liters:</b> 360  <b>Input Power:</b> 310W  <b>Temperature range:</b> 2 ~ 8°C (Ambient 10°C ~ 32°C)  <b>Voltage (V/Hz):</b> 220V / 50 Hz  <b>Temperature Control:</b> Microprocessor control  <b>Over and under temperature:</b> Audible and visual alarm  <b>Cabinet:</b> Upright  <b>Door:</b> Single glass</p>	03 Nos.

Item No	Name of Goods, Technical Description, Specifications, and Standards	Qty. Required
	<b>Foam insulation:</b> High density CFC-free urethane <b>Compressor:</b> Danfoss compressor <b>Refrigerant:</b> R134a <b>Casters:</b> 4 <b>Shelves:</b> 5	
54.	<b>Pharmaceutical Refrigerator</b>  Temperature Control. Alarm System. Refrigeration System. Ergonomic design  <b>Door:</b> Glass Door <b>Voltage (V/Hz):</b> 220V / 50 Hz, 115V / 60 Hz <b>Climate Type:</b> N <b>Input Power:</b> 84W <b>Temperature range:</b> 2 ~ 8°C <b>Liters:</b> 68 <b>Shelves / Baskets:</b> 2 / 1	10 Nos.
55.	<b>Freezer (Upright) -20 °C to -40 °C</b>  Capacity 262 Liters, Input power 400W, Temp range <b>-20°C to -40 °C</b> Voltage 220 ~ 240V / 50Hz, Temperature Control Microprocessor control Over & under Temp Audible and visual alarm, Cabinet Upright Door / Door Lock Single foaming / 1, Foam insulation High-density CFC-free urethane Compressor Danfoss compressor, Refrigerator R 404 a, Shelves/ Drawers/ Baskets 2/ 4/	01 No.
56.	<b>Boiler for Steam Generation</b>  <b>Type:</b> Water Tue Steam Generator <b>Configuration</b> Horizontal, Mounted on Saddles <b>Rated Steam Output</b> 1000 Kg / Hr. <b>Gas Burner</b> Forced Type <b>Operating Pressure</b> 130 – 150 PSI <b>Mode of Operating</b> Fully Automatic  IQ/OQ shall be executed by supplier	01 No.

**SPECIAL NOTE:**

- i. The Purchaser will evaluate and compare the bids on itemized basis OR on the basis of a group OR a combination of groups OR as total of groups.
- ii. Port of Shipment and Country of origin of “MAJOR PART(S) OF THE EQUIPMENT” must be clearly reflected separately in the Technical and Financial bids. The “Origin” means the place where the “goods” are mined, grown, or produced.
- iii. Priority would be given to the goods manufactured in UK / USA / EU / JAPAN.
- iv. The above specifications are only for widest possible competition and not for favor any single contractor or supplier nor put others at a disadvantage. However, the brand name, catalogue No. / Name etc. has only been used for the reference purpose. Goods offered “AT LEAST EQUIVALENT” to requisite specifications shall also be considered.
- v. Equipment must be quoted with all the standard accessories.
- vi. UPS/Power protection for the equipment shall be incorporated in the systems, otherwise prices must be quoted separately.
- vii. All the civil works will be carried-out by the Dow University of Health Sciences, Karachi with the consultation of the responsive bidder.
- viii. Goods must be comply to the GMP & WHO standards. Bidder must provide procedures and services for DQ, IQ, OQ and PQ (if applicable).
- ix. All site specific work to be required in the system viz. Lead Glass/special antistatic flooring, environment control/radiation protection must be quoted separately.
- x. The bidder shall separately quote the price of service contract inclusive of parts as well as excluding the parts for 5 years (minimum) in term of %age for total contract value.

# H: Sample Forms

## 1. PERFORMANCE GUARANTEE/SECURITY FORM

To: [Name & Address of the Procuring Agency]

Whereas \_\_\_\_\_ **[Name of Bidder]** (hereinafter called "the Bidder") 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 in the said Contract that the Bidder shall furnish to the Procuring Agency with a Bank Guarantee by a scheduled bank for the sum of 5% of the total Contract amount as Security for compliance with the Bidder's performance obligations in accordance with the Contract.

And whereas we have agreed to provide a Guarantee: for the said Bidder

Therefore, we hereby unconditionally and irrevocably guarantee, on behalf of the Bidder, 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 Bidder to be in default under the Contract and without requiring the Procuring Agency to initiate action against the Bidder and without cavil or argument any sum or sums within the limits of **[Amount of Guarantee]** as aforesaid. The amount stated in the demand made under this guarantee shall be conclusive proof of the amount payable by the Guarantor under this guarantee.

The obligations of the Guarantor under this guarantee shall be valid for four months after the completion of delivery of supplies by the Bidder to the Procuring Agency of the full quantity of the goods for which this Guarantee is being given, and until all and any obligations and sums due have been paid in full.

Signature and Seal of the Guarantors / Bank

Address

Date

**2. MANUFACTURER'S AUTHORIZATION FORM**  
[SEE CLAUSE 11.1 (A) OF THE INSTRUCTION TO BIDDERS]

To: The Dow University of Health Sciences  
Karachi.

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 authorize                      **[name and address of Bidder / Agent]**                      to submit a bid, and subsequently follow-up / negotiate and sign the Contract with you against Invitation for Bids (IFB) / Tender Notice for the goods manufactured, by us, under the patent name of                                           for performance of the contract.

We hereby commit and assure our full guarantee and warranty / guarantee as per Clause 12 of the General Conditions of Contract for the goods offered for supply by the above mentioned firm against this Invitation for Bids.

[Signature for and on behalf of Manufacturer]

Note:

This letter of authority should be on the letterhead of the Manufacturer and should be signed by a person competent and having the power of attorney to bind the Manufacturer. It should be included by the Bidder in its bid.



# I: Bid Form & Price Schedule

## 1. BID FORM

To: The Dow University of Health Sciences  
Karachi

Dear Sir,

Having examined the Bidding Documents, the receipt of which is hereby duly acknowledged, we, the undersigned, offer to supply and deliver the goods specified in the said Bidding Documents for the sum of \_\_\_\_\_ **[Total Bid Amount Rs. \_\_\_\_\_]**,

**[Bid Amount in words \_\_\_\_\_ only]**

or such other sums as may be ascertained in accordance with the Schedule of Prices attached herewith and made part of this bid.

2. The free of cost / donation / discounts offered and the methodology for their application are: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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

4. If our bid is accepted, we shall obtain an unconditional guarantee of a bank in the sum of 5% of the Contract Price for the due performance of the Contract, in the form prescribed by the Procuring Agency.

5. We agree to the validity of this bid for 90 days from the date fixed for financial bid opening and it shall remain binding upon us and may be accepted at any time before the expiration of that period.

6. Until a formal Contract is prepared and executed, this bid, together with the written acceptance thereof and notification of award, by the Procuring Agency, shall constitute a binding Contract between us.

7. We understand that you are not bound to accept the lowest or any bid you may receive.

Name \_\_\_\_\_

In the capacity of \_\_\_\_\_

Signed \_\_\_\_\_

Duly authorized to sign the Bid for and on behalf of \_\_\_\_\_

Date \_\_\_\_\_

2. (a) **PRICE SCHEDULE IN PAK RUPEES delivered duty paid (DDP BASIS)**

**FOR GOODS OFFERED WITHIN THE PROCURING AGENCY'S COUNTRY**

S#	Detailed Specification of Goods	Model / Cat No.	Name of Manufacturer	Country of Origin	Port Of Shipment	Quantity of Stores	Unit	Rate Per Unit	Total Price
1	2	3	4	5	6	7	8	9	10
<b>Total Amount in Pak Rs.</b>									

Name \_\_\_\_\_

In the capacity of \_\_\_\_\_

Signed \_\_\_\_\_

Duly authorized to sign the Bid for and on behalf of \_\_\_\_\_

Date \_\_\_\_\_

**NOTE:**

Port of Shipment and Country of origin of "MAJOR PART(S) OF THE EQUIPMENT" must be clearly reflected separately in the Technical and Financial bids. The "Origin" means the place where the "goods" are mined, grown, or produced.

**2. (B) PRICE SCHEDULE IN FOREIGN CURRENCY (CFR / C&F BASIS)**

**FOR GOODS OFFERED FROM OUTSIDE THE PROCURING AGENCY'S COUNTRY**

S#	Detailed Specification of Goods	Model / Cat No.	Name of Manufacturer	Country of Origin	Port Of Shipment	Quantity of Stores	Unit	Curr-ency	Rate Per Unit	Total Price
1	2	3	4	5	6	7	8	9	10	11
<b>Total Amount in Foreign Currency</b>										

Name \_\_\_\_\_

In the capacity of \_\_\_\_\_

Signed \_\_\_\_\_

Duly authorized to sign the Bid for and on behalf of \_\_\_\_\_

Date \_\_\_\_\_

**NOTE:**

Port of Shipment and Country of origin of "MAJOR PART(S) OF THE EQUIPMENT" must be clearly reflected separately in the Technical and Financial bids. The "Origin" means the place where the "goods" are mined, grown, or produced.