DOW UNIVERSITY OF HEALTH SCIENCES

BIDDING DOCUMENT

Single Stage - Two Envelope Bidding Procedure

PROCUREMENT OF
LABORATORY EQUIPMENT / INSTRUMENTS

No. DUHS/P&D/2015/ 7388 Dated 25 May 2015

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A: Instructions to Bidders. (ITB)

1. INTRODUCTION

1. GENERAL

1.1 The Procuring Agency has allocated fund towards the cost **"Multi-Disciplinary Laboratory (MDL), Animal Sciences Lab. and Biomedical / Electrophysiological for Cardiopulmonary / Neuromuscular / Behavioral / Phyusiological & Pharmacological Experimental Studies"**. 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 Bidders shall not be eligible to bid if they are under a declaration of ineligibility for corrupt and fraudulent practices issued by the any government organization in accordance with sub clause 35.1.

2. 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 then 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, Baba-e-Urdu Road, Near Civil Hospital, 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
1	**Conformity to the Purchaser's Specifications**		**25**
		Fully compliant with the required specifications	25
		Compliant with minor deviation (up to 10% subject to main function is not effected)	20
2	**Product Certification**		**15**
		Food and Drug Administration (FDA) 510K and European Community (CE) MDD or Japan Industrial Standard (JIS)	15
		European Community (CE) MDD and Japan Industrial Standard (JIS)	14
		Food and Drug Administration (FDA) 510K	8
		European Community (CE) MDD	7
		Japan Industrial Standard (JIS)	7
3	**Product global acceptability / performance**		**10**
		World wide satisfactory performance certificates from the medical institutions (other than Pakistan) (1.5 marks for each certificate upto maximum 8) verified by the relevant countries	10
TOTAL MARKS PRODUCT EVALUATION (A)			**50**

B. BIDDER EVALUATION

S#	PARAMETERS	SUB-PARAMETERS	Total Marks
4	**Legal Requirement**		**6**
		Authorization Certificate	2
		Partnership Deed with manufacturer	2
		Taxation Certificate (NTN and GST)	2
5	**Technical Staff**		**14**
		Simple Technician (minimum two)	3
		Diploma Engineers (minimum two)	3

S#	PARAMETERS	SUB-PARAMETERS	Total Marks
		Graduate Engineers (For High Tech / Critical equipment Graduate Engineer of relevant field is mandatory for each product)	5
		MSc / PhD qualification/Foreign training	3
6	**Networking and Training**		**8**
		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
7	**Testing & Calibration Equipment**		**4**
		List of tools , testing equipment and calibration equipment relevant to the product	2
		Spare Parts readily availability (Inventory list)	2
8	**Past Experience / Performance**		**4**
		Satisfactory performance certificate for the quoted equipment from the medical institutions within Pakistan (1 mark for each certificate upto maximum 4)	4
9	**Financial Status**		**6**
		Bank Certificate	2
		Last year verified Balance Sheet	2
		Yearly turn-over of over 100 Million	2
10	**Bonus points**		**8**
		Special features	2
		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. The rates must come from the original manufacturer	2
TOTAL BIDDER EVALUATION (B)			**50**
GRAND TOTAL (A + B)			**100**

Note:

- If a bidder fails to obtain minimum 20 marks, against the criteria "**Conformity to the Purchaser's Specifications",** 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 Government in the Procuring Agency's Country.

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 VERY 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 previsions 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 contactor 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: Invitation for Bids (IFB)

No. DUHS/P&D/2015/ 7388 Dated 25 May 2015

Dow University of Health Sciences (DUHS), Karachi invites bids on DDP / C&F basis from authorized Dealers / Distributors / Manufacturers, registered with GST & Income Tax, for the **PROCUREMENT OF LABORATORY EQUIPMENT / INSTRUMENTS.**

Tender Fee	Rs. 2,000/- (Rupees two thousand only) Non-Refundable
Bid Security	2% of the total bid value.
Purchasing Date & Time	1 June 2015 to 23 June 2015 from 11:00 a.m. to 02:00 p.m.
Bids Delivery Date & Time	25 June 2015 at 11:00 a.m.
Bid Opening Date & Time	25 June 2015 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.

The bidding document may be purchased by interested bidders on the submission of a written application to the address below and upon payment of a non-refundable fee i.e. Rs. 2,000/- (Rupees two thousand only) in shape of Pay Order / Demand Draft in favour of Dow University of Health Sciences, Karachi. Bidding Documents are also available at DUHS / SPPRA website. Interested Bidders may obtain further information personally from Directorate of Planning & Development from 11:00 a.m. to 02:00 p.m.

Note: Procuring agency (PA) may cancel / delete any item either reduce or enhance quantity. PA may reject all or any bid subject to the provision of SPPRA Rule 25 (1).

DIRECTOR PLANNING & DEVELOPMENT
Dow University Of Health Sciences
3rd Floor, Admn. Block
Baba-e-Urdu Road, Near Civil Hospital, Karachi
Phone No. + 92-21-99216065
E-mail: 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 LABORATORY EQUIPMENT / INSTRUMENTS
No. DUHS/P&D/2015/ 7388 Dated 25 May 2015

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 LABORATORY EQUIPMENT / INSTRUMENTS
No. DUHS/P&D/2015/ 7388 Dated 25 May 2015

ITB 16.1 (c) Dow University of Health Sciences, Baba-e-Urdu Road, Near Civil Hospital, 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: 25th June 2015 at 11:00 a.m.**

OPENING & EVALUATION OF BIDS

ITB 20.1 The bid opening shall take place at:
Dow University of Health Sciences,
Baba-e-Urdu Road, Near Civil Hospital, Karachi
Date: 25th June 2015
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, Baba-e-Urdu Road, Near Civil Hospital, 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 examine 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.

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.

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:

Dow University of Health Sciences, Baba-e-Urdu Road, Near Civil Hospital, Karachi.
Phone No. +92-21-99215754-7 (EXT. 190 & 191)
Fax No. +92-21-99215763
E-mail: 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 stores must be delivered, installed and put into operation as early as possible after the contract award.

ii) The bidder shall give in the offer his own schedule for the delivery and installation of various items of the Stores which shall be negotiable and subject to approval of the Procuring Agency.

iii) The delivery period shall start from the date of contract signature.

1.2 For Goods supplied from outside the Procuring Agency's country (CFR / CNF Basis):

i. The shipment of the items of Stores which are to be imported shall be started as early as possible; 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
GROUP 1

Item No.	NAME OF GOODS, TECHNICAL DESCRIPTION, SPECIFICATIONS, AND STANDARDS	Qty.
1	**THERMAL CYCLER (96 WELL)** Peak Block Ramp Rate: 3.9°C⁄sec • Format: 96-well plate, 0.2 ml tubes, Capacity: 1 x 96-well plate, 96 x 0.2 ml tubes• High Throughput Compatibility: High Throughput-Compatible, Comments: Standard 0.2 ml format and sample block enabled to run fast chemistry, VeriFlex™ Blocks: 25 °C gradient option(5 °C Zone-to-Zone), • Dimensions: Table Top • Tm Calculator: Menu driven through touch screen, • Reaction Speed: Standard, Fast• Program Features: Program overwrite protection, Auto re-start (after power outages), • Sample Ramp Rate: ± 3.35 °C⁄sec, • Display Interface: 6.5 in. VGA 32k color with touch screen, • Instrument Memory: USB and On-board• Temperature Range: 4.0-99.9 °C, • Temperature Accuracy: ±0.25°C (35°C to 99.9°C) • Reaction Volume Range: 10-80 µl, • Temperature Uniformity: <0.5 °C (20 sec after reaching 95 °C)	2 Nos.
2	**CENTRIFUGE (SMALL TABLE TOP, TEMPERATURE CONTROL) WITH ROTOR** 24 x 1.5/2.0 mL micro centrifuge tubes with max. 11 mm Ø capacity rotor 45° angle, • Speed up to 25,000 x g (16,220 rpm) Approx, • Compact footprint for use on all lab benches, • Aerosol-tight rotors for ergonomic rotor lid locking, • Safety Devices: Lid Interlock, Imbalance Detector, Overcurrent Circuit Breaker (Power Switch), Lid Open/Close Detector, temperature controlled	6 Nos.
3	**CENTRIFUGE (SWING BUCKET, TEMP CONTROL, LARGER SPEED LIMITS) WITH ROTORS** Intelligent Microprocessor Control, • Inverter Controlled Brushless Motor, • Automatic Rotor Identification System, • Instant RCF Reading, • Last Run Memory, • Overspeed Protection System, • Full Lid Interlock, • Imbalance Detection System, • Self Diagnostics, • Status Indicator, • CFC - Free Refrigerant Gas , • Precool Facility , • Easy To Service, • Superior Lid Lock Mechanism, • Multiple Acceleration / Deceleration Rates, • Selectable Temperature Range -9C To +40C , • Speed Range max 17000rpm, • Maximum RCF 30000 x g, • Timer 0 - 99 minutes with Continuous Mode, • 30 place centrifuge for 1.5 / 2.0 ml micro test tubes, With rotors for : • 96 well PCR plates, 15 ml falcon , 50 ml falcon, 1.5ml/2.0ml eppendorffs	3 Nos.
4	**SHORT SPIN CENTRIFUGE** • Intelligent Microprocessor Control, • Inverter Controlled Brushless Motor, • Full Lid Interlock, • Imbalance Detection System, • Fixed Speed 6000 rpm generates 2000 x g, • 8 x 1.5/2.0 mL rotor	2 Nos.

Item No.	NAME OF GOODS, TECHNICAL DESCRIPTION, SPECIFICATIONS, AND STANDARDS	Qty.
5	**HIGH SPEED CENTRIFUGE** Intelligent Microprocessor Control, • Inverter Controlled Brushless Motor, • • Full Lid Interlock, • Imbalance Detection System, • Self Diagnostics, • Status Indicator, • Multiple Acceleration / Deceleration Rates, • Speed Range 15000 rpm, • 200ml Bowl Volume centrifugation, • Continuous centrifugation of 2-15L Volume	1 No.
6	**CENTRIFUGE** Intelligent Microprocessor Control, • Automatic Rotor Identification System, • Instant RCF Reading, • Last Run Memory,• Overspeed Protection System, • Full Lid Interlock, • Imbalance Detection System, • Self Diagnostics, • Status Indicator, • CFC - Free Refrigerant Gas , • Precool Facility , • Superior Lid Lock Mechanism, • Selectable Temperature Range -20C To +40C , • Speed Range 16000 rpm, • 15-50mL Rotor, • 500mL – 1 L Rotor	1 No.
7	**BENCH TOP CENTRIFUGE** • Capacity: 4x 1000 ml (4L), • Speed up to 15,000 rpm Approx., • Compact footprint for use on all lab benches, • Aerosol-tight rotors for ergonomic rotor lid locking, • Safety Devices: Lid Interlock, Imbalance Detector Overcurrent Circuit Breaker (Power Switch), Lid Open/Close Detector , • Rotor buckets for cell culture/Blood separation/Microplate, • Micro Fluidic Card Holder, • Auto lock rotor exchange	1 No.
8	**GEL DOC (WITH COMPUTER, THERMAL PRINTER, AND PAPER PRINTER)** System shall be used for detection and quantification of nucleic acids, proteins and labels, bio imaging of cells, fluorescent and calorimetric applications; high quality imaging and resolution with epi and trans UV provision; 6-8 filter wheel with atleast 4 emission filters; blue, orange, red and green; semi-motorized zoom and filter change options, real-time imaging with Trans UV, Epi-UV, and Epi-WL provision. Inbuilt CCD camera with 16-bit file format and atleast 3 MP camera resolution is required. Suitable gel capture and gel analysis software is required along with HP Laser color printer to support the printing of the images. Smart dark chamber that automatically shuts of light when door closed and maximum sample emitted light with minimum light distraction., CCD camera with atleast 3 mega pixels resolution, 16-bit file format, 6X position for filters, different UV illumination modes like Trans-UV, Epi-UV, Epi-white , light, UV converter to white light, excitation source of UV with wavelength 312 nm and suitable gel capture and gel quant analysis software to run the system. The filter range should be for blue - 470 nm, Orange - 580nm, Green - 550 nm and Red - 600nm respectively. Transilluminator dimensions should be atleast 25-26 cms length wise with width of 21cms. Compatible computing system (laptop preferred) with integrated softwares for 1 D and 2 D capture and analytical software.	1 No.

Item No.	NAME OF GOODS, TECHNICAL DESCRIPTION, SPECIFICATIONS, AND STANDARDS	Qty.
9	**SMALL HORIZONTAL ELECTROPHORESIS ASSEMBLY WITH POWER PACKS** Horizontal Electrophoresis Kit: Mini unit: Complete Set - Including base gel running unit, safety lid, 7 x 10 cm gel trays, two 8-well and two 15-well combs and gel casting gates. Gel Casting Tray: Standard form; Trans illuminator, UV Power Supply: • Power Supply suitable for horizontal gel electrophoresis, , • Constant voltage and constant current modes , • Output Voltage: Adjustable from 0/5/10V to 500V/600V with an increment of 1 V or less , • Output Current: up to 800/1000 mA with increment of 1 mA , • Output power : 300W or more , • Terminals/ Sockets : 4 Pairs/4 , Safety: All necessary safety provisions like Over load, No load, Sudden change in load, power failure indication, Over Temperature and safe plugs and sockets	2 Nos.
10	**HORIZONTAL ELECTROPHORESIS TANK (MUPID ONE)** **Electrophoresis tank**, Made of Heat-resistant Materials where Gel solution up to 100°C could be poured into the Gel Tray. Clean up could be performed by using boiling water, • Safety Lid with Interlock System, **Voltage Variation Range,** • At least seven conventional voltages should be available with peak voltage constant at 140 V and output level can be change through pulse control., 2 large gel tray , 4 small gel trays, • 4 combs (13 well and 26 wells) , Combs to be spaced according to multichannel pipettes, •Gel casting stand	1 No.
11	**WIDE HORIZONTAL ELECTROPHORESIS TANK** **Wide Electrophoresis Tank** Horizontal Electrophoresis Kit: Wide Mini unit: Complete Set - Including base gel running unit, safety lid, at least two casting trays and combs. Gel Casting Tray: Two 15 x 10 cm UV transparent tray, casting gates, gel caster. Standard form; Trans illuminator, UV Combs sizes: two 15 and 20 well compatible with multichannel pipettes Power Supply: • Power Supply suitable for horizontal gel electrophoresis, , • Constant voltage and constant current modes , • Output Voltage: Adjustable from 0/5/10V to 500V/600V with an increment of 1 V or less , • Output Current: up to 800/1000 mA with increment of 1 mA , • Output power : 300W or more , • Terminals/ Sockets : 4 Pairs/4 , Safety: All necessary safety provisions like Over load, No load, Sudden change in load, power failure indication, Over Temperature and safe plugs and sockets	1 No.
12	**WATER BATH (SMALL 2 L)** **Water Bath** Easy-to-clean stainless steel water tank. , • Tank Capacity 2 L , • Easy to operate with different heat settings, • Adjustable water level regulator maintains bath depth at the desired level, • Stainless-steel cabinets with flanged cabinet top for	1 No.

Item No.	NAME OF GOODS, TECHNICAL DESCRIPTION, SPECIFICATIONS, AND STANDARDS	Qty.
	table-top installations, • Control temperature from ambient +5°C to 80°C, • Digital thermometer readout & temperature control	
13	**WATER BATH** • 4 and 8-hole models enlarge from 7/8 inch to maximum opening diameters of 5 and 6 inches respectively, • Copper-clad immersion heaters providing bath temperatures from ambient +10°C to 99°C, • Easy to operate with a min 4-position switch and 3 different heat settings, • Adjustable water level regulator maintains bath depth at the desired level, • Stainless-steel cabinets with flanged cabinet top for table-top installations, • Rugged epoxy-coated, corrosion-resistant stand, • Accommodates most laboratory glassware, • Control temperature from ambient , • Digital thermometer readout & temperature control, • Adjustable for racks, bottles & media bags, • Adjustable over temperature safety switch	2 Nos.
14	**SHAKING HEATING AND COOLING BLOCK** **Shaking Heating and Cooling Block**, • Adjustable mixing speed for gentle to vigorous shaking, • Autoclavable and freezer-safe numbered racks , • Short-mix function for quick "vortex" applications, • Digital display of all parameters including actual and set temperature, • Exchangeable blocks for micro test tubes or micro plates , • Quick heat-up and cooling times, • Programmable to allow parameters to be stored for common or successive applications including Intermittent mixing for enzyme reactions or DNA hybridizations, • Automatically recognition of Thermoblocks., • RS-232 interface , • Temperature range from approx. 13°C below room temperature up to 99°C, • Temperature Accuracy: Approx. 20°C to 45°C, ±0.5°C; below ambient and above 45 °C, ±2°C, • Heating rate: approx. 5°C/minute, • Mixing Speed: approx. 300 to 1,500 rpm, • Mixing Stroke: approx. 3 mm, • Timer: 1 minute to 99 hours or continuous	4 Nos.
15	**SHAKING HEAT BLOCK THERMO BLOCK ATTACHMENT** Programmable, 1.5 ml tubes slot, 96 well plate, 0.5 ml tube, 50 ml tube, for Item no 14 above	4 Nos.
16	**NANO DROP** • To Measures nucleic acid concentration at 260 nm and purity using the 260/280 nm ratio, • To Measures purified protein concentration at 280 nm, • Should Employs the patented NanoDrop microvolume sampling technology, • Delivers the accuracy and reproducibility expected from NanoDrop instruments, • Uses built-in controls and software – no computer required, • Optional printer available for creating cryogenic labels	2 Nos.
17	**AUTOMATIC PIPETTE DISPENSER** • Covering volumes from 1uL to 50mL, • Continuously Adjustable Electronic Repeating Pipette, Rechargeable battery, • Automatic tip volume recognition	1 No.

Item No.	NAME OF GOODS, TECHNICAL DESCRIPTION, SPECIFICATIONS, AND STANDARDS	Qty.
18	**REPET-TIPS FOR REPETMAN** Tips for Automatic Pipette Dispenser at Item # 17: 50 ml, 0.5 ml, 12.5 ml,5 ml	1 No.
19	**WHITE LIGHT/UV TRANSILLUMINATORS** • For detection double-stranded nucleic acids that have been labeled with fluorescent dyes, , • Supply UV and white light side by side, • 302/365nm UV • 20 x 20 cm, • Gel-Ruler, fluorescent with cm markings • Gel-Scooper, for transferring gels , • Gel-Tray to protects trans illuminator filter , • Plexiglass and glass filter combination built-in	2 Nos.
20	**PCR HOOD** • UV Cabinet/PCR Workstation with Dual UV Protection Lamp, UV Recirculator and 3 Internal Power Socket , • Air Flow Bactericidal Air Re-circulator, 25 m3/hr Air Flow Exchange , • Lamp - 1 x 15W White Lamp for Workplace Illumination , • Timer - 0 to 24hrs, Digital , • UV Setting Re-circulator, 25W (Efficiency >99% per 1 Cycle) , • UV Lamp - Open, 25W Bactericidal, 254 nm, Ozone-Free , • Internal Socket 3, • Size - Approx d: 580 mm w: 1200 mm h: 580 mm, • Stainless Steel Frame and Working Area; , • Glass with UV-Protective film	2 Nos.
21	**FRIDGE FREEZER** • Freshness Preservation Box with adjustable humidity, , • Category A++ cooling appliance, • Fridge capacity +150 L, • Freezer capacity +90 L, • Constant temperature sensor, , • No frost freezer, • Built in stabilizer	1 No.
22	**REFRIGERATOR** Gross volume: Approx. 350+ Liters Refrigerant: CFC free Insulation foam: Cyclopentane Insulation width: 55 mm Cabinet material: Stainless steel 304 Body material: Prepainted steel Glass shelves: 12, can be positioned at variable heights Standing on: Adjustable feet Doors, glass: Two individually lockable Operating temperature: 0-7°C Available operating temperature: +2 to +8°C, user selectable Closest alarm points: Operating +/-3° Warmest/Coldest alarm point: +12/-2°C Temperature display: Digital in 0,2 units Alarm display high/low temp.: Visual and audible	1 No.

Item No.	NAME OF GOODS, TECHNICAL DESCRIPTION, SPECIFICATIONS, AND STANDARDS	Qty.
	Memory of high/low temp. Included Power failure alarm: Included Remote alarm connectable: Included Switching on/off: Key operated Door opening: Key controlled Forced air circulation: Yes Ion Deodorizing Feature	
23	**CLC GENOMICS WORKBENCH** • Genomics Workbench should enable to rapidly analyze and visualize the huge amounts of data generated by NGS machines. It should blend seamlessly into existing sequencing analysis workflows, • Genomics Workbench should include High Performance Computing accelerated assembly of High-Throughput Sequencing data as well as a large number of downstream analysis tools. , • Genomics Workbench should comprehensively analyze and visualize data from all major NGS platforms, like SOLiD, 454, Sanger, Illumina and Ion Torrent. , • Read mapping with Support for analysis of hybrid data , • Multiplexing , • Re-sequencing , • Identifying genomic rearrangements, • Transcriptomics Features with Digital Gene Expression, Small RNA analysis, Library construction, • Epigenomics analyses , • Classical Sequence Analysis , • Server Integration , • Complete with latest generation branded compatible hardware computing system (LAPTOP preferabbly 17 inch). Should be based on windows / linex platform	1 No.
24	**MICROWAVE OVEN** • 36 Liter with 1000 w nominal power, • With grill of 1300 w nominal power, • With Turntable	2 Nos.
25	**ICE CRUSHER** • Self-contained units to eliminate the need to order a separate ice storage bin, • Compact size allows convenient placement under standard 40"H laboratory benches, • Slide-away door , • Maximum efficiency and performance under continuous operating conditions. , • Air cooled condenser units , • Flaked-Ice Makers with capacity up to 395 lbs of flaked ice per day and store 140 lbs in the self-contained bin.	1 No.
26	**SPECTROPHOTOMETER** Photometric research applications such as DNA, RNA and protein analysis - a broad wavelength range (including UV area), path length correction and a fast reading speed. -Freely selectable wavelengths from 200 to 1000nm for the demands of various assays - Both microplate and cuvette reading for any throughput requirements - Visual internal software on a large color screen for quick measurements - A selection of multiple operation languages with respcetive software for assay design and a compact computing system	1 No.

Item No.	NAME OF GOODS, TECHNICAL DESCRIPTION, SPECIFICATIONS, AND STANDARDS	Qty.
27	**HOTPLATE MAGNETIC STIRRER** Laboratory hotplate/stirrer with warm-up time ambient to maximum of 9 minutes, , • Approx 225 sq.cm heating surface area, , • Maximum temperature approx 510 deg. C, • Stirring range approx 100 to 1000 rpm. Unit to be supplied complete with PTFE coated stirring rods.	2 Nos.
28	**STIRRING BEADS N ROD** Propylene stirred retriever and stirring bar kit (16 beads)	5 sets
29	**pH METER** • Unit to have buffer sachets, electrode arm, electrode lead and shorting plug. , Available modes: PH mV (absolute) relative mV, temperature, timer, 4 digit display, • 8 character alphanumeric prompting LED display. ,• Measurement of pH, millivolts and temperature., • 0-14 ph range, • Temperature compensation, • 3 point calibration	1 No.
30	**HYBRIDIZATION OVEN AND UV CROSS LINKER AND FIVE BOTTLES SUITABLE FOR SOUTHERN BLOTTING** The hybridization oven features:, • Allow crosslinking and hybridization at one location, • Hybridization oven and crosslinker can operate independently of each other, • Temperature control (ambient to +10°C to 99.9°C), • Variable speed control (10 to 15 RPM) for consistent saturation of samples, whether it be for washing or hybridizing, • Large LCD display is easily readable, • Drip trays catch spills, • Stainless steel internal construction , • Multiple bottle sizes, arrangements and off-set bottle positions, • Rocker plate allows use of various types of flasks, The Cross Linker chamber:: • Shortwave 254nm, 8 watt, ultraviolet tubes for uniform overhead UV illumination, • Preset and manual controls for ultraviolet or time exposures, • Preset exposure delivering 120,000 microjoules or five minutes of exposure, • Microprocessor measures and controls UV output, ensuring maximum energy efficiency, • Large LCD display continuously displays time or energy settings, • Tactile membrane switch keypad, • Window for viewing of the process with UV protected glass , • Pull-out drawer	1 No.

Item No.	NAME OF GOODS, TECHNICAL DESCRIPTION, SPECIFICATIONS, AND STANDARDS	Qty.
31	**VERTICAL ELECTROPHORESIS ASSEMBLY (SMALL) WITH POWER PACK** **Vertical Electrophoresis Kit:** Mini unit: Complete Set - Including base gel running unit, safety lid, at least two 8 well n two 12 well combs. Gel Casting Tray Combs sizes: 1.0 mm -4 wells, 8 wells &12 wells; 2.0 mm - 4 wells, 8 wells & 12 wells along with spacers and casting stand. Glass plates , Power Supply: • Power Supply suitable for vertical gel electrophoresis, , • Constant voltage and constant current modes , • Output Voltage: Adjustable from 0/5/10V to 500V/600V with an increment of 1 V or less , • Output Current: up to 800/1000 mA with increment of 1 mA , • Output power : 300W or more , • Terminals/ Sockets : 4 Pairs/4 , Safety: All necessary safety provisions like Over load, No load, Sudden change in load, power failure indication, Over Temperature and safe plugs and sockets	3 Nos.
32	**VERTICAL ELECTROPHORESIS ASSEMBLY (LARGE) WITH POWER PACK** **Vertical Electrophoresis Kit:** Electrophoresis Equipment Large Format Vertical. Complete Set - Including base gel running unit (electrophoresis cell 16 x 16 cm gel size), safety lid, 4 gel capacity, includes four spacers, glass plates, sandwich clamps, casting stand, upper buffer dam, alignment card with leveling bubble Combs sizes: 10, 12, 15 ,20 Combs (other to be quoted as option) Large format vertical electrophoresis cell, 16 x 16 cm gel size, 4 gel capacity, includes four spacers, two combs, glass plates, sandwich clamps, casting stand, upper buffer dam, alignment card with leveling bubble and power pack , Power Supply: • Power Supply suitable for **vertical** gel electrophoresis, , • Constant voltage and constant current modes , • Output Voltage: Adjustable from 0/5/10V to 500V/600V with an increment of 1 V or less , • Output Current: up to 800/1000 mA with increment of 1 mA , • Output power : 300W or more , • Terminals/ Sockets : 4 Pairs/4 , Safety: All necessary safety provisions like Over load, No load, Sudden change in load, power failure indication, Over Temperature and safe plugs and sockets	1 No.
33	**DIGITAL WEIGHING BALANCE** • Precision weighing balances , • Capacity 0.001 - 320 gm WITH casing	1 No.
34	**DIGITAL WEIGHING BALANCE** Precision weighing balance with 2.5 kg with two decimal place calibration	2 Nos.
35	**TOP-LOADING WEIGHING BALANCE** Precision Laboratory Balance up to 5KG	1 No.

Item No.	NAME OF GOODS, TECHNICAL DESCRIPTION, SPECIFICATIONS, AND STANDARDS	Qty.
36	**FLOURESCENCE MICROSCOPE** Trinocular Research Optical Fluorescence Microscope with ergonomic design, For bright filed, dark field and fluorescent imaging with camera, Image analysis software and Dust cover, Light source 1) 30 W; 12 V Halogen lamp or higher for bright / dark field imaging With additional 1 lamp or 3 W LED/ Neo LED or higher for bright / dark field imaging (equivalent to 30 w halogen lamp) 2) 100 W/ 120 W /130 W Mercury lamps for fluorescent imaging with fiber optics cable with lifetime of 2000-2500 hours Lenses: Apo chromatic or semi apo chromatic With anti glaring/ antifungal/ antimicrobial coatings Wide field Eyepiece adjustable positions as well as focusing: 10X eye piece Optional: 20 X eye piece Objectives For transmitted-light applications: Objective turret with 6x BF For Std. fluorescence applications: Objective turret with 3x DIC/3x BF Std. interface for HBO 50, HBO 100 HXP 120, Colibri LED fluorescence applications: Inte-grated illumination Different LED modules Synchronized switching with the reflector For Refelcted light: Standard inter-face for HAL 100 or HBO, DF Switchable diffuser Slot for polarizer slider Stage: X – Y movement (mechanical stage) Preferred separate X – Y movement Optional Automatic X – Y movement Preferred separate X – Y movement With independent course and fine adjustment for very fine focusing Fluorescent Filters: Minimum 4-5 filter position or slot; with neutral density filter to control the fluorescence intensity UV filter (excitation range 330/340 nm to 400 nm) and Optional 1) Green filter (excitation; kindly mention the excitation and emission range) 2) Red filter (excitation; kindly mention the excitation and emission range) 3) UV filter (excitation range 250 to 300 nm) 4) Blue filter (excitation; kindly mention the excitation and emission range) Phase Contrast (optional)	1 No.

Item No.	NAME OF GOODS, TECHNICAL DESCRIPTION, SPECIFICATIONS, AND STANDARDS	Qty.
	Condenser should be compatible for phase contrast imaging Phase contrast optics 20 x phase contrast Optional 40 x phase contrast Camera; • High sensitive and high resolution CCD Color camera with peltier cooling with minimum of 5 mega pixel or more The camera speed should be in the range of 4 to 4.5 fbs minimum And 23-33 fbs maximum • Kindly provide the details of speed etc Resolution: near to 2500 to 2000 or more Image Analysis Software: Detailed calibration; measurement size, shape, position, height, orientation and intensity etc Analysis tools including statistics, histograms etc Saving options: tiff, jpeg, bmp, JPG Data saving: word/ excel/ notepad etc The complete manual for microscope as well as for software should be provided along with microscope 2. Basic tool to repair it or fixing the attachment etc must be provided. 3. complete drawing of installation as well needed information for repair or maintenance manual should be provided Notes: a) PREFERRED: Microscope, camera and software should be from a single manufacture along with uptodate computing system b) The selection will be strictly on the basis of technical data sheet. Minimum 5- 10 samples will be analyzed on the quoted model. The supplier has to use the same quoted model for demonstration; in case of discrepancy the same will be rejected without assigning any reasons. If the obtained results during demonstration are not persistent with the supplied instrument, the same will be rejected.	
37	**ELECTROPORATION SYSTEM FOR EUKARYOTIC CELLS, BACTERIA AND YEASTS** Electroporation System for Eukaryotic cells, bacteria and yeasts for efficient and gentle electroporation. , • With Soft Pulse technology that can apply extremely short electric pulses for the highest survival rates. , • The relevant parameters of voltage and pulse duration can be directly set., • Electronic pulse discharge shall be maintained exactly independent of the sample resistance, • Reproducible results., • Module for bacteria and yeasts should enable the transformation of bacteria and yeasts in addition to the electroporation of eukaryotic cells. , • The 5 ms constant time , • Pulse voltage can be selected between 200 and 2,500 V. , • Programmable voltage and optimized, fixed pulse times, • Directly adjustable voltage and time constants, • Soft Pulse technology, • Microprocessor-controlled pulse discharge, • Optimized buffer system, • Fusion module provides highly efficient electrical cell fusion, • Different modules for cell type, • Fusion module should provide for highly efficient electrical cell fusion **Transfection System**: • Efficiency - Up to 90% in many cell types, including difficult-to-transfect cells, primary and stem cells, • Flexibility - easily transfect from 2 x 104 cells to 6 x 106 cells per reaction, • Single reagent kit	2 Nos.

Item No.	NAME OF GOODS, TECHNICAL DESCRIPTION, SPECIFICATIONS, AND STANDARDS	Qty.
	for all cell types, • Open system allows electroporation parameters to be optimized freely	
38	**HEMACYTOMETER** • Thermal and shock-resistant glass, • Cell depth 0.1 mm, • Two cover glasses, • Dimensions 26 x 20 x 0.4 mm thick	3 Nos.
39	**MULTI-CHANNEL PIPETTER** 5-50ul (8-channel), 30-300ul (8-channel), 100-1200ul (8-channe)	5 Sets
40	**MICROPIPETTE** Adjustable Volume micro Pipette : 0.1-2 ul, 1-10 ul, 10-100 ul, 100-1000 ul	8 Sets
41	**PIPETTE BOY** Jet Pro pipette Boy 1-100 ml	4 Nos.
42	**LIQUID NITROGEN TANK** Nitrogen Capacity: 50 liters, Neck diameter: 125mm, Outer diameter: 19.7 inches, Height: 31.7 inches, Static evaporation: 0.388L/d	1 No.
43	**DRYING OVEN FOR HEAT STEZRILIZATION** • For the sterilization of instruments and equipment that cannot withstand steam sterilization., • Temp range: 50 to 250o C, • Temp variation: Not greater than 4o C over 60 minutes, • Temp fluctuation: Not greater than 0.3o C over 30 minutes, • Temp drift: Not greater than 1o C over 2 hours, • Temp reproducibility: 1o C, • Temp overshoot: Not greater than 1o C, • Capacity: Not less than 60 litres, • Shelves: 2 off stainless steel construction, tip proof type, • Interior construction: Stainless steel, • Exterior construction: Rust proof steel, Features, • Control panel shall be located for easy vision., • Door shall be strongly secured against a rubber seal by a self-locating door catch. • Sterilizer temperature shall be controlled by a solid state thermostat. Push button, digital, temperature setting shall indicate the set temperature. , • Unit shall be supplied with secondary over-temperature cut-out for protection in the event of main thermostat failure to comply with HTM2010., • Door should remain locked till cycle complete indication comes on with safe handling temperature. , • Should record complete cycle, • The control panel shall be fitted with a mains failure-indicating lamp., • Process timer shall be adjustable to suit individual sterilization periods. Timing shall start when the heaters start to cycle near to the set temperature.	1 No.

Item No.	NAME OF GOODS, TECHNICAL DESCRIPTION, SPECIFICATIONS, AND STANDARDS	Qty.
44	**FRENCH PRESS** French press Homogenizer • Capacity : Up to 24 x 2mL, • Operating temperature : 4°C to 30°C, • Required for, • Dry grinding • Micronisation, • Homogenization from fresh or snap-frozen tissues, • Lysis of micro-orgnaisms, • Dissociation of living bacteria Optional: Cooling module for protection of temperature sensitive molecules throughout the entire homogenization process.	1 No.
45	**ELECTROPORATOR** Electroporator, • Micropulser Electroporator, • High-voltage 3,000 V with 200–3,000 V range, • Operating temperature: 3.5–35°C, • Complete with Sterile Electroporation Cuvettes x 10	1 No.
46	**REPLICA PLATING TOOL (STAMP)** • Device to accurately replicate colonies grown on 90- to 100-mm petri dishes., • Locking aluminum ring for easy control of the contact surface.	1 No.
47	**COLONY COUNTERS WITH LIGHT AND MAGNIFYING GLASS** • Digital colony counter with digital display, • With counting pen, • With magnifying glass, • For counting bacterial and fungal colonies	1 No.
48	**MICROPLATE READER WITH WASHER** Multi Label Plate Reader:• Wavelength range: 200-1000 nm, • 2 °C to 50 °C , • Plate format: 1- to 3-well, • Shaking: linear, orbital, dual wave length, orbital, • •Microplate Reader with washer: • Multimode reader for all common assay types on 96,384 well plates.• Detection: Absorbance/Calorimetric, Luminescence, Fluorescence, UV/VIS Absorbance, • Compact in size • With respective software and computer **Microplate washe**r: • Suitable for ELISA / Cell-based assays (model dependent) / Magnetic bead, polystyrene bead (Multiplex assays, Bead-based ELISA) / Filtration-to-waste processes • Fast and reliable plate washing; Low noise; automatic rinse setting to prevent clogging • Capacity: Up to three reagent dispensers with choice of either peristaltic pump or syringe drive technologies for different assay requirements • Applications: Washing, Dispensing and Aspirating; High throughput • Stand-alone wash and aspiration unit; Up to 6 wash cycles (fill and aspirate) per pass• Coaxial wash/aspirate • Gentle and complete aspiration of each well • Universal logic interface compatible with all Moduline Systems dispensers• Plate Formats: 96 and 384 well plates • Performance:Precision : +5% RSD (0.9% NaCl W/v) Manifold Channels: 8x12 / 1 x 32 / 4 x 32 or comparable • Residual Volume>1µL residual • Wash Volume: Up to 3000uL; Selectable in 1 µL increments • Soak time- In plate mode: 0-60 min per 1 sec interval • In strip mode: 0-16 min per 1 sec interval • Operating programs (about 50 programs storage for different plate types), self contained – no external computer required	1 No.

Item No.	NAME OF GOODS, TECHNICAL DESCRIPTION, SPECIFICATIONS, AND STANDARDS	Qty.
49	**MICROPLATE READER** Multi Label Plate Reader:• Wavelength range: 200-1000 nm, • 2 °C to 50 °C , •Shaking: linear, orbital, dual wave length, orbital, • Multimode reader for all common assay types on 96,384 well plates.• Detection: Absorbance/Calorimetric, Fluorescence, UV/VIS Absorbance, , Desirable luminensece • Compact in size • With respective software and computer	1 No.
50	**MICROINCINERATOR (WIRELOOP STERILISER)** • Quickly and Safely Sterilizes Metal Loops and Needles without using an open flame., • Sterilization via infrared heat at a temperature of 815°C (1500°F). , • Sterilization time for Loops and needles should be sterilized within 5–7 seconds, • The heating element to be protected by a stainless steel cowl , • Adjusted Angle to different positions	2 Nos.
51	**IEF SYSTEM AND ACCESSORIES (FOR 2D ELECTROPORESIS)** IEF system (for 2D Electrophoresis) IEF System basic unit 240VAC including:• Basic unit , • Cable,, • Control software with accessories , • Electrode assemblies , • Sample cups, • Sample cup insertion tool, • Electrode wicks, • Paper bridge pads , • Spirit level , • Manifold trays (7 cm, 11 cm, 13 cm focusing trays) , • Pairs of forceps , • Mineral oil, • Cleaning brushes , • Cleaning solution , • IPG buffer	1 No.
52	**WESTERNBLOTTING (SEMI DRY TRANSFER EQUIPMENT)** Western Blotting Unit: • Blotting instrument, includes base, 2 cassettes to hold 1–2 midi or up to 4 mini blotting sandwiches, blot roller, and starter consumable kit• Transfer unit must be suitable for mini/midi electrophoresis also. , • Provision for cooling. , Semi-dry Blotting unit: • Should use minimal buffer to saturate blotting papers and membranes. , • Unit should accommodate mini/midi/maxi gels or multiple mini-gels side-by-side • System should have a built-in power supply with automatic stopping feature. When the buffer becomes depleted, the transfer should stop automatically, saving the transfer before overheating. , • Light weight and easy to handle.	1 No.
53	**WESTERNBLOTTING (WETTRANSFER EQUIPMENT)** Commodate 2 mini-format gels transfer up to two mini gels (10 x 7.5 cm) in an hour , complete unit with tank, sandwich plates, at least 10 sponges, and 2 sealed ice block	1 No.
54	**GEL SCANNER BIO-5000 GEL SCANNER** • Color and gray scale Flatbed Scanner for Gel Images & Films, • CCD Image Sensor, • Resolution: Optical: 4800 dpi (5 um spot size, 94 lp/mm) Hardware: Up to 4800 x 9600 dpi , • Light Source LED, • Scanning Area minimum 8” x 10”, • Scanning Speed less than 12 Sec , • Calibration Speed less than 30 Sec, • Bit Depth:	1 No.

Item No.	NAME OF GOODS, TECHNICAL DESCRIPTION, SPECIFICATIONS, AND STANDARDS	Qty.
	Input: 48-bit color, 16-bit gray scale Output: 24-bit color, 8-bit grayscale, • Scanable Media Transparent (Wet/ Dry gel, Film), Reflective (Paper), • Adobe Acrobat Reader, • Adobe Photoshop Elements	
55	**MICROPLATE SHAKER** Should Holds two 96 well plates , • Lyses all cell types when used in combination with bead beating, • Grinding time and oscillation frequency to be digitally preset, • Speeds up to 30 vibrations per second, , • Memory keys for 3 standard working programs, • Adjustable parameter lock, • Automatic centering of plates for easier, quicker and safer handling	1 No.
56	**OFF-GAS ANALYSER (FOR FERMENTATION LAB)** Off-Gas Analyzer , Capability of connecting to preferablybioreactor multiple bioreactors with software f and a suitable computing system or visualization, • Measurement Range CO2: 0 -20%, O2: 0-100%, • Resolution 0.01% for both, • Accuracy +/-2%, • Response Rate less than 50 Sec for CO2. Less than 20 Sec for O2	2 Nos.
57	**CHROMATOGRAPHY EQUIPMENT/HPLC** With 0.01ml/min to 150ml/min flow rate, complete with laboratory to process scale, fraction collector, software, columns, spares, accessories and computing system (laptop preferred)	1 No.
58	**ULTRAFILTERATION/DIAFILTERATION EQUIPMENT** Laboratory to process scale, accessories, filter cassettes, capability of cross flow filtration with itegrated computing and software system	1 No.
59	**HOMOGENISER** High pressure or beadmil, Lab to pilot scale, capable of running continuous homogenisation,	1 No.
60	**LASER DIFFRACTION PARTICLE SIZE ANALYZER** Laser Diffraction particle size analyzer General: • Particle size: Suspensions, emulsions, dry powders, • Principle: Laser light scattering, • Analysis: Mie and Fraunhofer scattering, • Data acquisition rate: 10 kHz, • Typical measurement time: <10 sec, Optics: • Red light source: Max. 4mW He-Ne, 632.8nm, • Blue light source: Max. 10mW LED, 470nm, • Lens arrangement: Reverse Fourier (convergent beam), • Effective focal length: 300mm, Detector: • Arrangement: Log-spaced array, • Angular range: 0.015 - 144 degrees, • Alignment: Automatic, Size: • Particle size: 0.02 - 2000 µm , • Number of size classes: 100 (user adjustable), • Accuracy: Better than 0.6% , • Precision / Repeatability: Better than 0.5% variation *, • Reproducibility: Better than 1% variation , Software: with a cpmact computing system (preferably laptop)• 21 CFR part 11: Enables an operating mode that assists with ER/ES compliance	1 No.

Item No.	NAME OF GOODS, TECHNICAL DESCRIPTION, SPECIFICATIONS, AND STANDARDS	Qty.
61	**VACUUM FLASK/ ASPIRATION DEVICE** • Hydrophobic filter for vacuum source protection, • Shatterproof bottle for prevention of spills,, • Stand for securely holding the bottle in place,, • Auto-clavable, • Integrated pump with vacuum control -300 to -600 mBar and flow rate of 8 lit / min, • Aspiration Rate 16 ml / sec, • Self-closing connectors for avoiding escape of drops or aerosols from disconnected bottle and tubing., • Level sensor detecting when the bottle is full preventing liquid overflow., • As per Biosafety level 1, 2 and 3 labs	2 Nos.
62	**INVERTED PHASE CONTRAST MICROSCOPE WITH ACQUISITION FACILITY** • Ideal for Cell culture, • Routine laboratory microscope with phase contrast and dark field., • 1 x Microscope stand with mechanical stage 75 x 30R, • 2 x Halogen bulb 6v 30w or Alternate Light Source, • 1 x Binocular tube 35deg/20, • 1 x Conversion filter, • 1 x Dust cover, • 1 x ABBE condenser 0.9/1.25 with H/D/Ph 1-2-3 turret, • 1 x Ultra condenser, • 1 x Condenser carrier, • 1 x Eyepiece 10/20 Br, • 1 x Eyepiece 10x/20 Br foc, • 2 x Eyepiece eyecup, • 1 x Achroplan 10x/0.25 Ph1, • 1 x Achroplan 20x/0.45 Ph2, , • 1 x Achroplan 40x/0.65 Ph2, • 1 x Achroplan 100x/1.25 oil Ph3, • 1 x Achroplan 100x/1.25 oil, iris, Camera; : • High sensitive and high resolution CCD Color camera with peltier cooling with minimum of 5 mega pixel or more, The camera speed should be in the range of 4 to 4.5 fbs minimum And 23-33 fbs maximum , • Kindly provide the details of speed etc Resolution: near to 2500 to 2000 or more, Detailed calibration; measurement size, shape, position, height, orientation and intensity etc Analysis tools including statistics, histograms etc Saving options: tiff, jpeg, bmp, JPG Data saving: word/ excel/ notepad etc The complete manual for microscope as well as for software should be provided along with microscope, Basic tool to repair it or fixing the attachment etc must be provided., complete drawing of installation as well needed information for repair or maintenance manual should be provided, **Notes:**PREFERRED: Microscope, camera and software should be from a single manufacture , The selection will be strictly on the basis of technical data sheet. Minimum 5- 10 samples will be analyzed on the quoted model. The supplier has to use the same quoted model for demonstration; in case of discrepancy the same will be rejected without assigning any reasons. If the obtained results during demonstration are not persistent with the supplied instrument, the same will be rejected.	1 No.

Item No.	NAME OF GOODS, TECHNICAL DESCRIPTION, SPECIFICATIONS, AND STANDARDS	Qty.
63	**CELL IMAGING SYSTEM WITH TRINOCULAR RESEARCH OPTICAL FLUORESCENCE MICROSCOPE** 3 Color detection (Blue, Green and Red) For bright field, dark field and fluorescent imaging with camera, Image analysis software and Dust cover Light source 1) 30 W; 12 V Halogen lamp or higher for bright / dark field imaging With additional 1 lamp or 3 W LED/ Neo LED or higher for bright / dark field imaging (equivalent to 30 w halogen lamp) 2) 100 W/ 120 W /130 W Mercury lamps for fluorescent imaging with fiber optics cable with lifetime of 2000-2500 hours Lenses: Apo chromatic or semi apo chromatic With anti glaring/ antifungal/ antimicrobial coatings Wide field Eyepiece adjustable positions as well as focusing: 10X eye piece Optional: 20 X eye piece Objectives For transmitted-light applications: Objective turret with 6x BF For Std. fluorescence applications: Objective turret with 3x DIC/3x BF Std. interface for HBO 50, HBO 100 HXP 120, Colibri LED fluorescence applications: Inte-grated illumination Different LED modules Synchronized switching with the reflector For Refelcted light: Standard inter-face for HAL 100 or HBO, DF Switchable diffuser Slot for polarizer slider Stage: X – Y movement (mechanical stage) Preferred separate X – Y movement Optional Automatic X – Y movement Preferred separate X – Y movement With independent course and fine adjustment for very fine focusing Fluorescent Filters: Filter Type: FITC, DAPI, Texas Red Minimum 4-5 filter position or slot; with neutral density filter to control the fluorescence intensity UV filter (excitation range 330/340 nm to 400 nm) and Optional 1) Green filter (excitation; kindly mention the excitation and emission range) 2) Red filter (excitation; kindly mention the excitation and emission range) 3) UV filter (excitation range 250 to 300 nm)	1 No.

Item No.	NAME OF GOODS, TECHNICAL DESCRIPTION, SPECIFICATIONS, AND STANDARDS	Qty.
	4) Blue filter (excitation; kindly mention the excitation and emission range) Phase Contrast (optional) Condenser should be compatible for phase contrast imaging Phase contrast optics 20 x phase contrast Optional 40 x phase contrast Camera; • High sensitive and high resolution CCD Color camera with peltier cooling with minimum of 5 mega pixel or more The camera speed should be in the range of 4 to 4.5 fbs minimum And 23-33 fbs maximum • Kindly provide the details of speed etc Resolution: near to 2500 to 2000 or more Image Analysis Software: Detailed calibration; measurement size, shape, position, height, orientation and intensity etc Analysis tools including statistics, histograms etc Saving options: tiff, jpeg, bmp, JPG Data saving: word/ excel/ notepad etc The complete manual for microscope as well as for software should be provided along with microscope 2. Basic tool to repair it or fixing the attachment etc must be provided. 3. complete drawing of installation as well needed information for repair or maintenance manual should be provided Notes: a) PREFERRED: Microscope, camera and software should be from a single manufacture b) The selection will be strictly on the basis of technical data sheet. Minimum 5- 10 samples will be analyzed on the quoted model. The supplier has to use the same quoted model for demonstration; in case of discrepancy the same will be rejected without assigning any reasons. If the obtained results during demonstration are not persistent with the supplied instrument, the same will be rejected.	
64	**QUANTITATIVE PCR (REAL-TIME PCR)** 1. An automated sequence detection system for a high throughput continuous detection and quantitation of nucleic acid sequences by real-time PCR technique using in-built Peltier based thermal cycler. With a simplified workflow, intuitive software, it should offer exceptional reproducibility with minimal well-to-well variation. , 2. Real-time amplification for measuring nucleic acids from purified samples using 96 and 384 well plates with 96 and 384 interchangeable block. , 3. Should accommodate the interchange of a , 96-well, 96-well Fast, 384-well, or TaqMan array card block, 4. Measurement mode - Real-time measurement, on-line continuous display of readings during the run. , 5. The system should be fully compatible with the full range of TaqMan assays including MicroRNA assays, Long Non-coding RNA assays, and Pri-miRNA assays. , 6. The System should offer latest optics and technology providing enhanced fluorescence detection enabling accurate and sensitive data analysis. , 7. The system should complete 40 cycle real time PCR reaction using flurogenic 5 nuclease assay and fast chemistries in a standard 384 well	1 No.

Item No.	NAME OF GOODS, TECHNICAL DESCRIPTION, SPECIFICATIONS, AND STANDARDS	Qty.
	plate under 35 minutes. Instrument should also run in standard ramping mode with standard chemistry. , 8. Sensitivity: Demonstrated down to 1 copy. , 9. Resolution: Should detect as little as 1.5-fold changes in target quantities in single-plex reaction. , 10. Upto Six decoupled excitation and emission filter channels for the greatest number of dye combinations and maximum multiplexing capabilities. , Excitation & Detection wavelengths: 6 excitation (450□670 nm) and 6 emission (500□720 nm) filter sets to enable collection of up to 21 unique combinations of wavelengths during a single run for multiplexing. Calibrated dyes at installation should be FAM, SYBR, SYTO9, Fluorescein, SYPRO, JOE, TET, HEX, TAMRA, NED, BODIPY, TMRX, ROX, Texas Red, LIZ, Alexa fluor, Joda4. , 11. Should support following blocks and volumes: , Peak Block Ramp Rate: 3.0°C⁄sec 384-well plate , Sample Ramp Rate: ± 1.6°C⁄sec, System memmory: USB and On-board, Temperature range: 0 to 100 Centigrade, Temperature accuracy: ±0.25°C (35°C to 99.9°C), Temperature uniformity: <0.5 °C (20 sec after reaching 95 °C), Any other block options should be also included. All blocks should be easily , changeable by the user. , 12. Full compatibility with any standard or fast-cycling 384- or 96-well plates and reagents. , 13. The vendor should provide readymade and validated TaqMan primer probe assays for different genes in human, mouse, rat etc. in 384 well preloaded ready to use format to validate microarray hits quickly and economically. , 14. Optimum reaction volumes for each application □ 5 to 100 µl. The vendor should specify minimum working volume if lower than 5 µl. Preference would be given to those platforms that minimize reaction volumes to 2 µl or less. , 15. The manufacturer should be able to provide a choice of ready-made assay kits or ready-to-make assay kits for Gene Expression as well as SNP analysis. , 16. The vendor should provide comprehensive training on the operation of the instrument, chemistry options and software. This training should be provided free of cost. , 17. Any other additional protocol/accessory that would facilitate high-throughput analysis of gene expression especially using the TaqMan chemistry should be included. , A business line PC Workstation and software (including offline analysis) should be provided with the system. However, a stand-alone instrument (such as built-in touch screen that provides one touch protocols for fast and easy assay setup for broad range of applications) would be preferred.	
65	**FLOW CYTOMETER** • Flow cytometer with following specifications, • System with minimum 2 lasers - 488 nm and 633 nm, • Capability to simultaneously image minimum 8 colors Immunophenotyping panel using FITC, PE, PerCP-Cy™5.5, PE-Cy™7, APC, APC-Cy7, AmCyan, and Pacific Blue™ fluorophores , • Should use minimal sheath fluid, capped at max 1 liter per hour, • Should have capacity to vortex the sample before analysis, • Ability to accept 4 ml FACS tubes, 1.5 ml microfuge tubes and multiwell dishes (6, 12, 24 and 96 well), • Should have auto cleaning function of the injector, • Ability to use variable sample volume from 25ul to 4 ml, • Should have an attached waste container, • Desirable dynamic range 4 logs, • Ability to analyse samples ranging from bacteria, yeast to mammalian cells, • 3 years warranty with AMC, •	1 No.

Item No.	NAME OF GOODS, TECHNICAL DESCRIPTION, SPECIFICATIONS, AND STANDARDS	Qty.
	Computer and suitable UPS with 3 years warranty, • Software with unlimited analysis only licenses	
66	**VI CELL COUNTER** • Analysis Time: < 2.5 min, • Capacity: Single or 12 position via autoloader, • Concentration Range: 5 x 10^4 to 1 x 10^7 cells/mL, • Counting Accuracy: ± 6%, • Depth: 41 cm (16 in, • Digitizing Resolution: 1394 x 1040, • Height: 44.5 cm (17.5 in), • Imaging Technology: Auto-focus CCD array, Firewire camera, • Instrument Type: Video image through a quartz flow cell, • Operating System: Windows, • Overall Analysis Range: Size Range: 2 µm - 70 µm, • Sample Volume: 0.5 mL, • Temperature: 10°C to 40°C (50°F to 104°F), • Viability Range: 0 to 100%	1 No.
67	**BIOANLYZER (ONE REQUIRED) WITH FLOW/ELECTROPHORESIS SET** • Bioanalyzer system for sizing, quantitation and quality control of DNA, RNA, proteins and cells on a single platform, providing high quality digital data., With two assay principles - electrophoresis and flow cytometry, Ready-to-use assays and pre-packaged reagent kits, • 1-4 µL sample consumption, Digital data for convenient analysis, archiving and storage, • Contamination-free switch of methods, • Investigation of nucleic acid samples,, • RNA integrity analysis,, • Analysis of labeled cRNA in microarray, • Illumina sequencing library quantitation	1 No.
68	**VORTEX** • Vortex mixer to operate when pressure is applied to the rubber cup which receives the vessel containing the materials to be mixed., • Variable speed control, to accept vessels up to 25mm diameter.	2 Nos.
69	**CLASS II BIOSAFETY CABINETS** Maximum operator, product and environment protection to fulfil the following requirement:, • Negative pressure plenum, • Divided table top, • Ergonomically correct front, • Trough made of stainless steel, • Transparent side of safety glass operated for 3 valves in both sides, • Hepa filter with efficiency of min. 99.999% against particles of 0.3µm, • Low noise level, • Light intensity > 1400 lux, • Slopping sash window of glass electric hoisting, • Electric outlets, placed at right and left sides, • Microprocessor controller with velocity indicator, • Visual and acoustic alarms warning if any safety parameters are incorrect, • Key switch, • Fitted with UV light sterilisation lamp, • 1 Gas valve, • Flock filter for fan protection, • Working surface 6’	1 No.

Item No.	NAME OF GOODS, TECHNICAL DESCRIPTION, SPECIFICATIONS, AND STANDARDS	Qty.
70	**CO_2 INCUBATORS (ONE)** • Approx. 150 Litres. Directly heated CO2 incubator with infrared CO2 detection system. , • Digital set-point and auto-zero-calibration. Acoustic and visual alarm indicators. "Out of limits" temperature cut-out system independent of microprocessor control. , • Acid-resistant stainless steel interior that facilitates easy cleaning is a requirement., • Temperature range: 3°C above ambient to 50°C, • Setting: 0.1°C Stability: ±0.1°C, • Uniformity: ±0.2°C (top to bottom), • Relative humidity: Reservoir 1.5L, 95% RH at 37°C, • CO2 range: 0-20%, • Setting: 0.1% Stability: ±0.2°C, • Uniformity: ±0.1% (top to bottom)	1 No.
71	**VARIABLE OXYGEN CONTROL CO2 INCUBATOR** • Approx. 150 Litres. Directly heated CO2 incubator with infrared CO2 detection system. ,• Digital set-point and auto-zero-calibration. Acoustic and visual alarm indicators. "Out of limits" temperature cut-out system independent of microprocessor control. , • Acid-resistant stainless steel interior that facilitates easy cleaning is a requirement., • Temperature range: 3°C above ambient to 50°C, • Setting: 0.1°C Stability: ±0.1°C, • Uniformity: ±0.2°C (top to bottom), • Relative humidity: Reservoir 1.5L, 95% RH at 37°C, • CO2 range: 0-20%, • Setting: 0.1% Stability: ±0.2°C, • Uniformity: ±0.1% (top to bottom), • With Oxygen Control Module from 0-20% and 5-90% with in-chamber HEPA filtration, automated high temperature decontamination	1 No.
72	**CO2 INCUBATOR WITH SHAKER** • Fanless design , • Sealed inner/outer doors and advanced PI control to maintain temperature accuracy and uniformity , while minimizing costly gas consumption, • High temperature disinfection , • InfraRed (IR) CO2 sensor for measurement and accurate control of CO2 levels, • 25 mm access port for adding instrumentation or additional probes, • USB port for communication and external instrument logging, • Removable stainless steel humidity pans, **Temperature:** • Range 4 ºC above ambient to 50 ºC, • Control ± 0.1°C, Stability ± 0.1°C at 37 °C, • Uniformity ± 0.25 ºC at 37 ºC (ambient temperature between 18 and 25 ºC)• CO2 0.2 to 20%, • Orbit 1 in (2.5 cm), • Shaking speed 25 - 400 rpm, • Dimensions : Platform 612 x 356 mm (24 x 14 in)	1 No.

GROUP 2

Item No.	NAME OF GOODS, TECHNICAL DESCRIPTION, SPECIFICATIONS, AND STANDARDS	Qty.
73	**MICE CAGE RACK** • Stainless Steel Welded Rack for 24 cages	1 No.
74	**MICE CAGES** • Polycarbonate Cage Body - mm 425x266x155 h • Stainless Steel Inner Fitting Lid with hinged divider • 500 ml Polycarbonate Water Bottle • Stainless Steel Cap - mm 25 extension - hole diameter mm 1,8	48 Nos.
75	**RAT CAGE RACK** • Stainless Steel Welded Rack for 20 cages	2 Nos.
76	**RAT CAGES** • Polycarbonate Cage Body – mm 480X375X210 H • Stainless Steel Inner fitting lid with hinged divider • Polycarbonate Water Bottle with silicon ring- ml 700 • Stainless Steel Bottle Cap - mm 25 nozzle - hole mm 1.8	40 Nos.
77	**GUINEA PIG CAGE RACK** • S/S Rack for 4 Cages mm - 860x790x1700 h	2 Nos.
78	**GUINEA PIG CAGES (UPTO 1 KG BODY WEIGHT)** • Noryle Autoclaveable Cage Perforated Body mm 743x543x250h 814x610x260h Cage Size • Noryle Waste Trays mm 749x549x40h 809x609x46h Tray Size • S/S Front Gate with Door without front sheet • S/S Feeder • 400ml Polycarbonate Bottle with Silicone Ring • S/S Bottle Cap with 2 balls • S/S Bottle Holder	8 Nos.
79	**RABBIT CAGE RACK** • S/S Rack for 6 Cages mm – 1550x840x1840h	10 Nos.
80	**RABBIT CAGES** • Noryle Shallow Cage Body mm 653x653x95h 716x716x114h Cage Size • Noryle Waste Trays mm 656x656x38h 716x716x46h Tray Size • S/S Feeder • Noryl Perforated raised Shelf left/right • 750ml Polycarbonate Bottle with Silicone Ring • S/S Bottle Cap 30◦ Bent with 2 balls • S/S Vertical Bottle Holder	30 Nos.

Item No.	NAME OF GOODS, TECHNICAL DESCRIPTION, SPECIFICATIONS, AND STANDARDS	Qty.
81	**WASHER FOR CAGES AND BOTTLES** • Reciprocating spray headers • Self-flushing debris strainer • Automatic temperature regulation • Pneumatically operated valves • Microprocessor control • Insulated exterior • Positive door Gasketing • Alkaline and acid injection ports and contacts • Automatic water level control • RS232 port for data acquisition • Programmable security access • Color touch screen for operator interface • Left or right hand configuration • Stainless steel heating coil • Low voltage intrinsically safe controls • Training on use of machine • 180^{o}F (82.22^{o}C) temperature guarantee • 80 plus liter capacity Construction: • All stainless steel construction • treatment pump • Stainless steel load grid • Stainless steel steam coil • Stainless steel thermocouple with direct PLC control and panel display • Electronic water level controls with removable probes • All electrical devices UL rated • NEMA rated operator controls • Stainless steel spray jets Accessories: • General purpose baskets for sipper tubes • Stainless steel transfer cart • Custom designed Racks	1 No.

GROUP 3

Item No.	NAME OF GOODS, TECHNICAL DESCRIPTION, SPECIFICATIONS, AND STANDARDS	Qty.
82	**MPVS-Ultra Foundation system for Pressure volume measurements:** **For in vivo measurements of over 30 cardiovascular parameters like left ventricular pressure, cardiac output, ejection fraction etc.** The MPVS-Ultra Foundation System is used in the measurement of pressure and volume in the hearts of small (ie. mice) through to large ie. (sheep) animals. The system should include, • 16 Channels, High speed data acquisition system • Recording speed (400,000 samples/sec • LabChart, Scope, LabChart Pro Modules software, • MPVS-Ultra PV Unit (MPVS Hardware, power and USB cables, Ultra control software, Training CD), • Rho Cuvette Kit for volume calibration, • Cable packs (BNC-BNC cables) • PVAN Ultra software. • Pressure volume catheter:This Polyimide Mikro-Tip pressure-volume catheter for normal/large rats has a 12.5 cm effective length with a pressure sensor (2F) and four electrodes (electrode spacing 9.0 mm). The pressure sensor is centered between E2 & E3. Catheter body is 1.1F. • BP Transducer/Cable kit • Tubing - PE Catheter (0.5 mm ID, 0.9 mm OD, 30m) • Latest Computer and Laser printer • Cardiac Output Pod with T-type Ultra Fast Thermocouple Probe and Cardiac Output Module (Win only). • The Cardiac Output Accessory Kit containing a glass syringe (250 µl) and repeater dispenser, PE tubing with needle hubs (suitable for mice, rats, guinea pigs, rabbits), three-way taps (x4) and TouhyBorst adapters (x2).	1 No.
83.	**Small Animal ventilator** • Positive pressure pumpsaccording to Starling's method. • These ventilators can beused with mice, rats, guinea pigs, small birds. • Precisely regulated motor speed regulated by an electronic feedback-controlled • drive, thus providing the most accurate and reliable stroke • rate control of any respirator available. • Negligible electronic noise and physical noise • Circuit for synchronized START / STOP, when need to stop the ventilator mid-stroke. • Standard piston is 10 ml, but 1, 5, • and 30 ml pistons must be quoted as options. • *Piston Driven *Versatile *Multiple Piston / Cylinder AssembliesCan be added in future.	1 No.
84.	**Non Invasive Blood pressure system For rats and mice, complete with data**	1 No.

Item No.	NAME OF GOODS, TECHNICAL DESCRIPTION, SPECIFICATIONS, AND STANDARDS	Qty.

	acquisition system and computer:
	• 2-Channel computerized data recording system
	• Computer and printer
	• NIBP Controller for non-invasive method for intermittent blood pressure measurement from the rat tail (diameter <10 mm).
	• NIBP tail cuff with transducer for rats
	• NIBP tail cuff with transducer for mice
	• Restrainers for various sizes
	  • 1x Rodent Restrainer (up to 35 g)
	  • 1x Rodent Restrainer (up to 50 g)
	  • 1x Rodent Restrainer (80-200g)
	  • 1x Rodent Restrainer (180-320 g)
	  • 1x Rodent Restrainer (300-440 g)
	  • 1x Rodent Restrainer (440-550 g)
	  • 1x Rodent Tail Cuff Holder	

85.	**Working Heart System for Rats and Rabbits** For in vitro measurement of cardiovascular parameters like, left ventricular pressure, perfusion pressure, heart rate etc. **:**A complete Working Heart System for isolated rats and rabbit hearts should include, • High Speed 8 Channel computerized data recording system • LabChart, Scope, LabChart Pro Modules software, • Bridge Amps (x2), • Physiological Pressure Transducers (x2), • T-type Pod, • T-type Implantable Thermocouple Probe, • Animal Bio Amp, Spring Clip Electrodes, • Front-End Extension Cable Kit, Transducer brackets, • Working Heart Apparatus for Rabbits, • Thermo Bath/Circulator & Peristaltic Pump. • Computer and printer	1 No.
86.	**For Animal Respiratory measurements:** • Spirometer Amplifier • Respiratory Flow Head 10 L • Respiratory Flow Head 1 L	1 No.
87.	**In vitro biological assay system.** For testing new drugs on different isolated tissue like, trachea, atrium, blood vessels, intestine, uterus etc. to check if the toxin has effects other than on cardiovascular system. The system should include: 8-Chanel High Speed data recording system 32-Chanel recording and analyses software Scope software and LabChart Pro Modules software, Bridge Amp,	1 No.

Item No.	NAME OF GOODS, TECHNICAL DESCRIPTION, SPECIFICATIONS, AND STANDARDS	Qty.
	Force Transducers (1), Single Tissue-Organ Bath (25ml) assembly upgradeable complete with glass bath, tubing, micropositioners etc. Thermo Bath/Circulator (220V).	
88.	**Nerve and Muscle Kit II:** The Kit should include • Bridge Pod, • Force Transducer (500 g), • Animal Nerve Stimulating Electrode, • Nerve Chamber (Stimulator Cable, two Differential Pod Input Cables), • Shielded Lead Wires (Alligator), • Muscle Holder and • Manipulator with Stand.	1 No.
89.	**For motor coordination** **Accelerating Rota-Rod for 4 rats or 4 mice** Should include, removable hood and SeDaCom Software The RotaRod provides an easy way to test the effects of drugs, brain damage, or diseases on motor coordination or fatigue resistance in rodents. Volts: 220 V Must come with all accessories.	1 No.
90.	**For memory testing** The Tail Suspension Test instrument. The Tail Suspension Test instrument includes unique features such as the randomization process of the animals, the measurement of up to 6 animals in the same run, the direct computations of the "Immobility", the "ENERGY" and the "Power in Motion". Settings should available to adjust the definitions to user's protocol. The energy value is a unique way to differentiate between passive swinging and active struggling. The system includes The suspension cages (3 mice per cage) and a user-friendly software to run, record, analyze and replay the experiments. The results areeither printed or stored in .txt or.xls fi les formats. Set of 3 boxes, including transducers and electronic elements Material Composition Black and white perpex, metal hook Computer Requirements Windows XP, Windows 7 (32 bist), 2 USB slots,Maximum number of stations 6 per computer Power Supply Standard 220 Volts 60 Hz.	1 No.
91.	**Vitalograph Compact** Full Size Color Touch Screen . Autocalveable Flow Head	4 Nos.

Item No.	NAME OF GOODS, TECHNICAL DESCRIPTION, SPECIFICATIONS, AND STANDARDS	Qty.
	Flow Detection by Fleisch type pneumotachograph Back Pressure is Less than 0.1kPa/L/second @ 14L/s, complies with ATS/ERS 2005 USB x 4, Serial x 2, Ethernet x2, DVI Ports is included Over 50 Test Parameters Scalable volume/time & flow/volume curves using single-breath or multi-breath spirometry Automatic and scalable FEV_1 trend chart view as subject is selected prior to testing, designed to reflect the trend of FEV_1 over the lifetime of the subject Choice of child incentives with sound effects and transparency so that real-time curves are simultaneously viewable Pre-post Spirometry comparison for bronchodilator or longer-acting treatments User selection from a choice of over 50 test parameters Country of origin: UK,Ireland,	
92.	**Student Heart Perfusion system:** The kit designed for education, allows student laboratories to measure isometric force on simple isolated perfused heart (rat, guinea-pig or rabbit) studies. It includes a Radnoti Student Heart System (220V), a Teaching Force Transducer (0-50g) and Manipulator. Features include water-jacketed glass apparatus includes a 100 mL heart chamber with pulley wheel option for force measurement, 10 mL heat exchanger with a 5 mL bubble trap, temperature control unit and reservoir. In addition there is a dual pump (220V) for the perfusate and heated water, ring clamps and stands.	2 Nos.
93.	**Health Science Teaching Bundle:** Health Science Teaching System provides the hardware for students to perform patients case studies. The system includes the Data recording system, Pulse Transducer, Respiratory Belt Transducer, Sphygmomanometer with 3 Cuffs, Bio Amp Cable, Shielded Lead Wires, Stimulating Bar Electrode, eadphones, Cardio Microphone, Disposable ECG Electrodes (100), Dry Earth Strap, Grip Force Transducer, Tendon Hammer, One-Way Mouth Pieces (100), Skin Temperature Probe (2 m), Thermistor Pod, Abrasive Gel, and Alcohol Swabs (1000) and Human Respiratory Kit. LabTutor Teaching Experiments: A revolution in teaching laboratory software, with data acquisition, experimental manual and report booklet in a single software interface. •Each LabTutor experiment includes background information, setup guides and student experimental protocols. •Real physiological data collection and experimentation performed using LabTutor panel. •Analysis and reporting sections are all contained within the LabTutor program •Provides a single-point management interface for educators on the number of courses, student data and reports via a single networked	2 Nos.
94.	**Wirless EMG System for Humans** 8 Channel Trigno EMG Wireless System is designed for wireless streaming of 8 human EMG signals to a Data recorder 8 Channel (supplied). It includes LabChart Pro software, a Trigno Base Station (Receiver), 8x Trigno EMG & XYZ Sensors (XYZ signals are not used), 2x Trigno Sensor Adhesive (80 pk), Trigno Power Supply	1 No.

Item No.	NAME OF GOODS, TECHNICAL DESCRIPTION, SPECIFICATIONS, AND STANDARDS	Qty.
	with Plug Adapter Kit, Trigno User s Guide and EMGworks software. The Trigno EMG 1-16 Adaptor (1m) and Interface Cable (DB15 to 8 BNC, 0.5m) are also included to connect the Trigno Base Station to the Data acquisition.	
95.	**Hotplate analgesiometer** Hot-Plate, a thick aluminum plate (10 mm) provides a high temperature stability and even surface distribution. The plate temperature can be held at a set point between 45 and 62°C by multiple proportional feedback circuits that minimize overshoot. The design of the hot-plate hinders the animal access to the external zone of the circular plate which temperature suffers the influence of the ambient temperature of the room. A built-in timer activated by an external foot switch allows precise measurement of reaction time (0.1 sec precision). A remote foot-switch controls the test start/stop allowing rapid hands-free experiments. Base Dimensions 200 (W) x 300 (D) x 110 (H) mm Plate Dimensions 200 (D) mm Cylinder Dimensions 200 (D) x 250 (H) mm Operating Temperature 45 to 62 degrees Celsius; 0,1 steps Reaction time 3 digits, 0,01 sec. increment Material Composition Clear methacrylate (animal holder), aluminum (plate) Maximum number of stations 1 per computer (multiple set-ups also available under request) Power Requirements 110V or 220V, 50/60Hz Certifications CE Compliant	2 Nos.
96.	**Plethysmometer** The Digital Water Plethysmometer is designed to provide a highly useful tool in the measurement of small volume changes. This test is typically used to follow the evolution of the inflammatory response experimentally induced in rodents and to screen potential anti-inflammatory or anti-oedema properties of pharmacological substances. Application: Anti-inflammatory drug screening, Anti-oedema drug screening, Inflammation, Post-operative pain"Check solution" status button • Conductive solution is easy/cheap to prepare/source • Automatic zero adjustment • Foot switch control • Includes a volume transducer calibratorand tampon solution •optional Data Transfer software SeDaCom 2.0 (RS232/USB communication SPECIFICATIONS Control Unit Dimensions 28 (W) x 28 (D) x 11 (H) cm Resolution 0.01 s steps Stimulation Unit Dimensions 23 (W) x 22 (D) x 30 (H) cm Material Composition Clear methacrylate (cell), stainless steel (stand), platinum (electrode)	1 No.

Item No.	NAME OF GOODS, TECHNICAL DESCRIPTION, SPECIFICATIONS, AND STANDARDS	Qty.
	Starting By panel key or pedal switch Power Requirements 220V, 50/60Hz CELL/ELECTRODE SYSTEM & CALIBRATOR 1 ml cell with electrode and 1 ml calibrator	
97.	**Homeothermic Controller and Plate (220V, for mice):** The Homeothermic Controller and Plate provides temperature feedback control for controlling small animal (mouse) temperature through a heating plate. Power Supply = 220V AC. Accuracy: ± 0.5°C, Resolution: ±0.1°C, Range:-100 to +400°C, Heating Plate size: 111 mm x 217 mm. The system includes the controller, heating plate and Mouse Rectal Probe.	2 Nos.
98.	**Homeothermic Controller and Plate (220V, for rats):** The Homeothermic Controller and Plate provides temperature feedback control for controlling small animal (rats) temperature through a heating plate. Power Supply = 220V AC. Accuracy: ± 0.5°C, Resolution: ±0.1°C, Range:-100 to +400°C, Heating Plate size: 111 mm x 217 mm. The system includes the controller, heating plate, and Rat Rectal Probe for use with rats or guinea pigs.	2 Nos.
99.	**Metabolic Cage for Rats 150-300 grams Metabolic cages** (for urine and feces output) A poly carbonate or polystyrene cage for rats with system of separating urine and feces in different collector bottles. A possibility of evaluating feeding and drinking behavior is preferable.	6 Nos.
100.	**Metabolic Cage for MICE Metabolic cages** (for urine and feces output) A poly carbonate or polystyrene cage for mice with system of separating urine and feces in different collector bottles. A possibility of evaluating feeding and drinking behavior is preferable.	6 Nos.
101.	**Pyrogen testing setup** with software and 15 Probes expandable upto 90 Probes. The system is to be used to perform pyrogen tests according to US, British or European pharmacopeia. TEMPERCO is a complete system based on carefully developed software and hardware for PC or compatible computers. It is a powerful low cost tool that carries out the Pyrogen test according to several Pharmacopoeias with up to 90 animals simultaneously. Parameters Measured Registery of initial and test temperature Graphic form of the initial and test temperatures for user-defined probes or groups Temperature increase calculated depending on the Pharmacopeia chosen Group Status at the end of the inoculation process (Free, Contamined or To be repeated) Automatic temperature readings GLP compliance software module Available Pharmacopoeias (editable): CFR21, USP24, Chinese, Korean, European Automatic dose estimation according to individual weight Specifications • Computer requirements 1.5 GHz Processor, 256 MB of RAM. 1 USB and 1 Serial port available	1 No.

Item No.	NAME OF GOODS, TECHNICAL DESCRIPTION, SPECIFICATIONS, AND STANDARDS	Qty.
	• System requirements Windows™ XP compatible operating system • PROBOX15 Scanner for 15 probes • TEMPERCO Pyrogen Test Software • Temperature probe for rabbits (4,2 mm) • 15 Temperature probes for rabbits • TEMPERCOGLP GLP compliance software	
102.	**TAIL FLICK UNIT.** a radiant heat is applied on the tail; when the animal feels discomfort, it reacts by a sudden tail's movement (tail flick) which automatically stops the stimulation and the timer for the measurement of the animal reaction time (period from the beginning of the stimulation until detection of the animal's response).Control Unit Dimensions 350 (W) x 350 (D) x 130 (H) Stimulation Unit Dimensions 400 (W) x 140 (D) x 155 (H) Power Supply 110V/220V, 50/60Hz Material Composition Methacrylate, halogen lamp Computer Requirements PC (Windows 95, 98, ME, NT, 2000 and XP) Maximum number of stations 1 per computer .	2 Nos.
103.	**Bio-Assay System complete data recording system.** The system is designed to perform at least following experiments for undergraduate and postgraduate pharmacognsy experiments on new and old compounds isolated from plants and animals sources. • Dose response curves • Receptor differentiation • Agonist and antagonist interaction • Exploring mode of action of known and unknown drugs • Effects of drugs on isolated ileum, jejunum, aorta, atria, uterus, stomach fundus from laboratory animals like, rats, rabbits, guinea pigs etc. The system should be complete with hardware, software, experimental protocols, handouts, and all accessories. It should include at least following components. **Single Chamber Organ Bath with a 25 mL tissue bath**. Steel base 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 with Micropositioner and Isometric transducer 0-50gm with built in amplifier, 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. **Along with data acquisition Teaching System** with a dual Bio Amp, an isolated stimulator, two Inputs (DIN) and two independent analog outputs (non-isolated). withLabTutor software. Includes a Pulse Transducer, Stimulating Bar Electrode, Shielded Bio Amp Cable and Shielded Lead Wires. Bio Amp and Isolated Stimulator are certified safe for human connection, BF rated). **Force transducer with built-in amplifier:** The MLTF050/ST Force Transducer is strain force gauge based force transducer,	1 No.

Item No.	NAME OF GOODS, TECHNICAL DESCRIPTION, SPECIFICATIONS, AND STANDARDS	Qty.
	suitable for measuring muscle contractions or similar forces such as in isolated tissue-organ bath experiments in teaching applications. It can be used to measure isometric forces from 0 to 50 g. The transducer operates such that when force is applied to the transducer, it causes the strain-gauge elements to change resistance, and hence produce a change in signal voltage. The transducer connects directly to a DIN input of Data Acquisition or Pod expander. It is recognized in LabChart v7 or later. The support rod (diameter 6 mm, length 96 mm) of the transducer can be easily switched around to suit different mounting orientation of different micropositioners. **6L Digital Precise Circulation Water Bath** 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 CE certified. It has a stainless steel bath and lid for superior durability, high thermal efficiency, prevents evaporation and keeps constant temperature. **Accessory Kit** It includes a "L" glass tissue hook stainless steel 0.015 wire, 20 mm x 20 mm upper ring support 0.15 stainless steel 0.015 wire, Universal stand clamp for glass hook.	
104.	**Computerized EMG and NCV Machine with all accessories.** **The system should be capable of recording following protocols** Electromyography (EMG): Motor Unit Potential (MUP) Interference phase (IP) Scanning EMG Evoked potential (EP): Somatosensory Evoked Potential (SEP): USEP; LESEP; TSEP; SCEP Acoustic evoked potential (AEP) BAEP, MAEP, LAEP, EcochG (Electro-oculogram), 40Hz Visual evoked potential (VEP) PRVEP, FVEP, ERG, EOG Nerve Conductive Studies (NCV) Motor NCV (MCV) Sensory NCV (SCV) Short segment conduction (SSCT) Repetitive nerve stimulation (RNS) F-wave H-reflex Blink Reflex (BR) Sympathetic Skin Response (SSR) Nerve Conductive Studies (NCV): Motor NCV (MCV) Sensory NCV (SCV) Short segment conduction (SSCT) Repetitive nerve stimulation (RNS) F-wave H-reflex Blink Reflex (BR)	1 No.

Item No.	NAME OF GOODS, TECHNICAL DESCRIPTION, SPECIFICATIONS, AND STANDARDS	Qty.
	Sympathetic Skin Response (SSR)	
105.	**Radnoti in vitro screening system (25 ml) single** channel, bridge amp, high grade isotonic transducer, force transducer, water bath circulator (22 L, 220 V), Accessories, 4 Channel data acquisition system, Radnoti 1583 Series tissue bath (5 ml), Radnoti 1583 series tissue (10 ml)	4 each
106.	**Microtome and its accessories** Apparatuses and accessories for routine histological work (Roto-Dry, Water Floatation Baths, Microtome Tray, Blades and Blade Removers, Chill Tray, Modular Storage System, Slide Storage, Undercounter Storage, Lab Refrigeration, Automatic Tissue processor and tissue embedding system Cryostat Chemicals for histological technique: Fixatives, staining dyes, staining markers, dissecting kits Immunochemical markers, diagnostic kits , culture media as and when required Immunohistochemistry kits as and when required Fluorescent microscope complete with accessories and photographic attachment	1 each
07	**ELECTRICAL SAFETY ANALYZER** 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. **TEST STANDARD SELECTIONS:** IEC 62353 AS 3551 ANSI/AAMI ES1IEC60601-1 **VOLTAGE:** Mains voltage: Range: 90 to 264 V rms Accuracy: ±(2 % of reading + 0.2 V) External (point-to-point) voltage: Range: 0 to 300 V rms Accuracy: ±(1 % FS + 0.2 V) External (point-to-point) micropotential: Ranges: 0 to 199.9 mV rms200 to 1,999 mV rms2000 to 19,999 mV rms Accuracy: ±(1 % of reading + 1 mV) **PROTECTIVE EARTH RESISTANCE:** Method: Four-terminal, fully isolated Test Current: 1A pulsed, 0.2A rms Range: 0.000 to 2.000 Ω Accuracy: ±(1 % of reading + 0.02 Ω) **INSULATION RESISTANCE:** Ranges: 0.5 to 5 MΩ5 to 50 MΩ50 to 999.9 MΩ	1 No.

Item No.	NAME OF GOODS, TECHNICAL DESCRIPTION, SPECIFICATIONS, AND STANDARDS	Qty.
	Range selection: Automatic **Accuracy:** 5 MΩ range ±(1 % of reading + 0.1 MΩ) 50 MΩ range ±(2 % of reading + 0.2 MΩ) 50 to 100 MΩ ±(5 % of reading + 0.2 MΩ) **Test Voltage:** Selections: 500 V or 250 V Accuracy: ±5% for 0 to 1 mA load Maximum Load Capacitance: 1 uF **EQUIPMENT CURRENT:** Ranges 0 to 1.999 A ac rms2.00 to 19.99 A ac rms Accuracy: ±(2 % reading + 0.2A) Duty cycle 0 A to 10 A, continuous 10 A to 15 A, 7 min. on/3 min. off 15A to 20 A, 5 min. on/5 min. off **EQUIPMENT POWER:** Range: 0 to 2400 watts Accuracy: ±(5 % reading + 5W) **EQUIPMENT AND PATIENT LEAKAGE TESTS:** Measurement: RMS Method: Direct method Patient Load: Per IEC 62353 Functional Group Selections: AP1; AP1 and AP2; AP3 and AP4; AP1 to AP3; AP1 to AP4; AP5 to AP10 AP1 to AP10 **CHASSIS AND LEAD LEAKAGE TESTS:** Measurement: AC+DC (True-rms) AC only DC only Patient Load Selection: AAMI ES1-1993 IEC 60601 **LEAKAGE CURRENT MEASUREMENT:** Crest factor: <=3 Ranges: 0.0 to 199.9 µA 200 to 1,999 µA 2000 to 19,999 µA Accuracy: DC to 1 kHz ±(1 % of reading + 1µA) 1 to 100 kHz ±(2 % of reading + 1µA) 100 kHz to 1 MHz ±(5 % of reading + 1µA) Isolation test voltage: 100 % ±5 % of AC supply **CALIBRATION TEST POINTS:** Resistance: 1 ± 0.01 Ω Current: 100 ± 1 µA	

Item No.	NAME OF GOODS, TECHNICAL DESCRIPTION, SPECIFICATIONS, AND STANDARDS	Qty.
	ECG PERFORMANCE WAVEFORMS: Output: Amplitude 1 mV QRS into Lead II Impedance 500 ohms Accuracy: Frequency ±1 % Amplitude ±2% Waveforms: ECG Complex 30, 60, 120, 180, 240 and 300 BPM Square wave 0.125 Hz, 2 Hz and 1 kHz Pulse wave 63 msec, 30PPM and 60PPM Triangle wave 2 Hz Sine wave 0.5, 10, 40, 50, 60 and 100 Hz CMRR tests SQR 2Hz & 1KHz, PUL 4s, SIN 0.5, 50 & 60Hz Arryhthmias VFIB, AFIB, SVT, VTACH, PVC, and ASYS	
108	**BODY PLETHYSMOGRAPH** The Body Box combines powerful software, advanced digital technology and flow sensor to provide unparalleled ease of operation, reliability and infection control solutions **for complete Pulmonary Function assessment.** Body Plethysmograph offers comfort, easy access and flexibletesting options for all patients, children through adults. **Standard Test** • Spirometry (FVC, SVC, MVV) • Thoracic Gas Volumes (TGV) • Airways Resistance (Raw) • Respiratory Mechanics (MIP/MEP) • DLco **Cabin Design** • Maximizes usable space for patient comfort while maintaining low total volume. • Small internal volume improves sensitivity and provides rapid equilibration. • Virtually no weight limit to accommodatelarger patients • Quiet, inflatable door seal with no mechanicallatches. **Easy Access for all Patients** • Complete spirometry, dilutional lung volumesand diffusing capacity can be performed outside the chamber. • Patient can easily be transferred from a wheelchair eliminating need for special ramps. **Software** • Easy to learn, “one button” testing. • Powerful Microsoft SQL database. • Report Designer. • Real-time help screens, • On screen alerts based on ATS/ERS criteria and standards, • Data management solutions include system connectivity, physician review station and electronic medical record interface.	1 No.

Item No.	NAME OF GOODS, TECHNICAL DESCRIPTION, SPECIFICATIONS, AND STANDARDS	Qty.
	Advanced Digital Electronics • ADC Module. • Automatic gas calibration. • On-board indicator lights. **Flow Sensor** • The flow sensor can be sterilized. • Easy to disinfect. • No warm-up or re-calibration between patients. • Meets or exceed current ATS/ERS standards and specifications.	
109	**DIGITAL COLOR PRINTER** Dysub -Print size maximum up to 8x12 inch. Printing roll size 8x2, 8x4, 8x8, 8x10 also cut automatically. Front loading.	6 Nos.

SPECIAL NOTE:

- **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.**
- **Equipment must be quoted with all the standard accessories.**
- **UPS/Power protection for the equipment shall be incorporated in the systems, otherwise prices must be quoted separately.**
- **All the civil works will be carried-out by the Dow University of Health Sciences, Karachi with the consultation of the responsive bidder.**
- **Responsive bidder will provide the consultancy regarding the installation of the Equipment according to the GMP / WHO Standards (if applicable).**
- **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.**
- **Bidder must be provided the User/Technical/Maintenance/Service manuals and Service Keys of the equipment.**
- **Specifications are guidelines for understanding the requirement of DUHS. Minor deviation shall be acceptable, if not compromise actual benefit of the equipment.**

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.

3. CONTRACT FORM

THIS AGREEMENT made the _____ day of _____ 2015 between *Dow University of Health Sciences, Karachi* of *Islamic Republic of Pakistan* (hereinafter called "the Procuring Agency") of the one part and ***[Name of Bidder]*** of ***[city and country of Bidder]*** (hereinafter called "the Bidder") of the other part:

WHEREAS the Procuring Agency invited bids for certain goods and ancillary services, viz., ***[brief description of goods and services]*** and has accepted a bid by the Bidder for the supply of those goods and services in the sum of ***[contract price in words and figures]*** (hereinafter called "the Contract Price").

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract referred to.

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

(a) the Bid Form and the Price Schedule submitted by the Bidder;
(b) the Schedule of Requirements;
(c) the Technical Specifications;
(d) the General Conditions of Contract;
(e) the Special Conditions of Contract; and
(f) the Procuring Agency's Notification of Award.

3. In consideration of the payments to be made by the Procuring Agency to the Bidder as hereinafter mentioned, the Bidder hereby covenants with the Procuring Agency to provide the goods and services and to remedy defects therein in conformity in all respects with the provisions of the Contract

4. The Procuring Agency hereby covenants to pay the Bidder in consideration of the provision of the goods and services and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the contract at the times and in the manner prescribed by the contract.

IN WITNESS whereof the parties hereto have caused this Agreement to be executed in accordance with their respective laws the day and year first above written.

_____	_____
Signed / Sealed by the Manufacturer / Agency Authorized Bidder / Authorized Agent	Signed / Sealed by Procuring

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	Quantity of Stores	Unit	Rate Per Unit	Total Price
1	2	3	4	5	6	7	8	9
Total Amount in Pak Rs.								

Name _____

In the capacity of _____

Signed _____

Duly authorized to sign the Bid for and on behalf of _____

Date _____

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	Quantity of Stores	Unit	Curr-ency	Rate Per Unit	Total Price
1	2	3	4	5	6	7	8	9	10
Total Amount in Foreign Currency									

Name _____

In the capacity of _____

Signed _____

Duly authorized to sign the Bid for and on behalf of _____

Date _____