

TENDER DOCUMENT TENDER REFERENCE #: 0947/02/SCEE/ LAB EQPT/ NBC/PH-II-3rd RETENDER- SEP 2023 PROCUREMENT OF LAB EQUIPMENT FOR NUST BALOCHISTAN CAMPUS (NBC) QUETTA

NATIONAL UNIVERSITY OF SCIENCES & TECHNOLOGY (NUST), H-12 CAMPUS ISB SCHOOL OF CIVIL & ENVIRONMENTAL ENGINEERING (SCEE)

Part-1 – Tender Procedures/ Documentation

1. <u>General Instructions for Bidders</u>. These directions are provided to assist the bidder in preparing and submitting his/her tender. The tender shall contain all information and data required to be furnished and shall be prepared and submitted in accordance with the instructions set forth herein.

a. Eligible Bidders

- (1) This Invitation for Bids is open to all authorized well-established suppliers, OEMs or distributors having NTN / Sales Tax registration with active ATL Status in FBR record with modern facilities for supply and delivery of "Lab Equipment".
- (2) 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.
- b. <u>Equipment Specification</u>. Specifications/ Quantities of equipment are given in **Annex A**.

c. Singe Stage Two Envelopes Bidding Procedure

- (1) The bid shall be single package consisting of two separate envelopes, containing separately the technical and financial proposals.
- (2) The envelopes shall be marked as "Technical Proposal" and "Financial Proposal".
- (3) First sealed envelope having technical offer marked as "**Technical Bid**" prepared/ submitted as under: -
 - (a) To be submitted as per the format given at **Annex C** separately for the following labs: -.

Ser	Equipment	Lot Number
(1)	Hydraulics Lab	I
(2)	Geotechnical Lab	II
(3)	Transportation Lab	III
(4)	Public Health Engineering Lab	IV

- (b) Should be complete in all respect with relevant technical literature as indicated in **Annex-H**
- (c) All items to be quoted with a minimum 01-year warranty and 10 years after sale service covering supply of spare parts, as required and for upgrade period for the equipment.
- (d) The equipment manufactured by assembling parts manufactured by different OEMs would not be accepted due to potential compatibility issues at a later stage.

- (e) Essential accessories shown as separate/ optional items missing essential accessories would be considered nonconformity of the terms and conditions of the tender.
- (f) Bids shall be rejected if the required detail of specifications, brand, origin, make, model, warranty, after sale support period etc are not clearly quoted / mentioned. No margin shall be given on this account.
- (4) Second sealed envelope having financial quotes is to be marked as "Financial Bid" and prepared / submitted as under:-
 - (a) Must be submitted as per format attached as **Annex-B** on company/ firm's letterhead duly signed by authorized person.
 - (b) FOR basis Quotations including all taxes should be given and only that equipment should be quoted which fully meets the required specifications.
 - (c) Financial quotations must indicate rates of each item separately including all applicable taxes i.e. with GST etc.
 - (d) Any exemptions in taxes by the federal government (where applicable) must also be indicated.
 - (e) The rate of each equipment (PKR) including its essential accessories must be included in total price quoted for the equipment.
 - (f) Any additional/ alternate options NOT meeting technical specifications will not be entertained.
 - (g) Firms must submit earnest money (refundable) equal to 2% of total quoted value with the financial bid in the form of pay order / bank draft in favor of SCEE, NUST Islamabad.
 - (h) Bidders are to provide quotes with validity of at least **90 days** extendable up to 120 days.
 - (i) Bids shall be rejected if rate(s) are incomplete, unclear, conditional, altered, or ambiguous.
- (5) Both envelopes to be placed in a 3rd sealed envelope bearing firm's postal / email address and phone numbers etc. and marked as "Procurement of Lab Equipment NBC Quetta NUST Tender Reference # 0947/02/SCEE/ LabEqpt/ NBC/PH-II-3rd Retender Sep 2023 and to be addressed to: President Local Purchase Committee, SCEE, NUST, Sector H-12 Islamabad.

2. Tender Opening and Evaluation

- a. In the first instance, the Technical Proposal will be opened, and the envelope marked as "Financial Proposal" shall be retained unopened in the custody by the procuring agency.
- b. Technical Quotations will be opened, in the presence of representatives of the firms if they desire so and members of SCEE, NUST equipment purchase / evaluation committee at SCEE.
- c. The bid opening may be postponed under unforeseen circumstances. However, in such a case, SCEE, NUST will notify all the bidders well in time and communicate next date and time.
- d. The Technical Proposal shall be evaluated as enunciated in Evaluation Criteria
 (Annex H) of this bidding document.
- e. After evaluation/ approval of the Technical Proposals, Financial Proposals of the technically accepted bids shall be opened at a time, date and venue announced and communicated to the bidders in advance within the bid validity period.
- 3. Only one representative from each bidder would be allowed to witness the opening of tenders, without conferring any privileges/rights. No mobiles phones / recorders would be allowed inside the bid-opening room.
- 4. Submission of bids through email / fax is not admissible.
- 5. Bid can be withdrawn before the bid opening date by a firm with in three working days of its submission.
- 6. The supplied items must have service and operations manuals and operating software (where applicable) for all quoted items.
- 7. Late submissions would not be entertained.
- 8. The bidder will not be reimbursed for any costs of any kind, whatsoever, incurred in connection with the preparation and submission of this tender.

9. Cancellation and Retendering

- a. If the participants are less than three against a Tender, SCEE has the right to reject the bids and proceed for re-tendering. In this case commercial bid(s) will not be opened and returned to the bidder(s).
- b. Tender Notice is only an invitation to offer quotations / bids. The competent authority may reject all quotations / bids or cancel the Tender as per rules laid down by PPRA.
- c. NUST reserves the right to accept or reject any or all the bids as per PPRA Rule 33(1)

- d. NUST (SCEE) reserves the right to reject partial and any type of conditional quotes.
- 10. <u>Source and Nationality Compliance</u>. The cooperating country for this procurement is Pakistan. The firms must not quote or supply any commodities or services that are manufactured or assembled in, shipped from, transported through, or otherwise involving Burma (Myanmar), Cuba, Iran, North Korea, (North) Sudan, Syria. (Refer **Annex-E**)
- 11. <u>Grievances</u>. Grievances (if any) by any vendor may be sent / addressed to Dy Director Administration, SCEE NUST within 10 days after results announcement. In case of dispute, the decision of Pro-Rector / Rector-NUST shall be final and binding on both the parties.
- 12. <u>Pre-bid Clarifications</u>. Technical queries from any vendor, a pre-bid meeting may be arranged by SCEE, NUST one week before tender submission/opening. Firms are advised to forward the written request for said meeting (if required).
- 13. **Queries (if any)**. Firms may contact on SCEE Email ddadm.coord@scee.nust.edu.pk or at telephone number 051-90854007, 051-90854035. The subject of the email should include the PPRA tender reference number for intended action and reply.

Part-II Contracting

14. **General Conditions of Contract**

- a. Contract Agreement shall be signed with the successful bidder(s), as per NUST policy. The provision of stamp paper (Rs 100/-) shall be the responsibility of the firm which shall be delivered to SCEE for award of contract within 3 days of issuance of Purchase Order.
- b. Selected firm(s) shall provide "Performance Guarantee (PG)" equal to 10% to be retained for one year.
- c. NUST reserves the Right to purchase at risk-and-expense of Supplier, if the selected supplier, fails to complete the order, or delays to supply within the quoted delivery time or extended time given by SCEE, does not fulfill the requirements. Substandard / low quality items and may resort to the following: -
 - (1) Purchase single, all or unsupplied quantity of item(s) as the case may be on supplier's Risk and Expense.
 - (2) Forfeit Performance Guarantee / Earnest Money.
 - (3) Initiate administrative action as per rules.
 - (4) In case of non-acceptance of purchase order, the firm may get blacklisted in SCEE/ all NUST departments.
- d. Supplier shall be responsible for the clearance and transportation of samples or the bulk up to / within NUST premises. Provisioning of loading/un-loading labor would be the responsibility of the supplier.

- e. Subletting the bid will disqualify the successful vendor.
- f. The INTEGRITY Pact envisaged in PPRA rules will apply.
- g. Firms will have to arrange demo or display of equipment (if possible) on request from SCEE NUST technical team.
- h. The supplier will have to deliver the equipment at NBC Quetta, NUST at his own expense.

15. **Delivery Period**

- a. The delivery time should not be more than 6 to 8 weeks.
- b. Installation, testing, integration, and commissioning time if applicable shall not be more than 1 week. (Relaxation may be granted as per merit of the case).
- 16. **Penalty & Late Delivery**. In the event of any delay in delivery, the firm shall inform SCEE before expiry of such period giving reasons / justification for the delay. However, SCEE-NUST reserves the right to take following actions:
 - a. Evaluate the request for extension in delivery period as per its merit and may consider extension in delivery period or otherwise.
 - b. In case of late delivery for the reasons well within control of the firm, LD charges at the rate of 1% per week but not exceeding 10% of the total value of the undelivered stores / items may be levied.
 - c. SCEE NUST may cancel the contract and partial deliveries in such case will be forfeited.
 - d. The decision by SCEE-NUST under this clause shall not be subject to arbitration.

17. Inspection/ Testing

- a. NUST Inspection Committee / Faculty will inspect and test the supplied tools/equipment/items as per specifications and accessories list after arrival at our premises.
- b. All tests if applicable would be conducted in the presence of NBC technical team and test reports, would be signed by both the parties, and submitted to SCEE procurement office.
- 18. <u>Terms of Payment</u>. No advance payments would be made. However, following payment terms and conditions will be applicable:
 - a. 90% amount will be released through crossed cheque after delivery of equipment, verification by the respective committee and successful inspection, installation & commissioning of the equipment with successful demonstration of complete operations duly confirmed by NBC technical team. The remaining 10% will be released on completion of one-year warranty period.

- b. In other cases, after successful delivery, inspection, installation/commissioning with successful demonstration of complete operations, a certificate shall be signed by End User and submitted to SCEE LP Section for submission to Accounts Office for release of payment.
- c. Payments will be made after deduction of income tax (withholding tax) and sales tax as per rules (wherever applicable). Any new tax/revised tax by GOP shall also be applicable.
- d. Payments shall be stopped if Firm's "Taxpayer Status" is found missing on FBR's active taxpayers list. It shall remain stopped till firm status appears back on FBR website as active taxpayers.
- 19. <u>Warranty</u>. Standard warranty service and repair within the cooperating country is required for all items under this procurement. The warranty coverage must be valid on all items for a minimum of one years and 10 years after sale service after their successful supply, installation, and commissioning.

20. After Sale Service

- a. Supplier will guarantee the availability and the supply of Essential Maintenance Spares required to keep the equipment operational for a period of Ten (10) years from the date of inspection & commissioning of equipment.
- b. The firm would provide details of any improvements / modifications in the supplied equipment during warranty period / currency of the contract if carried out by the OEM.
- c. All Manuals and Documents shall be provided with the equipment.
- 21. Change of Quantity/ Ordered Quantity. SCEE, NUST reserves the right to:
 - a. Change the required quantity, time etc while placing purchase order or decrease currency of contract.
 - b. Reject any or all bids as per "PPRA" rules.
 - c. Make / seek clarification at any time as per rules.
- 22. **Repeat Order**. If required, SCEE, NUST may place a repeat order (at previous rates and conditions) for the supply of contracted item(s), during a period of six (06) months after the issue of purchase order/ contract amounting not more than 15% of the total value of the contract on the same Terms and Condition.
- 23. <u>Packing & Transportation</u>. All Equipment shall be individually packed in standard packing provided by the manufacturer for onwards transportation and delivery. Any item damaged during transportation will be replaced by the bidders at their cost including freight and insurance charges.
- 24. <u>Default</u>. If the firm fails to effect or keep in force any of the insurances referred to in the contract or fails to provide satisfactory work, NUST may, without prejudice to any other

right or remedy, terminate the Purchase Order and cancel contractor rights or remedy to recover the amount paid in advance (if any). If the vendor fails to deliver items/ services as per approved samples and specifications, NUST reserve the right to terminate the contract.

- 25. <u>Technical User Manual/ Publication</u>. Successful vendor(s) will be bound to provide subject material to SCEE at the time of delivery.
- 26. <u>Tool Kits/ Accessories / Operations & Maintenance Manuals</u>. Standard sets of General Tool kit / accessories/ Operations and Maintenance manuals of the equipment shall be supplied by the firm along with equipment within the quoted price.
- 27. <u>Arbitration</u>. In case of any dispute, case shall be reviewed by "NUST Complaint Committee" and the decision of Pro-Rector Academics / Rector NUST shall be final and binding on both the parties without recourse to legal action.
- 28. **Force Majeure**. The Supplier shall not be held liable in the event of their failure to comply with the delivery schedule of the ordered items(s) for reasons of Force Majeure including but not limited to: war and other instabilities invasion, act of foreign enemies, mobilization or embargo, civil war etc.
- 29. <u>Insurance /Shipment Clearing & Local Transportation Charges</u>. Insurance, shipment clearing, and local transportation will be done by the supplier and all financial charges will be paid by supplier/firm.

SPECIFICATIONS/QUANTITY OF EQUIPMENT

Lot I HYDRAULIC LAB

Ser	Item Name with Technical Specification	Standard Accessories with Each Equipment	Qty	Country of Origin
1.	Apparatus Name: FLOW CHANNEL AND FLUME (with accessories) Overall Dimensions: Length 5 to 6 m Width 0.5 to 0.7 m Height 1.3 to 1.5 m Channel Dimensions: Width not less than 75 mm & height not less than 250 mm Channel slope: Adjustable between -1% and +3% Testing: Study the behavior of flow in open channel using different instruments for discharge measurement in open channel using devices: Broad crested weirs (round corner and sharp edges), Sluice Gate, WSC Flume, Partial Flume, Venturi Flume, Determination of Roughness coefficient using corrugated and gravel bed	Models and gauges to be supplied should be compatible with the apparatus: - • Venturi Flume • Sharp and Broad Crested Weirs • Crump Weir • Adjustable Undershot Weir • Two Vernier level gauges (Hook and point gauges) Along with following Compatible Models: - Pitot tube and manometer Culvert fitting, one edge square, one rounded Flow splitters; central wall with various nose pieces Free overflow spillway section completes with ski jump, sloping apron and blended reverse curvature attachments. Syphon spillway and air regulated syphon Model radial gate, Wave generator and wave absorbing beach False floor sections for gradually varied profiles Artificially roughened bed at least half the length of the channel.	01	Western Europe / North America / Japan
3.	Apparatus Name: PIPES SURGE AND HAMMER APPARATUS (along with software) Overall dimensions: Height: 1.5 to 2.5 m Length: 4 to 5 m Depth: 1 to 1.5 m Test pipes: Stainless steel, approximately 20 mm inside diameter, Surge shaft Clear acrylic, inside diameter approximately 40 mm and at least 800 mm high. Head tank: PVC, capacity 40 -50 litres Testing: Demonstration of graphical representation of water hammering phenomenon using oscilloscope Apparatus Name: PLUNGER PUMP DEMONSTRATION UNIT (along with software) Technical Details: Flow rate not less than 0.725 l/m Head not less than 4 bar Swept volume: 15mm stroke x 32mm diameter Pumping speed: 0 to 60 strokes/min Motor power rating: 240 to 260 W	1 x Oscilloscope Software	01	Western Europe/ North America / Japan Western Europe/ North America / Japan

Pressure Sensor: 9 to 16mm Motor Torque range: 0 to 2.5Nm Overall Dimensions Height: Not less than 0.8m Depth: Not less than 0.9m Diamater of test pipe: Not less than 0.0m Length: 10 1.2m Leng					
Motor Torque range: 0 to 2.5Nm Overall Dimensions Height: Not less than 0.41m Width: Not less than 0.88m Depth: Not less than 0.51m Testing: Measurement during each pump cycle of: - Plunger displacement - Cylinder pressure On-line p-V diagram displays Measurement of volumetric efficiency Measuring the effect on pump performance of: - Sprung loading valve or needle valve - Adjusting the outlet loading valve - The inclusion of a pulsation damper vessel 4. Apparatus Name: BASIC HYDRAULIC BENCH Technical Details: Pump: submersible Water head not less than 1.30 litres/sec Min. Sump tank capacity: 250 litres Height flow volumetric tank not less than 6 litres Low flow volumetric tank not less than 6 litres Height of vorking surface: 1 to 1.5 Metre above floor level Overall dimensions Length: 10 1.5 m Wetth: 0.5 to 0.75 m Height: 1 to 1.5 m Wetth: 10 1.5 m Wetth: 0.5 to 0.75 m Height: 1 to 1.5 m Wetth: 0.5 to 0.75 m Range of mercury manometer: Not less less than 300mm Range of mercury manometer: Not less than 3.0 mm Length of test pipe: Not less than 760 mm Range of mercury manometer: Not less less than 300mm Range of mercury manometer: Not less than 500 Measuring cylinder capacity: Not less than 1.00 m Overall Dimensions Length: 0.8 m - 0.9 m Width: 0.3 m - 0.35 m Height: 0.45 m - 0.55 m Testing: Demonstrating basic phenomena associated with open channel flow Visualization of flow patterns over or around an immersed object ACCESSORIES Overall Dimensions Length: Not less than 1.60m Width Not less than 1.60m		Pressure Sensor: 0 to 100psi			
Overall Dimensions Height: Not less than 0.41m Width: Not less than 0.51m Testing: Measurement during each pump cycle of: - Plunger displacement - Oylinder pressure - Pump outlet pressure - On-line P-V diagram displays Measurement during deach pump cycle of: - Plunger displacement - Oylinder pressure - Pump outlet pressure - On-line P-V diagram displays Measurement of volumetric efficiency Measuring the effect on pump performance of: - Sprung loading valve or needle valve - Adjusting the outlet loading valve - Adjusting the		Piston Sensor: -9 to 16mm			
Overall Dimensions Height: Not less than 0.41m Width: Not less than 0.51m Testing: Measurement during each pump cycle of: - Plunger displacement - Oylinder pressure - Pump outlet pressure - On-line P-V diagram displays Measurement during deach pump cycle of: - Plunger displacement - Oylinder pressure - Pump outlet pressure - On-line P-V diagram displays Measurement of volumetric efficiency Measuring the effect on pump performance of: - Sprung loading valve or needle valve - Adjusting the outlet loading valve - Adjusting the		Motor Torque range: 0 to 2.5Nm			
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Width: Not less than 0.88m Depth: Not less than 0.051m Testing: Measurement during each pump cycle of: - Plunger displacement - Oylinder pressure - On-line PV diagram displays Measurement of volumetric efficiency Measuring the effect on pump performance of: - Sprung loading valve or needle valve - Adjusting the outlet loading valve - Adjusting the outlet loading valve - Adjusting the outlet loading valve - The inclusion of a pulsation damper vessel 4. Apparatus Name: BASIC HYDRAULC BENCH Technical Details: Pump: submersible Water head not less than 1.30 litres/sec Min. Sump tank capacity: 250 litres High flow volumetric tank not less than 40 litres Low flow volumetric tank not less than 6 litres Height of working surface: 1 to 1.5 Metre above floor level Overall dimensions Length: 1 to 1.25 m Width: 0.5 to 0.75 m Height: 1 to 1.5 m 5. Apparatus Name: FLOW CHANNEL (To be fully compatible with Hydraulic bench at 5r. 10 above) Diameter of test pipe: Not less than 3.0 mm Length of test pipe: Not less than 50 mm Distance between pressure tapping points: Not less than 500mm Range of mercury manometer: Not less less than 500mm Range of water manometer: Not less than 100 mm Overall Dimensions Length: 0.8 m - 0.9 m Width: 0.3 m - 0.35 m Height: 0.45 m - 0.55 m Testing: Demonstrating basic phenomena associated with open channel flow Visualization of flow patterns over or around an immersed object 6. Apparatus Name: PRAINAGE AND SEPPAGE TANK with BASIC ACCESSORIES Overall Dimensions Length: Not less than 1.60m Height: Not less than 1.60m Width Not less than 0.60m Height: Not less than 1.60m Width Not less than 0.60m Height: Not less than 1.45m Tosting: Seepage underneath a sheet pile wall					
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Pump outlet pressure On-line p-V diagram displays Measurement of volumetric efficiency Measuring the effect on pump performance of: - Sprung loading valve or needle valve - Adjusting the outlet loading valve - The inclusion of a pulsation damper vessel 4. Apparatus Name: BASIC HYDRAULIC BENCH Technical Details: Pump: submersible Water head not less than 1.30 litres/sec Min. Sump tank capacity: 250 litres High flow volumetric tank not less than 6 litres Low flow volumetric tank not less than 6 litres Height of working surface: 1 to 1.5 Metre above floor level Overall dimensions Length: 1 to 1.25 m Width: 0.5 to 0.75 m Height: 1 to 1.25 m Width: 0.5 to 0.75 m Height of test pipe: Not less than 3.0 mm Length of test pipe: Not less than 760 mm Distance between pressure tapping points: Not less man 300 mm Length of test pipe: Not less than 600m Bassuring cylinder capacity: Not less than 500 mm Range of mercury manometer: Not less han 500 mm Measuring cylinder capacity: Not less than 1000 ml Overall Dimensions Length: 0.8 m - 0.95 m Height: 0.45 m - 0.55 m Testing: Demonstrating basic phenomena associated with open chamel flow Visualization of flow patterns over or around an immersed object Overall Dimensions Length: Not less than 1.60m Width Not less than 1.60m Height: Not less than 1.45m Testing: Seepage underneath a sheet pile wall					
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Range of mercury manometer: Not less less than 500mm Range of water manometer: Not less than 500 mm Measuring cylinder capacity: Not less than 1000 ml Overall Dimensions Length: 0.8 m - 0.9 m Width: 0.3 m - 0.35 m Height: 0.45 m - 0.55 m Testing: Demonstrating basic phenomena associated with open channel flow Visualization of flow patterns over or around an immersed object 6. Apparatus Name: DRAINAGE AND SEEPAGE TANK with BASIC ACCESSORIES Overall Dimensions Length: Not less than 1.60m Width Not less than 1.60m Width Not less than 0.60m Height: Not less than 1.45m Testing: Seepage underneath a sheet pile wall		bench at Sr. 10 above) Diameter of test pipe: Not less than 3.0 mm Length of test pipe: Not less than 760 mm	Symmetrical		North America /
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Height: 0.45 m - 0.55 m Testing: Demonstrating basic phenomena associated with open channel flow Visualization of flow patterns over or around an immersed object 6. Apparatus Name: DRAINAGE AND SEEPAGE TANK with BASIC ACCESSORIES Overall Dimensions Length: Not less than 1.60m Width Not less than 0.60m Height: Not less than 1.45m Testing: Seepage underneath a sheet pile wall		bench at Sr. 10 above) Diameter of test pipe: Not less than 3.0 mm Length of test pipe: Not less than 760 mm Distance between pressure tapping points: Not less than 500mm Range of mercury manometer: Not less less than 500mm Range of water manometer: Not less than 500 mm Measuring cylinder capacity: Not less than 1000 ml Overall Dimensions	Symmetrical		North America /
Testing: Demonstrating basic phenomena associated with open channel flow Visualization of flow patterns over or around an immersed object 6. Apparatus Name: DRAINAGE AND SEEPAGE TANK with BASIC ACCESSORIES Overall Dimensions Length: Not less than 1.60m Width Not less than 0.60m Height: Not less than 1.45m Testing: Seepage underneath a sheet pile wall Demonstrating basic phenomena associated with open channel associ		bench at Sr. 10 above) Diameter of test pipe: Not less than 3.0 mm Length of test pipe: Not less than 760 mm Distance between pressure tapping points: Not less than 500mm Range of mercury manometer: Not less less than 500mm Range of water manometer: Not less than 500 mm Measuring cylinder capacity: Not less than 1000 ml Overall Dimensions Length: 0.8 m - 0.9 m	Symmetrical		North America /
Demonstrating basic phenomena associated with open channel flow Visualization of flow patterns over or around an immersed object 6. Apparatus Name: DRAINAGE AND SEEPAGE TANK with BASIC ACCESSORIES Overall Dimensions Length: Not less than 1.60m Width Not less than 0.60m Height: Not less than 1.45m Testing: Seepage underneath a sheet pile wall DRAINAGE AND Straight permeable membrane Curved permeable membrane Lateral pressure plate Tile drain Testing: Seepage underneath a sheet pile wall		bench at Sr. 10 above) Diameter of test pipe: Not less than 3.0 mm Length of test pipe: Not less than 760 mm Distance between pressure tapping points: Not less than 500mm Range of mercury manometer: Not less less than 500mm Range of water manometer: Not less than 500 mm Measuring cylinder capacity: Not less than 1000 ml Overall Dimensions Length: 0.8 m - 0.9 m Width: 0.3 m - 0.35 m	Symmetrical		North America /
with open channel flow Visualization of flow patterns over or around an immersed object 6. Apparatus Name: DRAINAGE AND SEEPAGE TANK with BASIC ACCESSORIES Overall Dimensions Length: Not less than 1.60m Width Not less than 0.60m Height: Not less than 1.45m Testing: Seepage underneath a sheet pile wall Western Straight permeable membrane Curved permeable membrane Lateral pressure plate Tile drain 1 Testing: Seepage underneath a sheet pile wall		bench at Sr. 10 above) Diameter of test pipe: Not less than 3.0 mm Length of test pipe: Not less than 760 mm Distance between pressure tapping points: Not less than 500mm Range of mercury manometer: Not less less than 500mm Range of water manometer: Not less than 500 mm Measuring cylinder capacity: Not less than 1000 ml Overall Dimensions Length: 0.8 m - 0.9 m Width: 0.3 m - 0.35 m Height: 0.45 m - 0.55 m	Symmetrical		North America /
with open channel flow Visualization of flow patterns over or around an immersed object 6. Apparatus Name: DRAINAGE AND SEEPAGE TANK with BASIC ACCESSORIES Overall Dimensions Length: Not less than 1.60m Width Not less than 0.60m Height: Not less than 1.45m Testing: Seepage underneath a sheet pile wall Western Straight permeable membrane Curved permeable membrane Lateral pressure plate Tile drain 1 Testing: Seepage underneath a sheet pile wall		bench at Sr. 10 above) Diameter of test pipe: Not less than 3.0 mm Length of test pipe: Not less than 760 mm Distance between pressure tapping points: Not less than 500mm Range of mercury manometer: Not less less than 500mm Range of water manometer: Not less than 500 mm Measuring cylinder capacity: Not less than 1000 ml Overall Dimensions Length: 0.8 m - 0.9 m Width: 0.3 m - 0.35 m Height: 0.45 m - 0.55 m	Symmetrical		North America /
Visualization of flow patterns over or around an immersed object 6. Apparatus Name: DRAINAGE AND SEEPAGE TANK with BASIC ACCESSORIES Overall Dimensions Length: Not less than 1.60m Width Not less than 0.60m Height: Not less than 1.45m Testing: Seepage underneath a sheet pile wall Foundation pressure plate Straight permeable membrane Curved permeable membrane Lateral pressure plate Tile drain 1 Western Europe / North America / Japan		bench at Sr. 10 above) Diameter of test pipe: Not less than 3.0 mm Length of test pipe: Not less than 760 mm Distance between pressure tapping points: Not less than 500mm Range of mercury manometer: Not less less than 500mm Range of water manometer: Not less than 500 mm Measuring cylinder capacity: Not less than 1000 ml Overall Dimensions Length: 0.8 m - 0.9 m Width: 0.3 m - 0.35 m Height: 0.45 m - 0.55 m Testing:	Symmetrical		North America /
immersed object 6. Apparatus Name : DRAINAGE AND SEEPAGE TANK with BASIC ACCESSORIES Overall Dimensions Length: Not less than 1.60m Width Not less than 0.60m Height: Not less than 1.45m Testing: Seepage underneath a sheet pile wall Foundation pressure plate Straight permeable membrane Curved permeable membrane Lateral pressure plate Tile drain 1 Testing: Seepage underneath a sheet pile wall		bench at Sr. 10 above) Diameter of test pipe: Not less than 3.0 mm Length of test pipe: Not less than 760 mm Distance between pressure tapping points: Not less than 500mm Range of mercury manometer: Not less less than 500mm Range of water manometer: Not less than 500 mm Measuring cylinder capacity: Not less than 1000 ml Overall Dimensions Length: 0.8 m - 0.9 m Width: 0.3 m - 0.35 m Height: 0.45 m - 0.55 m Testing: Demonstrating basic phenomena associated	Symmetrical		North America /
6. Apparatus Name : DRAINAGE AND SEEPAGE TANK with BASIC ACCESSORIES Overall Dimensions Length: Not less than 1.60m Width Not less than 0.60m Height: Not less than 1.45m Testing: Seepage underneath a sheet pile wall Foundation pressure plate Straight permeable membrane Curved permeable membrane Lateral pressure plate Tile drain 1 Vestern Europe / North America / Japan		bench at Sr. 10 above) Diameter of test pipe: Not less than 3.0 mm Length of test pipe: Not less than 760 mm Distance between pressure tapping points: Not less than 500mm Range of mercury manometer: Not less less than 500mm Range of water manometer: Not less than 500 mm Measuring cylinder capacity: Not less than 1000 ml Overall Dimensions Length: 0.8 m - 0.9 m Width: 0.3 m - 0.35 m Height: 0.45 m - 0.55 m Testing: Demonstrating basic phenomena associated with open channel flow	Symmetrical		North America /
SEEPAGE TANK with BASIC ACCESSORIES Overall Dimensions Length: Not less than 1.60m Width Not less than 0.60m Height: Not less than 1.45m Testing: Seepage underneath a sheet pile wall Straight permeable membrane Curved permeable membrane Lateral pressure plate Tile drain 1 Europe / North America / Japan		bench at Sr. 10 above) Diameter of test pipe: Not less than 3.0 mm Length of test pipe: Not less than 760 mm Distance between pressure tapping points: Not less than 500mm Range of mercury manometer: Not less less than 500mm Range of water manometer: Not less than 500 mm Measuring cylinder capacity: Not less than 1000 ml Overall Dimensions Length: 0.8 m - 0.9 m Width: 0.3 m - 0.35 m Height: 0.45 m - 0.55 m Testing: Demonstrating basic phenomena associated with open channel flow Visualization of flow patterns over or around an	Symmetrical		North America /
ACCESSORIES Overall Dimensions Length: Not less than 1.60m Width Not less than 0.60m Height: Not less than 1.45m Testing: Seepage underneath a sheet pile wall	6	bench at Sr. 10 above) Diameter of test pipe: Not less than 3.0 mm Length of test pipe: Not less than 760 mm Distance between pressure tapping points: Not less than 500mm Range of mercury manometer: Not less less than 500mm Range of water manometer: Not less than 500 mm Measuring cylinder capacity: Not less than 1000 ml Overall Dimensions Length: 0.8 m - 0.9 m Width: 0.3 m - 0.35 m Height: 0.45 m - 0.55 m Testing: Demonstrating basic phenomena associated with open channel flow Visualization of flow patterns over or around an immersed object	Symmetrical and asymmetrical aerofoils.		North America / Japan
Overall Dimensions Length: Not less than 1.60m Width Not less than 0.60m Height: Not less than 1.45m Testing: Seepage underneath a sheet pile wall Lateral pressure plate Tile drain 1 America / Japan 1	6.	bench at Sr. 10 above) Diameter of test pipe: Not less than 3.0 mm Length of test pipe: Not less than 760 mm Distance between pressure tapping points: Not less than 500mm Range of mercury manometer: Not less less than 500mm Range of water manometer: Not less than 500 mm Measuring cylinder capacity: Not less than 1000 ml Overall Dimensions Length: 0.8 m - 0.9 m Width: 0.3 m - 0.35 m Height: 0.45 m - 0.55 m Testing: Demonstrating basic phenomena associated with open channel flow Visualization of flow patterns over or around an immersed object Apparatus Name: DRAINAGE AND	Symmetrical and asymmetrical aerofoils. Foundation pressure plate		North America / Japan Western
Overall Dimensions Length: Not less than 1.60m Width Not less than 0.60m Height: Not less than 1.45m Testing: Seepage underneath a sheet pile wall	6.	bench at Sr. 10 above) Diameter of test pipe: Not less than 3.0 mm Length of test pipe: Not less than 760 mm Distance between pressure tapping points: Not less than 500mm Range of mercury manometer: Not less less than 500mm Range of water manometer: Not less than 500 mm Measuring cylinder capacity: Not less than 1000 ml Overall Dimensions Length: 0.8 m - 0.9 m Width: 0.3 m - 0.35 m Height: 0.45 m - 0.55 m Testing: Demonstrating basic phenomena associated with open channel flow Visualization of flow patterns over or around an immersed object Apparatus Name: DRAINAGE AND SEEPAGE TANK with BASIC	Symmetrical and asymmetrical aerofoils. Foundation pressure plate Straight permeable membrane		North America / Japan Western Europe /
Length: Not less than 1.60m Width Not less than 0.60m Height: Not less than 1.45m Testing: Seepage underneath a sheet pile wall	6.	bench at Sr. 10 above) Diameter of test pipe: Not less than 3.0 mm Length of test pipe: Not less than 760 mm Distance between pressure tapping points: Not less than 500mm Range of mercury manometer: Not less less than 500mm Range of water manometer: Not less than 500 mm Measuring cylinder capacity: Not less than 1000 ml Overall Dimensions Length: 0.8 m - 0.9 m Width: 0.3 m - 0.35 m Height: 0.45 m - 0.55 m Testing: Demonstrating basic phenomena associated with open channel flow Visualization of flow patterns over or around an immersed object Apparatus Name: DRAINAGE AND SEEPAGE TANK with BASIC	Foundation pressure plate Straight permeable membrane Curved permeable membrane		North America / Japan Western Europe / North
Width Not less than 0.60m Height: Not less than 1.45m Testing: Seepage underneath a sheet pile wall	6.	bench at Sr. 10 above) Diameter of test pipe: Not less than 3.0 mm Length of test pipe: Not less than 760 mm Distance between pressure tapping points: Not less than 500mm Range of mercury manometer: Not less less than 500mm Range of water manometer: Not less than 500 mm Measuring cylinder capacity: Not less than 1000 ml Overall Dimensions Length: 0.8 m - 0.9 m Width: 0.3 m - 0.35 m Height: 0.45 m - 0.55 m Testing: Demonstrating basic phenomena associated with open channel flow Visualization of flow patterns over or around an immersed object Apparatus Name: DRAINAGE AND SEEPAGE TANK with BASIC ACCESSORIES	Foundation pressure plate Straight permeable membrane Curved permeable membrane Lateral pressure plate		North America / Japan Western Europe / North America /
Height: Not less than 1.45m Testing: Seepage underneath a sheet pile wall	6.	bench at Sr. 10 above) Diameter of test pipe: Not less than 3.0 mm Length of test pipe: Not less than 760 mm Distance between pressure tapping points: Not less than 500mm Range of mercury manometer: Not less less than 500mm Range of water manometer: Not less than 500 mm Measuring cylinder capacity: Not less than 1000 ml Overall Dimensions Length: 0.8 m - 0.9 m Width: 0.3 m - 0.35 m Height: 0.45 m - 0.55 m Testing: Demonstrating basic phenomena associated with open channel flow Visualization of flow patterns over or around an immersed object Apparatus Name: DRAINAGE AND SEEPAGE TANK with BASIC ACCESSORIES Overall Dimensions	Foundation pressure plate Straight permeable membrane Curved permeable membrane Lateral pressure plate		North America / Japan Western Europe / North America /
Testing: Seepage underneath a sheet pile wall	6.	bench at Sr. 10 above) Diameter of test pipe: Not less than 3.0 mm Length of test pipe: Not less than 760 mm Distance between pressure tapping points: Not less than 500mm Range of mercury manometer: Not less less than 500mm Range of water manometer: Not less than 500 mm Measuring cylinder capacity: Not less than 1000 ml Overall Dimensions Length: 0.8 m - 0.9 m Width: 0.3 m - 0.35 m Height: 0.45 m - 0.55 m Testing: Demonstrating basic phenomena associated with open channel flow Visualization of flow patterns over or around an immersed object Apparatus Name: DRAINAGE AND SEEPAGE TANK with BASIC ACCESSORIES Overall Dimensions Length: Not less than 1.60m	Foundation pressure plate Straight permeable membrane Curved permeable membrane Lateral pressure plate	1	North America / Japan Western Europe / North America /
Seepage underneath a sheet pile wall	6.	bench at Sr. 10 above) Diameter of test pipe: Not less than 3.0 mm Length of test pipe: Not less than 760 mm Distance between pressure tapping points: Not less than 500mm Range of mercury manometer: Not less less than 500mm Range of water manometer: Not less than 500 mm Measuring cylinder capacity: Not less than 1000 ml Overall Dimensions Length: 0.8 m - 0.9 m Width: 0.3 m - 0.35 m Height: 0.45 m - 0.55 m Testing: Demonstrating basic phenomena associated with open channel flow Visualization of flow patterns over or around an immersed object Apparatus Name: DRAINAGE AND SEEPAGE TANK with BASIC ACCESSORIES Overall Dimensions Length: Not less than 1.60m Width Not less than 0.60m	Foundation pressure plate Straight permeable membrane Curved permeable membrane Lateral pressure plate	1	North America / Japan Western Europe / North America /
Seepage underneath a sheet pile wall	6.	bench at Sr. 10 above) Diameter of test pipe: Not less than 3.0 mm Length of test pipe: Not less than 760 mm Distance between pressure tapping points: Not less than 500mm Range of mercury manometer: Not less less than 500mm Range of water manometer: Not less than 500 mm Measuring cylinder capacity: Not less than 1000 ml Overall Dimensions Length: 0.8 m - 0.9 m Width: 0.3 m - 0.35 m Height: 0.45 m - 0.55 m Testing: Demonstrating basic phenomena associated with open channel flow Visualization of flow patterns over or around an immersed object Apparatus Name: DRAINAGE AND SEEPAGE TANK with BASIC ACCESSORIES Overall Dimensions Length: Not less than 1.60m Width Not less than 0.60m	Foundation pressure plate Straight permeable membrane Curved permeable membrane Lateral pressure plate	1	North America / Japan Western Europe / North America /
	6.	Diameter of test pipe: Not less than 3.0 mm Length of test pipe: Not less than 760 mm Distance between pressure tapping points: Not less than 500mm Range of mercury manometer: Not less less than 500mm Range of water manometer: Not less than 500 mm Range of water manometer: Not less than 500 mm Measuring cylinder capacity: Not less than 1000 ml Overall Dimensions Length: 0.8 m - 0.9 m Width: 0.3 m - 0.35 m Height: 0.45 m - 0.55 m Testing: Demonstrating basic phenomena associated with open channel flow Visualization of flow patterns over or around an immersed object Apparatus Name: DRAINAGE AND SEEPAGE TANK with BASIC ACCESSORIES Overall Dimensions Length: Not less than 1.60m Width Not less than 0.60m Height: Not less than 1.45m	Foundation pressure plate Straight permeable membrane Curved permeable membrane Lateral pressure plate	1	North America / Japan Western Europe / North America /
	6.	Diameter of test pipe: Not less than 3.0 mm Length of test pipe: Not less than 760 mm Distance between pressure tapping points: Not less than 500mm Range of mercury manometer: Not less less than 500mm Range of water manometer: Not less than 500 mm Range of water manometer: Not less than 500 mm Measuring cylinder capacity: Not less than 1000 ml Overall Dimensions Length: 0.8 m - 0.9 m Width: 0.3 m - 0.35 m Height: 0.45 m - 0.55 m Testing: Demonstrating basic phenomena associated with open channel flow Visualization of flow patterns over or around an immersed object Apparatus Name: DRAINAGE AND SEEPAGE TANK with BASIC ACCESSORIES Overall Dimensions Length: Not less than 1.60m Width Not less than 0.60m Height: Not less than 1.45m Testing:	Foundation pressure plate Straight permeable membrane Curved permeable membrane Lateral pressure plate	1	North America / Japan Western Europe / North America /
Seepage through an earth dam	6.	Diameter of test pipe: Not less than 3.0 mm Length of test pipe: Not less than 760 mm Distance between pressure tapping points: Not less than 500mm Range of mercury manometer: Not less less than 500mm Range of water manometer: Not less than 500 mm Range of water manometer: Not less than 500 mm Measuring cylinder capacity: Not less than 1000 ml Overall Dimensions Length: 0.8 m - 0.9 m Width: 0.3 m - 0.35 m Height: 0.45 m - 0.55 m Testing: Demonstrating basic phenomena associated with open channel flow Visualization of flow patterns over or around an immersed object Apparatus Name: DRAINAGE AND SEEPAGE TANK with BASIC ACCESSORIES Overall Dimensions Length: Not less than 1.60m Width Not less than 0.60m Height: Not less than 1.45m Testing: Seepage underneath a sheet pile wall	Foundation pressure plate Straight permeable membrane Curved permeable membrane Lateral pressure plate	1	North America / Japan Western Europe / North America /

1			
	Control of seepage through permeable soils by		
	subsoil drainage		
	Distribution of uplift pressure on hydraulic		
	structures		
	Reducing uplift pressure and lateral thrust by		
	drainage		
	Formation and behaviour of 'quicksand'		
	Stability of an earth dam		
	Draining an excavation site using wells		
	Standards: N/A		
7.	Apparatus Name : FREE & FORCED	01	Western
	VORTICES	0.	Europe/
	(To be fully compatible with Hydraulic		North
	bench at Sr. 10 above)		America /
	Tank diameter: Not less than 245mm		Japan
	Height to overflow point: Not less than 180 mm		oupun
	Orifice diameters: Not less than 8, 16 and 24		
	mm		
	Forced vortex measuring probes:		
	Distance from centre: 0, 30, 50, 70, 90 and		
	110 mm		
	Pitot tubes having measuring point (nose) at:		
	15, 25 and 30 mm radius		
	Inlet tubes: Not less than 9 and 12.5mm		
	diameter		
	Overall Dimensions:		
	Length: 0.55 m - 0.65 m		
	Width: Not less than 0.50m		
	Height: Not less than 0.36m		
	Testing: To produce and measure the		
	characteristics of free and forced vortices		
	using a hydraulics bench		
8.	Apparatus Name : HYDRAULIC RAM	01	Western
0.	(To be fully compatible with Hydraulic	01	Europe/
	bench at Sr. 10 above)		North
	Supply head: 300 mm – 700 mm variable		America /
	Delivery head: 750 mm – 1500 mm variable		Japan
	Overall Dimensions:		Japan
	Length: 0.7 m - 0.8m		
	Width: 0.3 m - 0.35 m		
	Height: 1.5 m - 1.7 m		
	Testing:		
	To demonstrate the operating principles of the		
	hydraulic ram		
	Establishing flow/pressure characteristics and		
	determining efficiency of the		
	hydraulic ram		
9.	Apparatus Name : CENTRIFUGAL PUMP	01	Western
9.	characteristics	υı	Europe/
	(To be fully compatible with Hydraulic		North
	bench at Sr. 10 above)		America /
	Pump: centrifugal type		Japan
	max. water head 21.0 m		σαραπ
	max. flow rate 1.35 litres/sec		
	Motor: 0.36kW		
	Speed controller: Frequency inverter		
	Speed controller. Frequency inverter Speed range: 0 to 1500 rpm		
	Pressure gauge: 0 to 60 m		
	Compound gauge: -10 to 32 m		
	Overall Dimensions:		
	Coverall Dimensions: Length:0.3 m = 0.4 m		
	Length.o.3 m = 0.4 m Width: 0.1 m = 0.2 m		
	Width: 0.1 m = 0.2 m Height: 0.3 m = 0.4 m		
	Testing:		
	reading.		

Determining the relationship between head, discharge, speed, power and efficiency for a centrifugal pump at various speeds. Determining the head/flow rate characteristics of two similar pumps operating in either parallel or series configuration at the same speed			
10. Apparatus Name: COMPUTER AIDED LEARNING SOFTWARE FOR HYDRAULIC BENCH (To be fully compatible with Hydraulic bench at Sr. 10 above)		01	Western Europe/ North America / Japan
Apparatus Name: FLOW VISUALIZATION APPARATUS / LAMINAR FLOW TABLE (Complete set) WORKING SECTION: Width inside moulding: 600 mm – 610 mm Length of glass plates: 890 mm – 900 mm Actual viewing area: Min. 495 mm x 755 mm Distance between glass plates: 3.0 mm – 3.5 mm Sinks/sources: Min. eight tappings in seven positions Dye injectors: 12 - 19 hypodermic needles Testing: Visualization of Flow lines/Stream Lines against obstacles Influence of sources	MODELS: 2 x canal banks 2 x rectangles 3 x cylinders 1 x aerofoil Blue Dye Powder	1	Western Europe / North America / Japan

Lot II: GEOTECHNICAL LAB

Accessories Pressure Actuator Conform to existing	01	Origin Western Europe /
 UTM held at NBC Quick release self-sealing couplings 2 pieces of upper and 2 pieces of lower loading caps with spherical coupling 		North America / Japan / Turkey
Assembly for Rock Core Specimens, Ø47 mm to Ø63.5		
	 Quick release self-sealing couplings 2 pieces of upper and 2 pieces of lower loading caps with spherical coupling Compression Jig Assembly for Rock Core 	 Quick release self-sealing couplings 2 pieces of upper and 2 pieces of lower loading caps with spherical coupling Compression Jig Assembly for Rock Core Specimens, Ø47 mm to Ø63.5

Lot III TRANSPORTATIONS LAB

Ser	Item	with Technical Specifications		ard Accessories with equipment	Qty	Country of Origin
1.	DYNA	AMIC SHEAR RHEOMETER (DSR)	Acces	sories:	01	Western
	Testir	ng: To determine the rheological property of	•	Scrapper (2 Nos.)		Europe /
	bitum	en	•	Adapter		North
	Stand	lard: Conforming to ASTM D7175, ASTM D7405,	•	Exchange grip		America /
		1 D7552	•	2 exchangeable plates		Japan
	Appai	ratus include the following:	•	Measuring plate 25		· .
	•	Speed Range 0.1-1000 rpm	mm (2	? Nos.)		
	•	Torque 0.1-150mNm	• `	Measuring plate 8 mm		
	•	Temperature Range: -5° - 200°C	(2 Nos	s.)		
	•	Temperature Accuracy: 0.1°C	•	Spindle 25mm (2		
	•	Phase Angle measuring capability: 0°-90°	Nos.)			
	•	Frequency: 0.001-10Hz	• ′	Spindle 8mm (2 Nos.)		
	•	Specimen Size: 8 or 25mm	•	Silicon mold 8mm (2		
	•	Revolutions per Minute: 10-1,000 rpm	Nos.)	•		

temperated basic plate, basic plate support, computer and software. 2. DOUBLE WHEEL TRACKING MACHINE Testing: To determine the rutting potential and moisture susceptibility of asphaltic samples Standard: Conforming to ASTM T-324, AASHTO T-340 Apparatus include the following: Automatic Wheel Tracker Capable of performing Hamburg Wheel Tracking Test (AASHTO T-324) Capable of performing APA Wheel Tracking Test (AASHTO T-340) Capable of Performing Moisture susceptibility Test Have capability of submerging sample in water while wheel passing on sample during test Variable wheel passing rate of 20-100 passes per minute		Complete with Peltier control unit, Peltier	Silicon mold 25mm (2		
2. DOUBLE WHEEL TRACKING MACHINE Testing: To determine the rutting potential and moisture susceptibility of asphaltic samples Standard: Conforming to ASTM T-324, AASHTO T-340 Apparatus include the following: Automatic Wheel Tracker Capable of performing Hamburg Wheel Tracking Test (AASHTO T-324) Capable of performing APA Wheel Tracking Test (AASHTO T-340) Capable of Performing Moisture susceptibility Test Have capability of submerging sample in water while wheel passing on sample during test Variable wheel passing rate of 20-100 passes per minute			Nos.)		
Testing: To determine the rutting potential and moisture susceptibility of asphaltic samples Standard: Conforming to ASTM T-324, AASHTO T-340 Apparatus include the following: Automatic Wheel Tracker Capable of performing Hamburg Wheel Tracking Test (AASHTO T-324) Capable of performing APA Wheel Tracking Test (AASHTO T-340) Capable of Performing Moisture susceptibility Test Have capability of submerging sample in water while wheel passing on sample during test Variable wheel passing rate of 20-100 passes per minute					
Variable temperature heating capability. Complete with computer and software.	2.	Testing: To determine the rutting potential and moisture susceptibility of asphaltic samples Standard: Conforming to ASTM T-324, AASHTO T-340 Apparatus include the following: • Automatic Wheel Tracker • Capable of performing Hamburg Wheel Tracking Test (AASHTO T-324) • Capable of performing APA Wheel Tracking Test (AASHTO T-340) • Capable of Performing Moisture susceptibility Test • Have capability of submerging sample in water while wheel passing on sample during test • Variable wheel passing rate of 20-100 passes per minute • Variable temperature heating capability.	Testing Rubber WheelsMoulds for placing asphaltic	01	Europe / North America /

Lot IV: PUBLIC HEALTH LAB

S. No	Item Name with Technical Specification	Standard Accessories	Qty	Country of Origin
1.	SPECTROPHOTOMETER Double Beam Wavelength Range= 190-1100nm Measurement Modes: Absorbance, Transmission, WL Scan, Concentration PC with Software	2 Sets of Quartz Cuvette 4 Sets of Glass Cuvette PC with Software	01	North America/ Western Europe/ Japan/Turkey

FORMAT OF TECHNICAL QUOTATION

Date:	

To: The President of Local Purchase Committee SCEE, NUST H-12 Islamabad

Sub	ect:		

Ser	Item name	Technical Specifications	Standard Accessories	A/U	Qty	Origin
1. 🔏		2		100		
2.	A TO MA	A STATE OF THE STA			1.00	
3.			100		7	<u>A</u>
4.				9	- 9	10
5.	76.			. 18	(6)	10

Generation Instructions

- All Machines/Tools/Equipment's warranty will be at least for 1 years including spares.
- Equipment with similar or better specs will be considered.
- All operational machines/equipment supported with functional training program.
- All operational machine/equipment supported with installation & functional tests with demonstration of complete operations.
- All operational machines/equipment supported with standard attachments & accessories.
- OEM Certificate.
- Technical literature / brochures.
- Company profile.
- · Technical networks details.
- Distributor certificate.

<u>Documents Included</u> (As applicable)

- User /operational; Manual.
- Technical Manual.
- Diagrams/Maintenance Manuals etc.

Spare Parts Supply

• The supply of spare parts for at least 10 years of operation will be ensured to be available as per requirement on separate agreement.

Annex-C

FORMAT OF FINANCIAL QUOTATION

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	ııa	TL	3
	பவ	ıτ	•

To: The President of Local Purchase Committee SCEE, NUST H-12 Islamabad

Oh:	-4.	
Subje	ect:	230

Ser	Description	Country of Origin	A/U	Qty	Unit Price	GST (Where applicable)	Total Price
1.	Ad from		-				
2.	All Allera			- 1			
3. 🔏	/ ////	2	1			100	100
4.				1 1	1 1		1 13
5.	AVA					62	3 / 1/2

Terms and conditions:

- Price validity: Prices are valid for 90 days and extendable up to 120 days.
- Prices are inclusive of all taxes (as applicable).
- Mode of payment: as per Tender Documents
- Warranty: 12 Months after sales service including spares.

Attachment:

- GST & NTN Certificates
- Firm profile
- Bank statement
- Ernest Money (if applicable)
- Proper letter head (with stamp, sig, telephone &Fax #)

Annex	"D"
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PROPOSAL SUBMISSION UNDERTAKING

Date
Date

To: President Local Purchase Committee SCEE, NUST Campus H-12, Islamabad

Dear Sir,

- 1. We, the undersigned, offer to provide our services for "Supply of Lab Equipment to SCEE-NUST for SCEE NUST Islamabad Ph-II " in accordance with your Tender Document Number: _____ dated: _____ We are hereby submitting our proposal, which includes technical as well as financial proposal as per instructions.
- 2. We hereby acknowledge and agree to all terms, conditions, special provisions, and instructions included in the above-referenced tender document. We further certify that the under mentioned firm as well as its Principal (OEM) are eligible to participate in this procurement under the terms of this solicitation and under PPRA regulations.
- 3. We understand and agree that the decision of the procurement / evaluating committee shall be final and cannot be challenged on any ground at any forum and the procurement / evaluating committee will not be liable for any loss or damage to any party acting in reliance thereon.
- 4. Furthermore, we hereby certify that, to the best of our knowledge and belief:
 - a. We have no close, financial or familial relationships with any NUST / (SCEE) staff members.
 - b. We have no close, financial or familial relationships with any other bidder submitting proposals in response to the above-referred Tender Document.
 - c. The prices in our offer have been arrived independently, without any consultation, communication, or agreement with any other bidder or competitor for the purpose of restricting competition.
 - d. All information in our proposal and all supporting documentation are authentic and accurate.
 - e. We understand and agree to NUST / (SCEE)' prohibitions against fraud, bribery, and kickbacks.
- 5. We hereby certify that the enclosed representations, certifications, and all other submitted documents / statements are accurate, current, and complete.

Authorized Signature M/S (Firm's Name) Dated

Annex "E"

SOURCE AND NATIONALITY COMPLIANCE FORM

- 1. I, (Name); (CNIC No), (Designation), (Company Name), confirm / do not confirm that the quoted items are not manufactured, grown, produced, shipped from, or otherwise originate from any of the following countries; Burma (Myanmar), Cuba, Iran, North Korea, (North) Sudan, or Syria.
- 2. Source. "Available for Sale" in the Cooperating Country.
- 3. In case, the supplier is an authorized sales representative / dealer of the manufacturer in the cooperating country, a brief introduction and copies of dealership certifications are to be presented.
- 4. In case, the quoted items are included in supplier's standard catalog, the catalog is to be presented.
- 5. The supplier is to certify that the quoted items are routinely traded or offered for sale in the cooperating country. (YES/NO). Tick whichever is applicable.
 - a. Supplier has an installation base in the cooperating country. (YES / NO)
 - b. If yes provide some details of after sale support points with complete addresses.
 - c. Offered equipment is serviceable by the supplier and has a valid warranty in the cooperating country (YES / NO)
 - d. IF yes, please provide details of capability how equipment is serviceable in cooperating country.
 - e. Complete details of type of warranty offered in cooperating country (or attach standard warranty terms and conditions offered).
 - f. Supplier will be responsible of ensuring that after sale service support / spare parts are available will try all efforts to make it available. (Bidder / Supplier agrees with is statement). Yes / NO
 - g. For items purchased outside of the cooperating country:
 - h. If the items are not "available for purchase" in the cooperating country, identify the "source" of the equipment and describe compliance with the authorized geographic code 937.

	i. The	items	WIII	be	imported	from	source
	is		1111				
	[Descri	be the "sourc	e" countri	es and cor	mpliance with th	ne authorize	d geo code
ν,	Nationality:	1111					

Per 22 CFR 228.11, organizations must meet both (a) and (b) below, as well as either (c) or (d):

b. The supplier is operating as an "ongoing concern" in a country in the authorized geographic code:

c. The supplier is managed by a governing body, the majority of whom are citizens (or lawful permanent residents) of countries in the authorized geographic code:_____

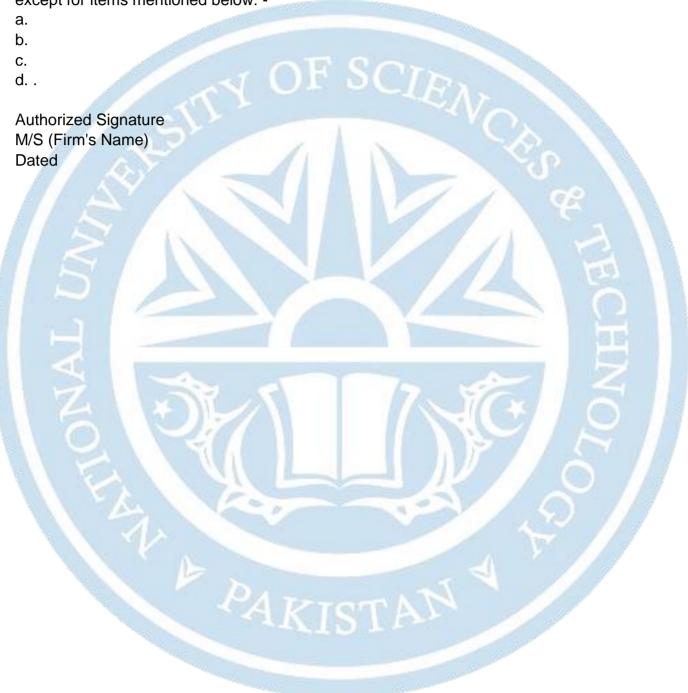
[Provide details and/or attach a certification from the supplier documenting that they comply with this.]

d. The supplier employs citizens (or lawful permanent residents) of countries in the authorized geographic code, in more than 50% of its permanent fulltime positions and more than 50% of its principal management positions:______

[Provide details, such as organizational chart with information, and/or attach a certification from the supplier documenting that they comply with this.]

OVERALL COMPLIANCE UNDERTAKING

1. I, (Name); (CNIC No), (Designation), (Company Name) have gone through the Terms / Conditions of this tender document and have found the document in whole as non-biased to any particular vendor or product / brand. All quoted items. I hereby undertake and firmly bound myself to abide by / comply with all sections of this tender document except for items mentioned below: -



Annex G" PROJECTS INFORMATION: COMPLETED & ONGOING (LAST 2 YEARS)

	PURCHASE ORDER	_		CONTRACT	Γ	
ser	OR CONTRACT DETAILS	CLIENT	Award Year	Amount	Duration	REMARKS
1.					Shirt Shirt	
2.		1	ST C	10-		
3.		A			7	
4.		7			Vo	
5.	0.0		/			



Firm with more than Rs. 3 M annual

Firm has completed more than or equal to

ten (10) similar projects. (Documentary

Firm has completed seven (7) similar

Turnover for last one (01) year.

proof and references are required)

				Annex "H"			
	EVALUATION	I CRIT	ERIA TEC	CHNICAL & FINANCIAL			
Part	A) Mandatory Requirement						
4	Firm is registered in Income tax and sales tax department and will produce Sales Tax and						
1.	Income Tax Registration certific	ate.					
2.	The bidders must have office in	Pakist	an				
	Financial strength to be verified	through	gh Audite	d Financial Statements /bank statement for			
3.	last One year						
4	The firm should not have be	en bla	acklisted	by any government / Semi Government			
4.	organization.			~~~			
Part	B) General Evaluation		r. A				
Tota	al 150 Marks i.e., 80 Marks for S	pecific	ations a	nd 70 marks as per the following			
Ser	Factor	Score	B/down	Criteria			
	Firm office in Pakistan	T	5	Isb/ Rwp			
1.	preferably: -	5	3	Lhr/Psc			
1.	Islamabad/Rawalpindi/ Lahore/	3	2	Kci/Qta			
	Karachi/ Peshawar/Quetta	A	1				
2.	Details of repair and	10	10	Give Details / locations			
-	maintenance facilities	10		Sivo Botalio / Todationo			
	After Sale Service / Spare Parts	M	10	Supply of spare parts within 15 days			
3.	Availability	10	7	Supply of spare parts within 1 month			
1	rvaliability		5	Supply of spare parts within 3 months			
4.	Delivery Duration	10	10	Delivery within 4-6 weeks			
٦.	Delivery Duration	10	05	Delivery within 8-12 weeks			
		5	5	Firm with more than Rs.8 M annual			
		3	3	Turnover for last one (01) year.			
5.	Financial Strength verified	41	3	Firm with more than Rs. 5 M annual			
J.	through a Bank Certificate		710	Turnover for last one (01) year.			

2

10

7

projects.

10

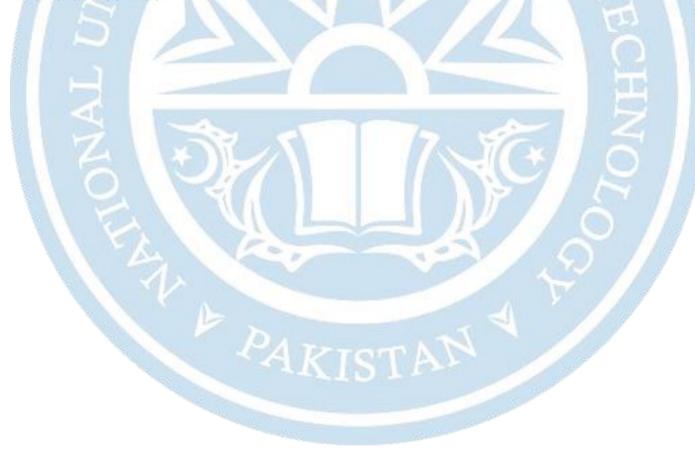
Similar Projects Completed

6.

			5	Firm has completed five (05) similar projects.
7.	Brand/ Manufacturer country of origin	15		Brand: North America / Western Europe = 15 Japan = 12 China/ Turkey = 8 Any other = 5
8.	Technical Bid Completeness (documentary proof, brochures, diagrams etc)		F S	To be assigned by Technical Evaluation Committee
	Grand Total	70	c. A	

Note:

- 1. Financial proposals of the bidders who would secure minimum 80% marks from technical weightage would be opened.
- 2. Award of contract: The technically qualified bidder with lowest price will be awarded contract.



INTEGRITY PACT

DECLARATION OF FEES, COMMISSION AND BROKERAGE ETC. PAYABLE BY THE SUPPLIERS OF GOODS, SERVICES & WORKS IN CONTRACTS WORTH RS. 10.00 MILLION OR MORE

WILLION		\ L				
Contract	No	Contract Title:	Dated		Contract	Value:
		_ Contract Title: _	200-200-			
induced the from Gove	e procur ernment	ement of any contr of Pakistan (GoP)	act, right, interes or any administ	eby declares that it it, privilege or other rative subdivision c any corrupt busine	obligation or agency th	r benefit
that it has not given Pakistan e affiliate, a subsidiary as consult a contract	fully decoragrees either diagent, as any coration feet, right, i	elared the brokeraged to give and shale rectly or indirectly sociate, broker, commission, gratificate or otherwise, with	e, commission, fall not give or agrathrough any nationsultant, directors tion, bribe, finder the object of object of other obligation.	e of Supplier] represes etc. paid or payee to give to anyonatural or juridical por, promoter, share er's fee or kickback otaining or inducing on or benefit in whe pursuant hereto.	yable to anyone within or person, inclue holder, spoon, whether deather the procure	one and outside uding its onsor or escribed ement of
and arranghas not ta representa [name of declaration defeat the contract, a aforesaid	gements aken any ation or v Supplie n, not m p purpos right, int shall, wi	with all persons in action or will not warranty. er] accepts full re aking full disclosurate of this declarate erest, privilege or	respect of or retake any action sponsibility and re, misrepresentation, representation, other obligation any other rights	make full disclosure lated to the transator to circumvent the strict liability for sing facts or taking ion and warranty. In or benefit obtain and remedies available option of GoP.	making ar any action It agrees t	GoP and laration, by false likely to hat any ured as
agrees to business p the sum o Supplier]	indemni oractices of any co as afore	ify GoP for any lost and further pay commission, gratificates and for the purposes and for the purposes.	ss or damage in empensation to G ation, bribe, finden ose of obtaining	y GoP in this regard neurred by it on act GoP in an amount eder's fee or kickback or inducing the properties of the properties.	ccount of its quivalent to continuous given by [rorocurement	corrupt ten time name of t of any
Name of E	Buyer:		Name	e of Seller/Supplier:		
				ature:		
[Seal]			[Seal	1		