UNIVERSITY OF ENGINEERING AND TECHNOLOGY MARDAN

KHYBER PAKHTUNKHWA

STANDARD BIDDING DOCUMENTS

FOR

SUPPLY OF LAB EQUIPMENT FOR CIVIL ENGINEERING DEPARTMENT UNDER THE PROJECT TITLED "ESTABLISHMENT AND UPGRADING OF CORE ENGINEERING DEPARTMENTS AT UET MARDAN"

PROCUREMENT REF. NO. 13/HEC/2021

Last Date/Time for Submission:	5th November, 2021 at 11:00 AM
Bid Opening Date/Time:	5th November, at 11:30 AM
Venue:	Conference room, UET Mardan
Email:	po@uetmardan.edu.pk
	Price: 2500/-

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1. Invitation for Bids

Date: _____
Bid Reference No.: _____

1. The University of Engineering and Technology Mardan, KPK has received an allocation from the Public Fund in PKR/Foreign Currency towards the cost of the project titled "Establishment and Upgrading of Core Engineering Departments at UET Mardan". It is intended that part of the proceeds of this allocated fund will be applied to eligible payments under the contract for supply and installation of lab equipment/apparatus.

2. The University of Engineering and Technology Mardan, KPK, invites sealed bids from eligible firms or company registered with relevant govt. authority. A foreign bidder is entitled to bid only in a joint venture with a Pakistani supplier/agent in accordance with the provisions of PEC bye-laws. Bidders may obtain further information from, inspect at and acquire the Bidding Documents from the Purchase Section, UET Mardan from 10.00 am to 04.00 pm.

3. A complete set of Bidding Documents may be purchased by an interested bidder on submission of a written application to the above office and upon payment of a non-refundable fee of Rs.2500.

4. The provisions in the Instructions to Bidders and in the General Conditions of Contract are the provisions of the Khyber Pakhtunkhwa Public Procurement Act and its Rules made thereunder which also conform to the requirements of the World Bank Standard Bidding Documents: Procurement of Goods for National Competitive Bidding, Pakistan, Part One.

5. All bids must be accompanied by a Bid Security equal to 2% of the Bid amount and must be delivered to Procurement Officer, Purchase Section, UET Mardan from 10.00 am to 04.00 pm on or before November 5, 2021, 11:00 am. Bids will be opened at 11:30 am on the same day, in the presence of bidders' representatives who choose to attend at the same address. The Bid security amount shall not be disclosed to any person.

2. Instructions to Bidders

3. General Terms		
1	Introduction	1.1 Bidders shall adhere to all the terms and conditions of the requirements of instructions to bidders (ITB), including any amendments made from time to time as KPPRA rules/regulation. This ITB will be governed under "Single Stage, two Envelope Procedure" of Khyber Pakhtunkhwa Public Procurement Rules, 2014, as amended from time to time and instructions of the Government of Khyber Pakhtunkhwa received during the completion of the project. 1.2 Any Bid submitted will be regarded as an offer by the Bidder and does not constitute or imply the acceptance of the Bid by UET Mardan. The Institute is under no obligation to award a contract to any Bidder as a result of this ITB. 1.3 UET Mardan reserves the right to cancel the procurement process at any stage without any liability of any kind for Institute, as per KPPRA rules.
2	Fraud & Corruption	2.1 UET Mardan strictly enforces a policy of zero tolerance on proscribed practices, including fraud, corruption, collusion, unethical or unprofessional practices, and obstruction of institute vendors and requires all bidders/ vendors observe the highest standard of ethics during the procurement process and contract implementation.
3	Eligibility Criteria	3.1 Bidder shall not be suspended, debarred, or otherwise identified as ineligible by any Government/ Semi-government/ or any other international Organization. Bidders are therefore required to disclose to UET Mardan whether they are subject to any sanction or temporary suspension imposed by these organizations. 3.2 It is the Bidder's responsibility to ensure that its employees, sub-contractors, service providers, suppliers and/ or their employees meet the eligibility requirements as established by UET Mardan.
4	General Terms	4.1 The Bidder shall be registered with Sales Tax, Income Tax Department as well as with relevant tax Authorities. 4.2 The Bidder shall have not been blacklisted by any Government/ semi Government organization. 4.3 There shall be no litigation against the bidder/ firm.
4. Preparation of Technical Bid		
5	Brief profile of Bidder firm/ Company	5.1 Bidder shall provide company introduction, type of business, offices & services in Pakistan, NTN & GST registration number with copy of NTN & GST certificates, professional staff (administrative & technical),

		verifiable office addresses, Telephone & Cell No., E-mail address for Contacts etc.
6	Detail of Experience	6.1 Bidder shall provide list of contracts in-hand along with the name of organization, complete address, year of contract, contract value, date of contract award and shall provide contract completion certificate/Satisfactory Report for all those contract which they have already completed/performed.
7	Detail of Items & Specifications	7.1 Bidder shall provide detail of items, brands, country of origin with complete specification being offered, without mentioning prices, on company letter head (duly signed and stamped beneath by the bidder).
8	Reputation & Reliability of Brand, Manufacturer & Country of Origin of Products	8.1 The Bidder shall provide supported brochures of quoted items for better understanding of brand, make and specification, country of origin and reputation of brand & manufacturer in relevant business market.
9	Bidder's Corporate Status or Affiliation of Bidder with Products manufacturer	9.1 Bidder specify and mention clearly on bid whether the bidder firm is; a. Manufacturer b. Business partner of manufacturer c. Sole distributor of manufacturer d. Authorized distributor/agent/reseller/supplier e. Any other affiliation (Provide certificate/letter issued from manufacturer as supporting document to certify affiliation with manufacturer)
10	Technical Resources & Services Support	10.1 Mention in detail the in-house resources, facilities and technical support available from the bidder for installation, up-gradation, configuration, commissioning and after sales services of equipment.
11	Warranty/Guarantee Terms	11.1 The bidder shall offer 01-year warranty/guarantee standard warranty terms of manufacturer **(after sales & service)**
12	Project Implementation (Maximum 12-16 weeks)	12.1 Delivery, installation, commissioning, testing & execution, operation and training should be completed within 12-16 weeks .
13	Cost of Preparation of Bid	13.1 The Bidder shall bear all costs related to the preparation and/ or submission of the Bid, regardless of whether its Bid is selected or not.
14	Documents Comprising the Bid	14.1 The Bid shall comprise of the following documents and related forms, details of which are provided in the Bid Data Sheet (BDS). All pages of the Bid shall be signed, stamped and properly paginated.

		a) Returnable Forms shall be properly filled in Ink or Typed. Forms filled in using a pencil shall not be considered and substantiate the annulment of the Bid Proposal. b) Documents establishing the eligibility and qualifications of the bidder; c) Bid covering Technical Specifications in detail, and covering Price Schedule; d) Bid Security, as mentioned BDS; e) Any attachments and/ or appendices to the Bid.
15	Technical Bid Format and Content	15.1 The Bidder is required to submit a bid using the Standard Forms and templates provided in the ITB. 15.2 When applicable and required, the bidder shall describe necessary training program available for the maintenance and operation of the equipment offered as well as cost to the Institute. Unless otherwise specified, such training as well as training materials shall be provided in the language of the Bid as specified in the BDS. 15.3 When applicable and required, the bidder shall certify the availability of spare parts for a period of at least five (5) years from date of delivery, or as otherwise specified in this ITB.
16	Price Schedule	16.1 The Price Schedule shall be prepared using the Forms provided in the ITB and taking into consideration the requirements in the ITB. 16.2 Any requirement described in this ITB but not priced in the Price Schedule, shall be assumed to have been included in the prices of other activities or items, as well as in the final total price.
17	Bid Security	17.1 A Bid Security shall be provided in the amount and form indicated in the BDS. The Bid Security shall be valid for the duration of BDS. 17.2 The Bid Security will be forfeited by institute, and the Bid rejected, in the event of any, or combination, of the following conditions: a) If the Bidder withdraws its offer during the period of the Bid Validity specified in the BDS, or; b) In the event the successful Bidder fails: i. to sign the Contract after institute has issued an award letter; or ii. to furnish the Performance Security, insurances, or other documents that institute may require as a condition precedent to the affectivity of the contract that may be awarded to the Bidder. c) The Bidder shall submit an affidavit on stamp paper with the technical bid that "the requisite Bid Security of 2% of the total bid has been placed separately in the sealed envelope of financial

		bid". In Affidavit the amount of Bid Security shall not be disclosed by any mean. In case of failure of submission of an affidavit for bid security with the technical bid, or disclosing the bid amount indirectly, the bid shall be rejected by the Purchaser
18	Bid Validity	18.1 90 days from the date of opening of Financial bid.
5. Preparation of Financial Bid		
20	Bid Prices	20.1 Each offered item to be entered separately (with unit & total cost) inclusive of cost of equipment, air freight (Islamabad), Sea Freight (Karachi) and transportation charges upto UET Mardan. Delivery of equipment, installation, testing, commissioning, operational and training etc. (as and where applicable) will also be responsibility of the bidder/supplier. The bid must be made on company letter head either by foreign principal/ manufacturer of quoted items or the authorized agent/dealer/ bidder in Pakistan (duly signed and stamped beneath by the bidder firm/company or authorized person). **(Price for equipment shall be quoted as C&F(Karachi/Peshawar).**
21	Bid Validity	21.1 90 Days from the date of opening financial tenders.
22	Amount of Earnest Money	22.1 2% of total bid amount
23	Form of Earnest Money	23.1 CDR from the scheduled bank in favor of the Treasurer, UET Mardan, shall be attached by the bidder.
6. Sealing, Submission and Opening of Bid		
24	Bid Proposal Submission	24.1 The bidder shall submit a duly signed and numbered all pages of the Complete bid in an envelope sealed and marked in accordance with KPPRA rule. 24.2 The envelope should contain all the returnable forms (A – G) along with technical specifications meeting or exceeding the requirements as stipulated in this ITB, and supporting documents in accordance with requirements in the BDS. 24.3 The bid security as referred in BDS must be placed in the bid envelope. An affidavit on stamp paper be placed in the technical bid stating that "the requisite Bid Security of 2% of the total bid has been placed separately in the sealed envelope of financial bid". 2% bid security in the shape of CDR be placed in the financial quotation. 24.4 Bid can be delivered either personally, or by courier as specified in the BDS. 24.5 The bid shall be signed by the bidder or person(s) duly authorized to Commit the Bidder. The authorization shall be communicated through a document evidencing such authorization issued by the legal representative of the bidding entity, or a power of attorney accompanying the bid. There should be no errors and/ or over-writings. Corrections (if any) should be made clearly and initialed with

		dates. 24.6 Bidders must be aware that the mere act of submission of a bid, in and of itself, implies that the bidder fully accepts the general contract terms and conditions. 24.7 Hard copy submission by courier or hand delivery allowed or specified in the BDS shall be governed as follows: a) The signed bid shall be marked "Original", and its copies marked "Copy" as appropriate. The number of copies is indicated in the BDS. All copies shall be made from the signed original only. If there are discrepancies between the original and the copies, the original shall prevail. b) The bid proposals must be sealed and submitted in an envelope, which shall: i. Bear the name of the Bidder; ii. Be addressed to UET Mardan as specified in the BDS; and iii. Bear a warning not to open before the time and date for bid opening as specified in the BDS. iv. Technical and financial bids be sealed in separate envelopes bearing names as "Technical Bid" and "Financial Bid". If the envelope with the bid is not sealed and marked as required, the institute shall assume no responsibility for the misplacement, loss, or premature opening of the bid.
25	Deadline for Submission of Bids and Late Bids	25.1 Complete bids must be received by UET, Mardan in the manner, and no later than the date and time, specified in the BDS. The institute shall only recognize the actual date and time that the bid was received by UET, Mardan. 25.2 UET, Mardan shall not consider any bid that is received after the deadline for the submission of bids.
26	Withdrawal, Substitution, and Modification of Bids	26.1 A Bidder may withdraw, substitute or modify its bid after it has been submitted at any time prior to the deadline for submission. 26.2 A bidder may withdraw, substitute or modify its bid by sending a written notice to UET, Mardan, duly signed by an authorized representative, including a power of attorney. The corresponding substitution or modification of the bid, must accompany the respective written notice. All notices must be submitted in the same manner as specified for submission of bids, by clearly marking them as "WITHDRAWAL" "SUBSTITUTION," or "MODIFICATION". 26.3 Bids requested to be withdrawn shall be returned unopened to the bidders, except if the bid is withdrawn after the bid has been opened.
27	Bid Submission Venue	27.1 Bids shall be submitted at the venue as mentioned in the BDS.
28	Bid Opening Date and Venue	28.1 Bids shall be opened on the date and venue as mentioned in the BDS.

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<tr><td>29</td><td>Bid Announcement</td><td>29.1 Public announcement of bids shall be made after being opened by authorized officials of UET, Mardan in presence of participating bidders or their deputed representative who like to be present at the designated date, time & venue.</td></tr>
<tr><td colspan="3">7. Bids Evaluation Criteria</td></tr>
<tr><td>30</td><td>Confidentiality</td><td>30.1 Information relating to the examination, evaluation, and comparison of bids, and the recommendation of contract award, shall not be disclosed to bidders, even after publication of the contract award.
30.2 Any effort by a bidder to influence UET, Mardan in the examination, evaluation and comparison of the Bids or contract award decisions may, at institute’s decision, result in the rejection of its Bid and may subsequently be subject to consequences.</td></tr>
<tr><td>31</td><td>Preliminary Examination</td><td>31.1 UET, Mardan shall examine the bids to determine whether they are complete with respect to minimum documentary requirements, whether the documents have been properly signed, and whether the bids are generally in order, among other indicators that may be used at this stage. The institute reserves the right to reject any bid at this stage. The documents shall be examined preliminary as per following check list: -
<table>
<tr><th>S.No</th><th>Description</th><th>Compliance (yes/No)</th></tr>
<tr><td>01</td><td>Covering Letter/Application (on the letter head of the firm)</td><td></td></tr>
<tr><td>02</td><td>Receipt of tender fee attached</td><td></td></tr>
<tr><td>03</td><td>Profile of the Firm: Complete Introduction+ Type of Business + Offices & Services in Pakistan, Professional Staff (Administrative & Technical) + Verifiable Office addresses, Telephone & Cell No., E-mail address for Contacts.</td><td></td></tr>
<tr><td>04</td><td>Proof of Active Taxpayer.</td><td></td></tr>
<tr><td>05</td><td>Sales Tax Registration</td><td></td></tr>
<tr><td>06</td><td>National/Income Tax Certificate</td><td></td></tr>
<tr><td>07</td><td>Professional Tax Certificate, if any</td><td></td></tr>
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			08	Earnest Money @2% of the quoted bid value along with financial bid. (The bidder shall submit an affidavit on stamp paper with the technical bid that the "requisite bid security of 2% of the total bid value attached in the sealed envelope of financial bid" (Mandatory)	
			09	The documents dully signed and stamped(Mandatory)	
			10	Affidavits on Judicial stamp paper attested by Oath Commissioner that, the Service Providing Firm has never been blacklisted by private, Govt., Semi Govt. and Autonomous Body) (Mandatory)	
			11	To furnish Power of attorney for the authorized person	
			12	Financial Proposal as per Annexure-III	
			13	Agreement (For successful bidder only) as per Annexure-IV	
		The preliminary examination will be conducted on a responsive and non-responsive basis. Only bids which have been rated "responsive" in the preliminary examination of bids shall be considered for further evaluation.			
32	**Technical Bid Evaluation**	32.1 Technical bids will be scrutinized, examined and evaluated on following setout evaluation standard:			
		S #		**Mandatory Requirement**	**Scale of Evaluation**
		1		Technical Compliance: Provide Technical Compliance Sheet (Form F)	30 Marks
		2		Literature in support of specifications	05 Marks
		3		Country of Origin Country of origin. 20 Marks for USA, UK and Japan, 18 marks for Canada and EU, 15 Marks for Turkey, 12 Marks for Malaysia and Thailand.	20 Marks
		4		Reputed universities experience where particular equipment's delivered (attach letter of performance)	10 Marks
		5		Guarantee / Warranty (Minimum 1 year or more)	03 Marks
		6		Provision of after sales services	02 Marks

				TOTAL	**70 Marks**
	* Minimum 60 percent marks (42) in technical for qualification.				
33	Financial Bid Evaluation	33.1 After evaluation/marking of bidders in technical evaluation process, Financial bids of only technically qualified bidders will be opened and preliminary scrutinized for following necessary parameters.			
		S #	Parameter	Mandatory Requirement	
		1	Bid Prices & Entries	Each offered item to be entered separately (with unit & total cost preferably) inclusive of cost of equipment air freight (Islamabad) and sea freight (Karachi) and transportation charges up to UET, Mardan. duties/ taxes of shipment, installation/testing/commissioning /operational training etc. (as and where applicable) will also be responsibility of the bidder/supplier. However, installation/testing/ commissioning/ operational training etc. (as and where applicable) will also be responsibility of the bidder/supplier. The bid must be made on company letter head either by foreign principal/manufacturer of quoted items or the authorized agent/dealer/ bidder in Pakistan himself (duly signed and stamped beneath by the bidder firm/company or authorized person). **(Quoting prices in C&F are mandatory. Otherwise quotations will be rejected).**	
		2	Bid Validity	90 Days from the date of opening financial tenders.	
		3	Amount of Earnest money	2% of total bid amount	
		4	Form of Earnest Money	CDR from the scheduled bank in favor of the UET, Mardan, shall be attached by the bidder	
		5	Registration of Firm	NTN & GST Registration Certificates shall be attached by the bidder.	
After initial scrutiny of above factors of financial bids, comparative statement of prices will be prepared. The lowest bid will get highest marks which are 30 and subsequently higher bids will get proportionally less marks.					
34	Due diligence	30.1 UET, Mardan reserves the right to undertake a due diligence exercise, aimed at determining to its satisfaction, the validity of the information provided by the bidder. Such exercise shall be fully documented and may include, but need not be limited to, all or any combination of the following: a) Verification of accuracy, correctness and authenticity of information provided by the Bidder;			

		b) Validation of extent of compliance to the ITB requirements and evaluation criteria based on what has so far been found by the evaluation team; c) Inquiry and reference checking with Government entities with jurisdiction on the bidder, or with previous clients, or any other entity that may have done business with the bidder; d) Inquiry and reference checking with previous clients on the performance on on-going or completed contracts, including physical inspections of previous works, as deemed necessary; e) Physical inspection of the bidder's offices, branches or other places where business transpires, with or without notice to the Bidder; f) Other means that institute may deem appropriate, at any stage within the selection process, prior to declaring the bidder as qualified.
35	Clarification of Bids	35.1 To assist in the examination, evaluation and comparison of bids UET, Mardan may, at its discretion, request any bidder for a clarification of its bid. 35.2 UET, Mardan 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, except to provide clarification, and confirm the correction of any arithmetic errors discovered by institute in the evaluation of the bids in accordance with the ITB. 35.3 Any unsolicited clarification submitted by a bidder in respect to its bid, which is not a response to a request by UET, Mardan, may not be considered during the review and evaluation of the bids.
36	Responsiveness of Bid	36.1 UET, Mardan determination of a bid's responsiveness will be based on the contents of the bid itself. A substantially responsive bid is one that conforms to all the terms, conditions, specifications and other requirements of the ITB without material deviation, reservation, or omission. 36.2 If a bid is not substantially responsive, it may be rejected by UET, Mardan, and may not subsequently be made responsive by the bidder by correction of the material deviation, reservation, or omission.
37	Right to Accept, Reject, Any or All Bids	37.1 UET, Mardan reserves the right to accept or reject any proposal in response to the ITB, to render any or all of the proposals as non-responsive, and to reject all proposals in response to the ITB at any time prior to award of contract, while assigning the reason(s) thereof.

38	Nonconformities, Reparable Errors and Omissions	38.1 Provided that a bid is substantially responsive, UET, Mardan may waive any nonconformities or omissions in the bid that, in the opinion of UET, Mardan, do not constitute a material deviation. 38.2 UET, Mardan may request the bidder to submit the necessary information or documentation, within a reasonable period, to rectify nonmaterial nonconformities or omissions in the bid related to documentation requirements. Such omission shall not be related to any aspect of the price. Failure of the bidder to comply with the request may result in the rejection of its bid. 38.3 For the Price Schedule that are submitted UET, Mardan shall check and correct arithmetical errors as follows: a) if there is a discrepancy between the unit price and the line item total that is obtained by multiplying the unit price by the quantity, the unit price shall prevail and the line item total shall be corrected, unless in the opinion of UET, Mardan there is an obvious misplacement of the decimal point in the unit price; in which case, the line item total as quoted shall govern and the unit price shall be corrected; b) if there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected; and c) if there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail. 38.4 If the bidder does not accept the correction of errors made by UET, Mardan, its bid shall be rejected.
39	Bidder Grievance	1. UET, Mardan grievance readdress procedure provides an opportunity for appeal to those persons or firms not awarded a contract through a competitive procurement process. In the event that a bidder believes that it was not treated fairly, the bidder may lodge a complaint to the Bidder Grievance Readdress Committee, UET, Mardan.
8. Award of Final Contract		
40	Evaluation	40.1 UET, Mardan will conduct the evaluation solely on the basis of response to this tender received from the firms. 40.2 Evaluation shall be undertaken in the following steps: a) Preliminary Examination including Technical Specifications and
41	Integrity Pact	41.1 Bidders will also be required to submit a signed Integrity Pact on a stamp paper of appropriate value as part of their response. The text of Integrity Pact is available at Annexure-I.

42	Contract Signing	42.1 After the approval of any Work Award, a Contract Agreement on the stamp paper of appropriate value, shall be executed by UET, Mardan, with selected bidder within 15 days from the date of issuance of LoI (Letter of Intent)/ Work Order. 42.2 Failure to signing of Contract Agreement by the selected bidder firm with UET, Mardan within the stipulated time may constitute sufficient grounds for the annulment of the award, and forfeiture of the bid security, if any, and on which event, UET, Mardan may award the contract to the second highest rated bidder or call for new proposals.
43	Right to Vary quantity at the Time of Award	43.1 At the time of award of Contract, UET, Mardan reserves the right to vary the quantity of goods without any change in the unit price or other terms and conditions.
44	Sample draft Contract	44.1 A sample draft contract to be signed, containing applicable general terms and conditions can be found at Annexure – II.
45	Performance Security	45.1 A performance security shall be provided in the amount specified in BDS, well prior to the contract signing by both parties. Where a performance security is required, the receipt of the performance security by UET, Mardan shall be a condition for rendering the contract effective. The amount of performance security, as a percentage of the Contract Price, shall be 10% of the total contract value which shall be retained by the Purchaser for the warranty period.
46	Bank Guarantee for Advanced Payment	46.1 No Payment will be released in advance.
47	Liquidated Damages	47.1 UET, Mardan shall apply liquidated damages for the damages and/ or risks caused to UET, Mardan resulting from the contractor's delays or breach of its obligations as per contract. a) In case of delay, the Procurement Committee, UET, Mardan reserves the right to impose a penalty not exceeding 10% of the total amount of the contract Value at the rate as referred in the sample contract at Annexure – II. b) If the contractor fails to complete work as per UET, Mardan requirement, the Vice Chancellor on the recommendation of Procurement Committee, UET, Mardan reserves the right to reject contract, altogether or impose a penalty not exceeding 50% of the total amount of the contract. c) If the contractor fails to provide supplies/ services as per UET, Mardan requirements, UET, Mardan may forfeit his earnest money as well as Performance Security, and the work will be done at the risk and cost of contractor. d) In case of any dispute, matter will be referred to Vice Chancellor UET, Mardan, whose decision will be binding on both the parties.

48	Force Majeure	48.1 "Force Majeure" means an event which is beyond the reasonable control of a party and which makes a party's performance of its obligations under the Purchase Order/ Work Order/ Contract impossible or so impractical as to be considered impossible under the circumstances, and includes, but is not limited to, War, Riots, Storm, Flood or other industrial actions (except where such strikes, Lockouts or other industrial issues are within the power of the party Invoking Force Majeure), confiscation or any other action by Government agencies. In all disputes between the parties as to matters arising pursuant to this Purchase Order/ Work Order/ Contract, the dispute will be referred to Vice Chancellor, UET, Mardan whose decision will be final.
	Delivery of Goods	49.1 **Contractor will be required to deliver the goods as per the Delivery Schedule referred in BDS without claiming any additional cost to the UET, Mardan at the designated site(s) and in quantities as referred in the contract.**
50	Payment Provisions	50.1 Payment will be made only upon UET, Mardan acceptance of the goods and/ or services performed. The terms of payment shall be within thirty (30) days, after receipt of invoice, and certification of acceptance of goods and/or services issued by the relevant authority, UET, Mardan. Payment will be affected by bank transfer in the currency of the contract. 50.2 The contractor shall provide all necessary supporting documents along with GST invoice, delivery challan and any other relevant documents as required by UET, Mardan.

3. Bid Data Sheet

The following data for the goods and/ or services to be procured shall complement, supplement, or amend the provisions in the Invitation to bid. In the case of a conflict between the Instructions to Bidders, the Bid Data Sheet, and other annexures or references attached to the Bid Data Sheet, the provisions in the Bid Data Sheet shall prevail**.**

BDS No.	Data	Specific Instructions / Requirements
1	Name of Procuring Agency	University of Engineering and Technology, Mardan, KPK
2	Loan or credit	N/A
3	Name of Project.	Establishment and Upgrading of Core Engineering Departments at UET Mardan
4	Name of Contract.	Supply of Labs equipment for Civil engineering department under the project titled "establishment and upgrading of core engineering departments at UET, Mardan"
5	Procuring Agency's address	University of Engineering and Technology, Mardan, Charsadda Road, Mardan
6	Language of the bid.	English
7	Submitting Bids for Parts or subparts of the Schedule of Requirements (partial bids)	The Purchase Committee shall consider the bids item-wise.
8	Bid Validity Period	90 days
9	Bid Security/ Earnest Money (Refundable)	Required in the amount of: 2% of the bid value of each item (separately) against which the bidder is participating. Acceptable Forms of Bid Security: Denominated in Pak Rupees duly issued by a Pakistani Bank or branch of a Foreign Bank, in the form of CDR in favor of the Treasurer, UET, Mardan. An affidavit, without disclosing the amount, stating that "The requisite Bid Security of 2% of the total bid has been placed separately in the sealed envelope of financial bid" on stamp paper shall be placed in the technical proposal. Whereas, 2% bid security in the shape of CDR shall be placed in the financial proposal.
10	Liquidated Damages	Will be imposed as percentage of contract price per day of delay: as referred in Draft Contract Sample in Annexure – II.
11	Performance Security	Within 20-days of issuance of Purchase Order and well prior to the signing of contract, as 10% of the contract value for the duration of Warranty period as referred.
12	Currency of Bid	Relevant Currency

13	Deadline for submitting requests for clarifications/ questions	5 days before the submission deadline.
14	Contact Details for submitting clarifications/ questions	Procurement Officer, UET, Mardan
15	Manner of Disseminating Supplemental Information to the ITB and responses/ clarifications to queries	Procurement Officer, UET, Mardan
16	Deadline for Submission	November 5, 2021 at 11:00 AM
17	Number of Set(s) of Bid	Bid Proposal(s) - One (01) Original - One (01) Copy Note: Bidders are required to prepare and submit the Proposal(s) against the individual item.
18	Allowable Manner of Submitting Bids	Courier/By hand delivery.
19	Bid Submission Address	Procurement Officer, Purchase Section, UET, Mardan:
20	Electronic submission (email) requirements	Not Allowed
21	Date, time and venue for opening of bid	Date and Time: 5th November, 2021, at 11:30 am Venue: Conference Room, UET Mardan
22	Evaluation Method	Eligible and qualified bids of bids as per technical and financial evaluation criteria as stipulated in this ITB.
23	Evaluation Method for the Award of Contract	As per the technical and financial evaluation mentioned in ITB 33 & 34, respectively.
24	Expected date for commencement of Contract	As per supply Order
25	Maximum expected duration of Contract	As per Supply Order
26	UET, Mardan will award the contract to:	Bidder on individual item base.
27	Type and Contract Terms and conditions that will apply	General Terms and Conditions for Contracts for Goods and/ or Services as per Sample at Annexure – II.
28	Delivery, Installation and Testing/Training	As per Supply Order

4. Evaluation Criteria

Preliminary Examination Criteria

Bids will be examined to determine whether they are complete and submitted in accordance with ITB requirements as per below criteria on a Yes/ No basis:

- Appropriate signatures
- Power of Attorney
- Minimum Bid documents provided
- Bid Validity
- Bid Security submitted as per ITB requirements with compliant validity period

Minimum Eligibility Criteria

Eligibility will be evaluated on a Pass/ Fail basis as per ITB laid down criteria. If the Bid is submitted as a Joint Venture, there should be no more than two (02) companies in the Joint Venture and each company should meet the minimum criteria, unless otherwise specified.

Eligibility			
S #	**Subject**	**Criteria**	**Reference/Returnable Form(s)**
1.	Bidder's status	Participate as: ▪ Individual company ▪ JV/Consortium	Form B: Joint Venture/ consortium/ association Information Form
2.	Legal Status	Bidder is a legally registered entity in Pakistan. Bidder is/ are also registered with FBR for Income Tax and Sales Tax	Form C: Bidder Information Form
3.	Location of Offices	Bidder (Lead Bidder) has either declared office(s) in Islamabad/ Rawalpindi/ Peshawar. Alternately, if the Contract is awarded, the Bidder may establish office in either of these cities (Optional).	Form C: Bidder Information Form
4.	Principal's Authorization	Bidder or at least one member of JV/ Consortium/ Association must be Authorized Partner/ Reseller/ Dealer for the supply and services of quoted goods/ services.	Form C: Bidder Information Form
5.	Company in Operation	Bidder (Lead Bidder) is in operation for at least Five (05) years.	Form C: Bidder Information Form
6.	Financial Strength	Average annual turnover over last 3 years no less than Rs. 10 million (For JV/ Consortium/ Association, all Parties cumulatively should meet requirement).	Form C: Bidder Information Form

7.	Relevant Experience	Minimum No. of Projects of similar nature, value, and complexity in last 3 years Two (02) projects (For JV/Consortium/Association, all Parties cumulatively should meet requirement).	Form C: Bidder Information Form
8.	Eligibility	Bidder(s) is not suspended, nor debarred, nor otherwise identified as ineligible by any Government/ Semi-government/ Autonomous organization in Pakistan, in accordance with ITB clause. Non-Blacklisting certificate will be required.	Form A: Bid Submission Form
9.	Bankruptcy	Bidder(s) has not declared bankruptcy, is not involved in bankruptcy or receivership proceedings, and there is no judgment or pending legal action against the vendor that could impair its operations in the foreseeable future.	Form A: Bid Submission Form

5. Technical Specification of Equipment

1. HYDRAULICS LAB			
1.	**Hydraulic Bench** Electronic flow meter and digital display for accurate measurements and quicker experiments • Digital flow display • 0.001 $L.s^{-1}$ and 0.1 $L.min^{-1}$ resolution • Made of lightweight fibreglass for strength, easier transport and long life • Electronic flow meter • Fiberglass construction • Lockable wheels for mobility with stability • Flat top to hold experiments • Self-contained with recirculating water circuit – needs no external water supply and saves mains water • Pump includes thermal overload protection Designed as a work table on which you could install a big variety of didactic equipment in need of a input flow, guaranteeing a simple and practical use. Detailed Specs: Dimensions: 1250 mm long x 780 mm wide x 950 mm high and 50 kg (no water) Maximum flow : With no experiment module fitted: 50 litres/minute (220V) 47 litres/minute (110V) Maximum pressure: 450 mbar at working surface height Characteristics of the pump: Maximum manometric height: 23 m.c.a. Flow: 10 / 160 l/min. Manometric height: 21 / 10 m.c.a. Consumed power: 750 W (1 HP). Maximum power: 950 W. Turning speed: upto 2900 r.p.m. Tanks: Storage capacity in lower tank: 250 liters. Measurement of levels by vertical manometers and calibrated rules in liters. Upper calibration tanks: 0 to 40 liters. Electronic flow meter with display. Accessory included: Chronometer. Power supply: 230V/50Hz. Supplied with a comprehensive user guide Five-year warranty Manufactured in accordance with the latest European Union directives ISO9001 certified manufacturer Accessories (included):	2	UK, USA, EU

	Water additive and datasheet All necessary pipes and pipe clips		
2.	**Current meter cup type** Measure stream-flow velocities from 0.1 to 25 feet per second (0.03 to 7.6 meters per second), bucket wheel has six conical shaped cups, is five inches (12.7 cm) in diameter. Wading rod, top-set, 1.2 m. Digital counter timer.	2	UK, EU
3.	**a. <u>Multipurpose flow channel (Sediment Transport) (Version 2.5m)</u>** An 80 mm, wide 2.5 m long flow and sediment transport channel with a starter kit of models and instruments. It provides students with the ability to study the varying effects of sediment transport, bed form dynamics and fluid flow around weirs and other objects in an open channel. • Toughened glass channel walls • Digital flow meter: 10 to 200 liters per minute • Pump flow rate: 0 to 180 liters per minute • Digital inclinometer: High resolution of 0.05 degrees. • Includes four models with the flume for immediate experimentation potential • Digital flow meter for quick and accurate measurements • Transparent sides for clear visibility, ideal for group demonstrations • Stainless-steel beam and toughened glass • Built-in, recirculating water supply for convenient laboratory use • Investigations in fixed and smooth bed forms. • Study of Mechanics of sediment transport • Local (bridge) scour experiments, to understand scour holes and effects on the integrity of a structure. • Two sluice gates for investigations into hydraulic jump, specific energy and the determination of channel walls, provides long-lasting use with discharge coefficient. • Study of sedimentation process. • Transparent, inclinable flow channel through which water can be recirculated by a pump over a mobile bed to demonstrate the whole range of bed forms from incipient particle movement to bed wash-out. Anodized aluminum structure and supports in painted steel. Transparent, inclinable flow channel through which water can be recirculated by a pump over a mobile bed to demonstrate the whole range of bed forms from incipient particle movement to bed wash-out. Channel of rectangular section with transparent walls. Channel section: 80 mm, length: 2.5 m. The channel is assembled on two supports, with a system to control the inclination of the channel. Channel slope: adjustable between 0 % – 10 %. The unit is self-contained and it can be installed with easiness, and it has a complete range of profiles. Inlet tank (capacity: 38 l), with stilling of flow and with drain valve. Pipes. Diaphragm flow meter. Sediment filter in tank and inlet section. Manometric tubes panel. It is formed by two methacrylate tubes of 500 mm of length, with a graduated panel. Hand pump. The grain diameter of the sediment oscillates among 0.1 – 0.3 mm. **Accessories:** • Basic hydraulic feed system	1	USA, EU, UK, Canada, Japan

	• Broad and sharp-crested weir • Two sluice gates • Two instrument level gauges • Pitot tube • Sediment trap stainless steel • 50 kg each of two grades of sediment (graded sand), trowel and rake • Pitot tube and manometer board. • Broad and thin crested weirs. (One broad weir and 2 thin weirs) • Vertical flat gate and radial gate. • Syphon spillway. • Dam's spillway (3 different models) and flow splitters • Venturi flume. • Air regulated syphon. • False floor sections • Artificial roughened bed (3 different models). • Single bridge pier • Adjustable Undershot Weir • Level Gauge for Measurement of the Water Height (Hook and Point Gauge) • Sand distributor • Pitot tube and manometer board • Broad and thin crested weirs • Syphon spillway • Air regulated syphon • Crump weir • Vertical Flat Gate and Radial Gate • Culvert fitting • Artificial roughened bed (3 different models) • False floor sections Manuals: This unit is supplied with the following manuals: Required Services, Assembly and Installation, Starting-up, Safety, Maintenance & Practices Manuals.		
	b. <u>Data Acquisition system for Multipurpose flow channel (2.5m) having specifications:</u> Core i7 10th generation, 16 GB RAM, 256 GB SSD, 1 TB HDD. Motherboard integrated with Wi-Fi device. 24'' LED, keyboard and mouse		
4.	**<u>Multi-Purpose flow channel (7.5 m)</u>** basic principles of open-channel flow experimental flume with experimental section, inlet and outlet element and closed water circuit length of the experimental section 7.5m possible with additional extension elements smoothly adjustable inclination of the experimental section	1	USA, EU, UK

	experimental section with 20 evenly spaced threaded holes on the bottom for installing models or for water level measurement using pressure side walls of the experimental section are made of tempered glass for excellent observation of the experiments experimental section with guide rails for the optionally available instrument carrier all surfaces in contact with water are made of corrosion-resistant materials: stainless steel, glass reinforced plastic flow-optimized inlet element for low-turbulence entry into the experimental section closed water circuit with 2 water tanks, pump, electromagnetic flow sensor and flow control models from all fields of hydraulic engineering available as accessories flume control with PLC via touch screen integrated router for operation and control via an end device and for screen mirroring: mirroring of the user interface on up to 5 end devices data acquisition via PLC on internal memory, access to stored measured values via WLAN with integrated router/ LAN connection to customer's own network Software for data acquisition via LAN under Windows 8.1, 10 Experimental section: possible length: 7.5m flow cross-section BxH: 409x500mm inclination adjustment: -0.5…+2.5% 3 tanks, made of GRP, 1100L each Pump: power consumption: 7,5kW Max. flow rate: 130m3/h Max. head: 30m speed: 2800min-1 **Measuring ranges:** flow rate: 5.4…130m3/h 400V, 50Hz, 3 phases, 400V, 60Hz, 3 phases 230V, 60Hz, 3 phases, Empty weight: approx. 2100kg together with available models • uniform and non-uniform discharge flow formulae • flow transition (hydraulic jump) • energy dissipation (hydraulic jump, stilling basin) • flow over control structures: weirs (sharp-crested, broad-crested, ogee-crested) • flow over control structures: discharge under gates • flow-measuring flumes • local losses due to obstacles • transient flow: waves • vibrating piles • sediment transport • screen mirroring: mirroring of the user interface on end devices menu navigation independent of the user interface shown on the touch screen		

	• different user levels available on the end device: for observing the experiments or for operation and control • plant control using an integrated PLC • integrated router for operation and control via an end device and for screen mirroring on additional end devices: PC, tablet, smartphone • models from all fields of hydraulic engineering available as accessories **Control Structures** • Sluice gate • Radial gate • Set of plate weirs, four types • Broad-crested weir • Crump weir • Siphon weir • Rake • Ogee-crested weir with pressure measurement • Ogee-crested weir with two weir outlets • Elements for energy dissipation • Siphon spillway • Air regulated siphon spillway • Hydraulic Jump model **Change in cross-section** • Sill • Culvert • Set of piers, seven profiles • Flume bottom with pebble stones • Flow-measuring flumes • Venturi flume • Parshall flume • Trapezoidal flume **Other experiments** • Vibrating piles • Closed sediment circuit • Sediment trap • Sediment feeder • Wave generator • Set of beaches **Measuring instruments** • Level gauge • Digital level gauge • Velocity meter • Pitot static tube • Ten tube manometers • Electronic pressure measurement • Instrument carrier • PIV-System • Instrument carrier for PIV system • Glass cut-out for PIV system **Other accessories** • Electrical inclination adjustment		

	• Extension element of the experimental flume Water tank Gallery • Extension element of the gallery		
5.	**IMPACT OF A JET** This equipment is designed to prove the theoretical expressions that determine the force applied by a jet stream on different types of impact plates. The equipment, operating on the hydraulic bench, shows to perfection the impact of the jet stream on the target plate under study, thanks to its transparent case. The bubble level allows the correct leveling of the equipment for improving the results accuracy. Fast and simple replacement of target plates. **Specification** • investigation of jet forces and demonstration of the principle of linear momentum • tank made of transparent material for observing the experiments • nozzle for generating the water jet • jet force can be adjusted via flow rate • four different shaped deflectors: flat surface, oblique surface, semi-circular surface, conical surface • measurement of the jet forces via the weight-loaded scale • flow rate determined by base module • water supply using base module or via laboratory supply **Technical data** Tank - Ø inner: 200mm - height: 340mm Nozzle - Ø 10mm Deflector - flat surface: 90° - oblique surface: 45°/135° - semi-circular surface: 180° - conical surface: 135° Weights - 4x 0,2N - 3x 0,3N - 2x 1N - 2x 2N - 2x 5N LxWxH: 400x400x880mm **Weight:** approx. 23kg	4	Malaysia, Thailand, UK, EU, USA

6.	**Dead Weight Calibrator** calibration unit with dead-weight piston manometer and hand-operated spindle electronic pressure sensor with ceramic measuring cell, integrated amplifier and voltage output digital display for output signal additional pressure sensor as cutaway model set of weights transmission medium: hydraulic oil process schematic on front panel Pressure sensor: measuring range: 0…2.5bar supply: 24VDC output signal: 0…10VDC Piston manometer with pressure piston: diameter: 12mm number of weights: 5 pressure graduations: 0,5bar 1,0bar 1,5bar 2,0bar 2,5bar Digital display: 4 1/2 digits Hydraulic oil 230V, 50Hz, 1 phase 230V, 60Hz, 1 phase 120V, 60Hz, 1 phase UL/CSA optional	3	Malaysia, Thailand, UK, EU, USA
7.	**Hydrostatic Pressure Apparatus** This equipment is designed for the study of the pressure exerted by a fluid on a surface submerged in it. The shape of the sector or quadrant that is submerged into the water ensures that the only pressure exerted by the water on its surface goes to the lower rectangular vertical surface. During the experiment, a counterbalance is placed. A ruler shows the water height from the lower point of the submerged rectangular face on which the phenomenon is studied. To avoid any friction that deflects the measurement, the entire quadrant system and its lever arm (where we place the counterbalance weights) are supported on bearings with glass spheres, which clearly increase the accuracy of the test. Objectives: Studying the relationship between hydrostatic force and head of water for a fully and partially submerged vertical and inclined plane. Comparison of actual and theoretical hydrostatic force on a fully or partially submerged plane for any given head of water. Theoretical calculation of the position of centre of pressure on a fully or partially submerged plane Dimensions: 460 mm wide x 400 mm high x 160 mm front to back and 4 kg (plus additional 1 kg of weights and 500 mL of water colouring)	4	Malaysia, Thailand, UK, EU, USA

	Counterweights: Set of weights: 1x10 g, 2x20 g, 1x50 g, 1x100 g, 2x200 g, 1x500 g, 1x1000 g. Constructive details: Bubble level incorporated. Bearings with glass spheres. Height adjustable legs with flat screwdriver. Water height indicator rule from the bottom edge of the study surface.		
8.	**Stability of Floating Bodies** Objectives: • investigating the stability of a floating body and determining the metacenter • transparent floating body with rectangular frame cross-section • one horizontally movable clamped weight for adjusting the heel • one vertically movable clamped weight for adjusting the center of gravity • clinometer with scale for displaying the heel • other floating bodies with different shapes of frame available as accessories Specifications: Floating body LxWxH: 300x130x190mm mast height: 400mm Horizontal scale: 180mm Vertical scale: 400mm Height scale of the floating body: 120mm Clinometer scale: ±30° Weights floating body without clamped weights: approx. 2,7kg vertical clamped weight: 575g horizontal clamped weight: 196g Tank for water: 50L LxWxH: 660x450x220mm (tank) Weight: approx. 6kg Floating bodies for main equipment with Laboratory trolley	3	Malaysia, Thailand, UK, EU, USA
9.	**Bernoulli's Theorem Demonstration** The machine has a multi-tube manometer in which we can read simultaneously the different pressures along the canal. The connection to hydraulics bench is performed with a threaded link standing without tools and the connections are self-sealants, fast connections that keep the water out when you disconnect. Bores: Main pipe: Ø internal = 28.2 mm. Ø external = 32 mm. Gauges: Multi-manometer 7 columns of water, measuring range 600 water drop. Learning objectives: Demonstration of Bernoulli´s equation along a venturi. Calculating the pressure drop of a venturi. Study of static, dynamic and full pressure.	3	Malaysia, Thailand, UK, EU, USA

10.	**Osborne Reynolds' Demonstration** Study, visualization and determination of the Reynolds number of a laminar regime. Study, visualization and determination of the Reynolds number of a transition regime. Study, visualization and determination of the Reynolds number of a turbulent flow. Bores: Calibrated glass tube: Internal diameter: 12 mm. External diameter: 17 mm. Length: 700 mm. Ink: Acrylic ink, diluted in water: 20% ink. Elements: Dye deposit 0.5 liter. Dye regulating valve. Main tank 2.3 liter aprox. Overflow. Glass spheres. Out of clean water. Calibrated glass tube. Flow control valve. Bubble level. Out of water in glass tube. Connection of water inlet. 1 Bottle of acrylic paint. 3 Ink dispensing needles.	4	Malaysia, Thailand, UK, EU, USA
11.	**Methods Of Flow Measurements** The goal of this equipment is the study and comparison of some of the different types of existing flow meters. The equipment is intended as a basic, so incorporating more didactic meters and representative flow. These flow-meters are a venturi, a rotameter and a diaphragm placed in series will allow direct comparison of results. Through the realization of some of the practices of this team has failed to understand the behavior of fluids against certain laws of statics, dynamics, and thermodynamics. They may implement general principles such as the conservation of mass, or energy in a simplified and easily. Pressure readings are displayed on a multi-tube manometer 8 outlets through which values are extracted on 8 strategic points of the equipment. Bores: Ø internal main pipe = 32 mm, Ø external = 40 mm. Manometer: Water column gauge, measuring range 440 mm ca 8 gauge jacks. Diaphragm: Diameter orifice plate Ø 20 mm. Rota-meter: Measuring range 150-1500 l/min. Venturi tube: Ø 15 mm diameter throat. Ø 32 mm diameter upstream. 21st upstream taper. 14th downstream taper.	4	Malaysia, Thailand, UK, EU, USA

	Learning objectives: Calibration of flow measuring elements from a flow pattern: rotameter, venturi tube, diaphragm. Comparison between the flow rate using the following elements: Rotameter, venturi tube, diaphragm. Calculating the secondary load loss of the following elements: rotameter, venturi tube, diaphragm.		
12.	**Flow Through Orifices** Equipment has been designed for the study of everything related to the phenomenon of contraction that occurs when a jet of fluid passes through an orifice. It has been designed with special emphasis on its didactic use and that is why the equipment has three nozzles whose geometry differs between them, being able to perform tests in different conditions, facilitating to the student the compression of the phenomenon that is produced. In order to perform the test successfully, the equipment has a Pitot tube through which it is possible to measure the velocity of the fluid at the outlet. Equipment has a measuring instrument of the jet diameter, which can be regulated, which allows the measurement of the diameter of the jet of the fluid to the exit obtaining results of a greater accuracy. Equipment has a water column manometer through which the measurements of the water level in the tank can be made and the height of the water jet speed. Tank: Cylinder tank of Ø 200 x 430 mm. Maximum height of water 410 mm. Accessories: Output hole where the 30 mm. Nozzle Ø 10 mm of straight output. Nozzle Ø 10 mm of 45º output. Nozzle Ø 10 mm of diaphragm output.	2	Malaysia, Thailand, UK, EU, USA
13.	**a. Francis Turbine** Equipment is designed for the study and displays both the behavior and the characteristics of a Francis turbine. Turbine housing is transparent so you can see how the water flow turns the wheel. In this case, besides the rotation of the wheel, the movement of the vanes guide the distributor with which the flow regulation turbine inlet is achieved is also observed. Braking system with electric brake allows working at different speeds in a convenient and simple way. The rotational speed of the engine control by a rheostat included in the top control module, where, in addition, through the various indicators of the system, you can display all variables that come into play in transforming energy. Regulating valve has water inlet, which allows working with different flows as required. Pressure turbine inlet is read in a vacuum gauge arranged on the structure.	1	EU, USA, UK

	b. <u>Data Acquisition system for Multipurpose flow channel (2.5m) having specifications:</u> Core i7 10th generation, 16 GB RAM, 256 GB SSD, 1 TB HDD. Motherboard integrated with Wi-Fi device. 24'' LED, keyboard and mouse		
14.	**<u>Misc. Lab tools</u>** **a.** Including LVDTs (10, 25, 50 mm travel), vernier calipers (digital and manual), strain gauges (10, 20, 30, 60, 120 mm base length), 8 channel data-logger, tool kit, glass beakers (25, 50, 100, 250, 600 and 1000 ml), cylindrical measures with stopper (25, 50, 100, 250, 500 and 1000 ml), wash bottles (250 and 500 ml), sand bath, 7 liters. Stop watches (05 No.) **b.** Tool box for hydraulics lab **c. Licensed Arc GIS® Desktop 10.7 (Advanced user perpetual license)** **d. Licensed AutoCAD® 2022 (3 years premium Subscription)** **e. Licensed Autodesk Civil 3D® (3 years Premium subscription)** Civil 3D® civil engineering design software supports BIM (Building Information Modeling) with integrated features to improve drafting, design, and construction documentation.	1	Malaysia, Thailand, UK, USA, EU

2. PUBLIC HEALTH ENGINEERING LAB			
1.	**a. <u>Portable multi- Meter</u>** Shock-proof, water-tight casing, Automatic or manual temperature compensation. Measurements: a. pH b. Conductivity c. Ion concentration d. Oxidation Reduction Potential e. Dissolved Oxygen f. TDS Ranges (resolution) pH –2.000 to 19.999 (0.001) with accuracy of 0.002. With a measuring range for conductivity varying from 0.000 uS/cm to 2000 mS/cm, Plastic bodied combination pH/°C electrode, fixed one meter connection cable with DIN plug, buffer solutions, sample beaker, batteries, instructions and carrying case.	5	USA, UK, EU

	Portable multi. Meter **pH / ION / DO_2** 1.8M Cable 1 Oxygen, Basic Kit with probes and 1.8M cables, strap, 4 X 1.5V AA batteries, standard manuals are provided to perform tests.		
	b. Data Acquisition system for Portable Waterproof Multi-Meter Core i7 10th generation, 16 GB RAM, 256 GB SSD, 1 TB HDD. Motherboard integrated with Wi-Fi device. 24'' LED, keyboard and mouse		
2.	**Battery Dry Alkaline Manganese** a. Set of 5, 45mAh (0.374inch) b. Set of 5, 150mAh (0.457inch)	10	Malaysia, Thailand, Germany
3.	**a. VIS spectral photometer with RFID* technology** Data Logger: 5000 data points (result, date, time, sample-ID, user-ID) Display: 7 inch WVGA color touch Enclosure Rating: IP20 with closed lid Interfaces: USB type A (2), USB type B, Ethernet, RFID module Manual Languages : en Operating Conditions: 10 - 40 °C, max. 80% relative humidity (non-condensing) Operating Mode: Transmittance (%), absorbance and concentration (wavelength, time) Optical System: Reference beam, spectral Photometric Accuracy: 5 mAbs @ 0.0 - 0.5 Abs <1% @ 0.5 - 2.0 Abs @ 546 nm	2	USA, EU, UK, Japan

	Photometric Linearity: 0.005 - 2 Abs ≤ 0.01 at > 2 Abs with neutral glass at 546 nm Photometric Measuring Range: ± 3 Abs Power Requirements: 100 - 240 V; 50/60 Hz Preprogrammed Methods: > 240 Region: US Sample Cell Compatibility: Rectangular: 10, 20, 30, 50 mm, 1inch; round: 13 mm, 16 mm, 1 inch 100 mm rectangular cell with additional adapter Scanning Speed: 900 nm/min (in 1 nm steps) Source Lamp: Tungsten (visible range), deuterium (UV range) Specific Technology: RFID for easy method update, sample ID and Certificate of Analysis Spectral Bandwidth: 2 nm Storage Conditions:- 25 to 60 °C / max. 80% relative humidity (non-condensing) Stray Light: KI-solution at 220 nm < 3.3 Abs/ < 0.05% User Interface Languages: bg, cn, cz, da, en, es, fr, gr, hr, hu, it, jp, kr, nl, pl, pt, ro, ru, sl, sl, sv, tr User Programs: 200 Wavelength Accuracy: ± 1 nm Wavelength Range: 190 - 1100 nm Wavelength Reproducibility: < 0.1 nm Wavelength Resolution: 0.1 nm Wavelength Selection: Automatic, based on method selection Weight:11 kg What's included: 1 x Power Cord (US, EU) 1x Universal-Adapter 1x Dust Cover Matched pair of 1 inch glass sample cells Printed multilingual basic user manual (en, fr, es, pt, zh, jp, ko)		

	b. Data Acquisition system for VIS spectral photometer with RFID* technology Core i7 10th generation, 16 GB RAM, 256 GB SSD, 1 TB HDD. Motherboard integrated with Wi-Fi device. 24'' LED, keyboard and mouse		
4.	**a. Turbidity Meter** Accuracy: Absorbance: ±0.01 Abs from 0 - 0.5 Abs at 455 nm, ±2% Abs from 0.5 - 1 Abs at 455 nm Transmittance: 2% T from 10 - 100% T at 455 nm Ratio on: ±2% of reading plus 0.01 NTU from 0 - 1000 NTU, ±5% of reading from 1000 - 4000 NTU ±10 % of reading from 4000 - 10000 NTU Ratio off: ±2% of reading plus 0.01 NTU from 0 - 40 NTU Air purge: Dry nitrogen or instrument grade air (ANSI MC 11.1, 1975) 0.05 L/s at 69 kPa (10 psig); 138 kPa (20 psig) max Hose barb connection for 1/8-inch tubing Certifications: CE, KC, RCM Communication: USB Compliance: EPA Data logging: 2000 total logs, includes reading log, verification log and calibration log Dimensions (H x W x D):153 mm x 395 mm x 305 mm Display: 17.8 mm colour touch screen Interface: 2 USB-A ports for USB flash drive, external printer, keyboard and barcode scanner Light source: Tungsten filament lamp Measurement method: Nephelometric Measuring range: NTU (Ratio on): 0 - 10000 auto decimal NTU (Ratio off): 0 - 40 EBC (Ratio on): 0 - 2450 auto decimal EBC (Ratio off): 0 - 9.8 Absorbance (auto range): 0 - 1.0	5	USA, EU, UK, Japan

	Transmittance (%): 1.0 - 100 Degree (mg /L): 1 - 100 Model: EPA standard Operating temperature range:0 - 40 °C Power requirements (Amps):3.4 A Power requirements (Hz):50/60 Hz Power requirements (Voltage):100 - 240 V AC Range:0 - 10000 NTU Reading modes: Single, continuous, Rapidly Settling Turbidity, signal averaging on or off, ratio on or off Region: Global Regulatory: Meets EPA Method 180.1 Repeatability: ±1% of reading or 0.01 NTU, whichever is greater (under reference conditions) Response time: Signal averaging off: 6.8 seconds / Signal averaging on: 14 seconds (when 10 measurements are used to calculate the average) Sample cell compatibility: Round cells 95 x 25 mm (3.74 x 1 in.) borosilicate glass with rubber-lined screw caps Note: Smaller sample cells (less than 25 mm) can be used when a cell adapter is used. Sample requirements :25 mm sample cell: 20 mL minimum 0 to 70 °C (32 to 158 °F) Source lamp: Tungsten Lamp Stabilization time: Ratio on: 30 minutes after start-up Ratio off: 60 minutes after start-up Storage conditions:- 20 - 60 °C Units: NTU, EBC, Abs (absorbance), %T (% transmittance) and mg/L Weight: 3.0 kg Turbidimeter, silicone oil, oiling cloth, USEPA filter assembly, 1-inch sample cells (30 mL) with caps (6x), Gelex secondary turbidity standardization kit, Stablcal calibration kit, power supply, power cord, dust cover.		

	b. Data Acquisition system for Turbidity meter Core i7 10th generation, 16 GB RAM, 256 GB SSD, 1 TB HDD. Motherboard integrated with Wi-Fi device. 24'' LED, keyboard and mouse		
5.	**BOD-Measurement-System** The sensor system is a 6-sample system which allows precise measurement of BOD, based on the manometric principle. Manometric respirometers relate oxygen uptake to the change in pressure caused by oxygen consumption, while maintaining a constant volume. Thanks to modern, integral pressure sensors, it is no longer necessary to use mercury for pressure measurement. **System comprises:** - Complete with 6 sensors, control unit and batteries - magnetic, inductive stirring system with power supply, 6 sample bottles - 6 adapter caps and 6 stirring bars, 1 volumetric flask, 157ml - 1 volumetric flask, 248ml, 1 x 50 ml bottle potassium hydroxide solution - 1 x 50 ml bottle nitrification inhibitor, 1 user manual Measuring principle: manometric, electronic pressure sensor Ranges: 0 to 40, 0 to 80, 0 to 200, 0 to 400, 0 to 800, 0 to 2000, 0 to 4000mg/l O2 User-selectable, between 1 and 28 days. Measurement period: Power supply: 3x1.5V alkaline batteries, size "C" (Sensor)	2	USA, EU, UK, Japan
6.	**Millipore Bacteriological Analysis kit** Test kit contains accessories for a. Biological activity reaction test • Slime forming bacteria test • Sulfate reducing bacteria test • Iron related bacteria test • Heterotrophic aerobic bacteria test b. Coliform, e-coli screening test • Total coliform/ e-coliform bacteria screening test • Total coliform bacteria screening test	5	USA, UK, EU, Japan
7.	**a. <u>Microscope with Eyepieces</u>:** Research stereo microscopic system Advanced Model	2	USA, EU, UK, Japan

	Observation Method Fluorescence (Blue/Green Excitations) ✓ Fluorescence (Ultraviolet Excitations) ✓ Simple Polarized Light ✓ Bright field ✓ Dark field ✓ Oblique Zoom Ratio (16.4) Magnification Indication (0.7, 0.8, 1, 1.25, 1.6, 2, 2.5, 3.2, 4, 5, 6.3, 8, 10, 11.5) Galilean Optical System Fluorescence illuminator: Hg Lamp, Xenon Lamp, Light Guide Illumination Load Capacity: 0-10.0kg/ 2.7–15.0kg/ 8.0–25.0kg Corse and fine focus available Coarse Handle Stroke:80 mm, 120 mm Coarse Handle Stroke per Rotation: 36.8 mm Fine Handle Stroke per Rotation: 0.77 mm Standard Type Revolving Nosepiece Observation tubes(trinocular, tilting trinocular, ergonomic long tilting trinocular) Tube inclination : 5-45 degree angle : 30 degree Interpupillary Distance Adjustment: 51–76 mm,52–76 mm,57–80 mm Dimensions: 268 (W) × 386 (D) × 413 (H) mm (Standard Set Configuration) Operating environment: Amb. Temperature : (0-40 degree C) Max. Relative Humidity: 30- 90 % Four Eyepieces : 22*, 16*,12.5*, 7* with diopter adjustment and reticle Objectives: WD (141mm, 70.5mm, 81mm, 60mm, 30mm, 20mm) Zoom variable magnification system with parallel optical axis Zoom drive system: Horizontal handle Click-stop for various zoom positions incorporated(Manual)		

	Ultra-Wide Zoom Ratio (16.4:1) and High-Resolution Advanced Fluorescence Observations 10x & 16x Magnification; 10x, 25x 40x working distance 10.8, 4,2 2.8 mm **b. <u>Data Acquisition system for Microscope with Eyepieces</u>:** Core i7 10th generation, 16 GB RAM, 256 GB SSD, 1 TB HDD. Motherboard integrated with Wi-Fi device. 24'' LED, keyboard and mouse		
8.	**Water Bath** Capacity: 26 liters, Temperature 99ºC MAX. Ambient + 5ºC TO 99ºC, Stainless Steel Tank, 26 Liters, with Polycarbonate Lid and base tray. For 230V 50HZ A.C. Lid for Polycarbonate Bath	2	USA, EU, UK, Japan
9.	**a. Incubator** Temperature 100ºC, Capacity: 200 liters Stainless Steel. FAN CON. Solid Door Power Supply 220-240V 50HZ Fan Convection, 4 Shelves, with Digital Controller and safety thermostat. **b. Incubator** Temperature +70ºC, Capacity: 53L, Power supply 230V 50/60HZ A.C.	1 1	USA, EU, UK, Japan
10.	**C.O.D Apparatus: Reactor Kit Safety shield etc.** i. COD tests Reagents ii. COD Colorimeter iii. Thermo reactor 24 vials 115 volts Display : Digital 12mm Red LED Control : Digital Electronic Temperature Controller Temp Range : Above ambient to 180° C or higher Temp Resolution : 0.1° C Heater Rating : 750 Watts Hole Size : 40mm Diameter x 80mm Depth Glass Tube : 38mm diameter, 06 no (2 x 3 rows) Sensor	2	USA, EU, UK, Japan

	Timer : Selectable 15, 30, 45, 60, 90 or 120 minutes with alarm Sample Volume : 20 ml Each Overall size : 21 x 12 x 11″ Net weight : 21 kilograms Provision for 15 samples. Fitted with a digital temperature controller having a timer for 2 hours and also a buzzer. Consists of a reaction vessel of 38-40mm. Supplied with 15 nos. glass reaction vessels. Fitted with 15 nos. air condensers Supplied complete with a stand which can accommodate 15 vessels. Can be operated on 230 volts, 50 Hz, and Single phase		
11.	**Portable Top Loading Autoclave** Aluminum, Capacity 14 liters, Chamber 280mm diameter x 230mm deep. With fittings as described and aluminum liner. Accepts, Electrically heated.	1	USA, EU, UK, Japan
12.	**Distilled water** Capacity 4 liters Diamond 4.5L/Hour, Power Supply 220-240V **A.C.** WITH 2 X 1.5KW Heating Elements, 220-240V A.C.	1	USA, EU, UK, Japan
13.	**Analytical Balances Electronic** Readability 210, Sensitivity 0.1 mg	2	USA, EU, UK, Japan
14.	**Oven** Maximum temperature 300°C, With PID controller incorporating a single ramp to set point facility and process timer. Capacity 27 liters,	2	USA, EU, UK, Japan
15.	**Miscellaneous glassware** a. Set of 4 Thermometers b. Set of 3 Iron stands c. Set of 3 Latex tubes d. Set of 3 Condenser tubes e. Set of 3 Horn tubes f. Set of 3 Conical flasks g. Set of 3 Beaker brush h. Set of 3 Plastic beaker 1000ml i. 1 Portable Toolbox along with all necessary accessories for PHE lab maintenance j. Set of 3 Funnels k. Set of 3 Water stop clip	1	USA, EU, UK, Japan

	l. Set of 3 Alcohol lamp 150ml m. Brushes /Bottle Brushes n. 5 sets of Conical Plastic POM joint clips o. Gas Washing Bottles p. Set of 5 Glass Stirring Rods q. Set of 5 Glass Stopper with Hollow tip r. Set of 5 Joint Clips, Metals s. Set of 5 Nessler Glass tubes cylinders t. Set of 5 Plastic PP Hexagonal stopper u. Set of 5 PP Screw thread v. Set of 5 Plastic hose straight nipple w. Set of 5 Glass weighing scoops 10 ml x. Set of 5 Glass Scintillation vials with crew caps y. Set of 5 Rubber crucible holders z. 3 sets of Volumetric burettes with stand and holders (10 ml, 25 ml, 50 ml) aa. 3 Lab Adjustable Micropipette (0.5-10ul, 10-100ul, 100-1000ul) bb. Glass Erlenmeyer flasks set (50ml, 150ml, 250 ml) cc. Glass graduated cylinders (10ml, 25ml, 50ml, 100ml, 250ml) dd. 20 pcs 35ml Glass Test Tubes 20 x 150mm with Cork Stoppers and Brush ee. Graduated Beakers (50ml,100ml, 250ml, 500ml) ff. 6 mm transparent plastic PVC food grade flexible pipe 8 m gg. 8 mm transparent plastic PVC food grade flexible pipe 8 m hh. 25 mm PVC flexible transparent pipe 10 m 38 mm PVC flexible transparent pipe 10 m		
16.	**BOD Bottle** Clear Glass with Hollow Glass Peg Stopper 500ml	10	USA, EU, UK, Japan
17.	**Reagent Bottle** Clear Glass with 29/32 PP Stopper 1 liter	10	USA, EU, UK, Japan
18.	**Portable water Proof pH meter** Digital pH meter with analytical sensors for conductivity, pH, ion concentration and dissolved oxygen, touchscreen display, USB port for data transfer, computer connection, standard solution for calibration, software for data analysis,	2	USA, EU, UK, Japan
19.	**Miscellaneous tools used in the lab** **a. ORACLE® Primavera P6 Enterprise Project Portfolio Management (Application User Licensed)** **b. Licensed CSI SAP 2000 V18 (Network/Cloud Basic License)**	1	
20.	**Miscellaneous chemicals** **S/No** | **Items** | **A/U** | **Qty** 20.01 | SulfaVer 4 Reagent Powder Pillows, pk/100 | Nos | 01	1	USA, EU, UK, Japan

20.02	NitraVer® 5 Nitrate Reagent AccuVac TM Amplus, pk/25	"	01	
20.03	Ferrozine Iron Reagent Sol, pk/100	Pillows	90	
20.04	Total Chromium Reagent Set	"	80	
20.05	DPD Total Chlorine Reagent Powder Pillows, pk/100	"	85	
20.06	Fluoride Reagent, AccuVac®, pk/25	"	100	
20.07	PhosVer 3 Reagent Pillows pk/100	"	100	
20.08	COD Reagent Vials, (0.1.500 mg/L). pk/150	Pkt	02	
20.09	Calcium Chloride	Grms	700	
20.10	Ferric Chloride	"	800	
20.11	Manganese Sulfate	"	800	
20.12	Starch Solution	"	500	
20.13	Std Potassium dichromate , 0.025N	"	800	
20.14	Standard EDTA (0.01M)	"	800	
20.15	Buffer solution	Ml	500	
20.16	EBT Indicator	Grms	300	
20.17	Sodium Hydroxide (0.1N)	"	1500	
20.18	Hydroxynaphthol blue indicator	"	20	
20.19	Les Endo Agar Medium	"	600	
20.20	Standard silver Nitrate Titrant (0.0141N)	"	20	
20.21	Standard sodium Chloride (0.0141N)	"	700	
20.22	Sodium Hydroxide suspension	Lit	02	
20.23	Sulfuric Acid (1.0N)	Lit	02	
20.24	Magnesium chloride	Kg	2	
20.25	Ammonium chloride	Grms	400	
20.26	Phenolphthalein indicator	"	50	
20.27	Ammonium hydroxide	Ltr	0.5	
20.28	Brilliant green bile broth	Grm	1000	
20.29	Methanol	Ltr	02	
20.30	2 Chlro phenol	Ml	500	
20.31	Ammonium sulphate	Grms	700	
20.32	Di-Potassium hydrogen phosphate	"	800	
20.33	Potassium Di hydrogen phosphate	"	70	
20.34	Standard sulfuric acid solution (0.02N)	Lit	02	
20.35	Methyl Orange Indicator	Grms	500	
20.36	Sodium Carbonate (0.02N)	"	700	

	20.37	Sodium Thiosulfate (0.1N)	"	800			
	20.38	Sodium Bicarbonate	Kg	01			
	20.39	Oxalic Acid (0.05M)	"	01			
	20.40	Magnesium Sulfate	Grms	700			
	20.41	Potassium Chromate Indicator	"	800			
	20.42	Hydrogen Peroxide	Kg	01			
	20.43	Phosphate Buffer Solution	Lit	0.5			
	20.44	Alkali-Iodide-Azide Reagent	"	2			
	20.45	Phenol	Grms	800			
	20.46	Magnesium sulphate	"	800			
	20.47	Bromocresol Green sodium salt	Grm	25			
	20.48	Aluminum sulphate	Kg	1			
	20.49	Ferrous sulphate	Grms	900			
	20.50	Ferrous chloride	Kg	1			
	20.51	Arsenic Kit	Kit	One & half			
	20.52	Sodium Hydroxide	Kg	01			
	20.53	Aluminum chloride	Kg	1			
	20.54	Distilled water	lit	5			
	20.55	Ammonium chloride	Grms	600			
	20.56	Magnesium chloride hexahydrate	;;	300			
	20.57	EBBR Eriochrome Blue Black R Indicator, 0.2% (w/w)	;;	500			
	20.58	Ethyl alcohol	litre	0.5			

c.	**CONRETE LAB**		
1.	**Water Impermeability Apparatus** Test conforming to EN 12390-8 Used to determine the impermeability of concrete to water. The test is performed by placing the sample in the special chamber (measuring 250 x 250 x 220 (h) mm, height being adjustable) and securing it between the upper flange and the lower gasket delimiting the test surface. Water under pressure is then applied to the surface (dia. 100 mm) for the duration prescribed by the Standard. A precision valve controls water pressure shown by the dial gauge, The apparatus can be used for testing three samples at a time. All parts coming into contact with water are in stainless steel.	4	EU, Turkey, UK, USA

	Inlet-outlet taps are located at the front of the apparatus while the three graduated burettes for measuring water volume are mounted on the upper panel. Supplied complete with 6 gaskets (for 15 and 20 cm cubes). Air Compressor (10 bar). Set of 3 gaskets for permeability test on 200 mm side/dia. samples Set of 3 gaskets for permeability test on 150 mm side/dia. samples Accessory for permeability meter for adapting one of the test chambers to samples with height 300/320 mm		
2.	**a. Tensile test on cement mortar, touchscreen version with software** Test conforming to ASTM C190, ASTM C307, and AASHTO T132 standards. Test development with load control. Multi-purpose testing frame, maximum compression capacity: 50 kN, maximum tensile capacity: 25 kN, electronic control unit with touch-screen color display that runs like a standard PC based on Windows operating system, unlimited memory storage with: 2 USB ports, 1 SD card slot, adjustable testing speed from 0.01 to 51mm/minute, adjustable pace rate from 1 to 15000 N/sec., maximum ram travel: 100 mm, daylight between columns: 380 mm, maximum vertical daylight: 850 mm, power supply: 230V, 1ph, 50-60Hz. Tensile / compression strain load cell, 10 kN + calibration process. Tensile jaws "8" shaped for mortar briquette. Software for tensile test. Briquette mould. **b. Data Acquisition system for Tensile test on cement mortar,** Core i7 10th generation, 16 GB RAM, 256 GB SSD, 1 TB HDD. Motherboard integrated with Wi-Fi device. 24'' LED, keyboard and mouse	1	EU, UK, USA,
3.	**Sieve Shaker** Confirming to EN 932-5, ISO 3310-1 standards. Activated by electromagnetic impulses and thanks to the triple vibrating action (vertical, lateral and rotational) is recommended to perform sieving tests. Electromagnetic shaker can hold up to 10 sieves and can also suitable for wet sieving tests. It accepts sieves having diameter 200 - 250 - 300 - 315 mm - 8" - 12". Separate digital control panel can adjust: the sieving time from 1 to 999 minutes, the vibrating intensity, the pauses between one vibration and the following one. Power supply: 230V, 50Hz, 1ph. Noise	1	EU, UK, USA, Turkey

	reduction cabinet, lined internally with sound-proofing material for noise reduction in compliance with CE directive.		
4.	**Graduated Cylinder Capacity: 100 cc** Capacity: 100 cc, Characteristics: transparent glass spouted.	10	Malaysia, Thailand, EU, UK, USA, Turkey
5.	**Creep Apparatus and Crack Detection Microscope** **a.** Creep Apparatus: Test conforming to ASTM C512 300kN capacity load frame for creep test This test is performed for measuring the shrinkage of cylindrical specimens under constant loads at different time intervals. The apparatus consists of a load frame designed to apply and maintain the required load on the specimen. The initial compression is applied by a portable hydraulic jack. The load maintaining element is a series of springs preloaded by the hydraulic jack. The apparatus is supplied complete with hand pump, two 200 mm diameter precision gauges (one permanently connected, the other for loading) and a hydraulic Jack. Maximum load: 300 kN Vertical testing space: 1650 mm Compression platens: 165 mm diameter. The upper platen is spherically seated. Hydraulic jack: 300 kN capacity Hand pump with precision Bourdon gauge 200 mm diameter Bourdon gauge 200 mm diameter permanently connected Frame dimensions: 450 mm diameter x 2680 mm height Weight: 300 kg (approx.) Datalog 8, 8 channels multipurpose data logger Set of 4 connecting cable Data acquisition Software Electrical compensation device Strain gauge 60 mm length. Pack of 10 Strain gauge application kit Connecting terminals, 50 pairs **b.** Crack detection microscope: A high quality microscope designed for measuring crack widths in concrete members, masonry walls and other structures. The apparatus operates by an adjustable lamp unit and the image is focused by	1	Japan. EU, UK, USA

	turning a knob. The eyepiece scale can be turned through 360° to align with the direction of the crack or pitch under examination. The crack detection microscope is used to measure cracks in concrete and rocks. The high definition lens is provided with an adjustable light source fed by high power batteries. Magnification: 40x, measuring range: 4 mm Divisions: 0.02 mm, Battery: 1.5 V. Dimensions: 130 x 90 x 40 (h) mm. Weight approx.: 550 g **c. <u>Data Acquisition system for creep apparatus and crack detection microscope</u>** Core i7 10th generation, 16 GB RAM, 256 GB SSD, 1 TB HDD. Motherboard integrated with Wi-Fi device. 24'' LED, keyboard and mouse		
6.	**a. <u>Poisson's Ratio Measuring Apparatus</u>** Test conforming to ASTM C469 The compressometer / extensometer for static Modulus of Elasticity and Poisson's Ratio to ASTM C469 is a device for measuring the longitudinal strain and corresponding diametrical strain of dia.150x300mm (6"x12") and dia.100x200 mm (4x8") concrete cylinders, or core, subjected to axial loading. It works by measuring the relative displacement of datum points on the cylinder surface. The models fitted with displacement transducers can be connected to a suitable data logger or, directly to our Automatic control consoles which can provide cyclic loading and automatic determination of the Modulus of Elasticity. Axial-circumferential compression device complete with two digital gauge 25.4x0,001 mm with output for PC connection (special cable required) The data logger as, for example, can be used with compression testers for axial deformation measurement when it's not mandatory to perform loading / unloading cycles, but only loading ramps. In this case, one of the channel of the data logger should be used for the load signal coming from an additional pressure transducer with 3 way connector fitted to the compression tester. Please get in touch with our technicians for complete information and serviceograms and battery charging device and grease coupling tube. Axial compression device for cylinder dia.150x300mm complete with two high precision LDT displacement transducer 10mm travel. Serial cable for PC connection	2	USA, EU, UK, Canada, Japan,

	Dimension: 300x240x160 mm		
	b. <u>Data Acquisition system for Poisson's Ratio Measuring Apparatus</u> Core i7 10th generation, 16 GB RAM, 256 GB SSD, 1 TB HDD. Motherboard integrated with Wi-Fi device. 24'' LED, keyboard and mouse		

d. SOIL MECHANICS AND HIGHWAY ENGINEERING LAB			
1.	**<u>Sand Absorption Cone And Tamper</u>** Confirming to EN 12274-3, EN 1097-6 standards. Used for the determination of the absorption and specific gravity of fine aggregates.	3	EU, Turkey, UK
2.	**<u>PLANETARY MIXER Capacity 20 liter</u>** EN 12697-34; ASTM D1559, D5581 Capacity: 30 liters. Machine is provided with a variable speed drive allowing to set a wide range of speeds: from 20 to 130 rpm for the planetary action and from 60 to 390 rpm for the revolving action. Stainless steel protection grid can be lifted to inspect the bowl and in this case the motor automatically turns off to prevent accidents to CE safety directive. A timer allows to select the mixing time or the continuous mixing. Mixer is supplied with stainless steel bowl, whisk thick wire	1	EU, UK, USA

	beater, EN specifications, coupling beater / shaft, hook beater and electric heater with thermo-regulator. Power supply: 230V, 1ph, 50Hz. Ax. load cap (kN): 100 Min.testing speed (mm/min): 0.05 Max. testing speed (mm/min): 51 Type of control: Crossbeam displacement rate Fast approach speed (mm/min): 40 Power rating (W): 250 Max. ram travel (mm):100 Display: touch screen 240x128 Data downloading port: LAN Max. vertical span (mm): 1040 Horizontal daylight (mm) 456 Overall dimensions (wxdxh)(mm): 600x520x1830 Weight approx. (kg): 165		
3.	**Oven Capacity: 100 liters, Shelves: 2,** Conforming to EN 22592, ASTM D92, AASHTO T48, IP 36/67, UNE 7075, NF T60-118, and ISO 2592 standards. Used to measure the flash and fire points of lubricated oils and petroleum products. Comes with brass cup, thermometer mercury free IP 28C (ASTM 11C) range -6 +400°C., electric heater with thermo-regulator double line fuse. Power supply: 230V, 1ph, 50/60Hz. Complete with flame gas device. Power : 600 watt	1	EU, UK, USA
4.	**a. Universal extruder** Conforming to EN 1427, ASTM D36, AASHTO T53, NF T66-008 standards. Automatically determines the softening point of asphalts and pitches. Two laser sensors detect the balls fall determining the softening point. The bath temperature is measured by an electronic system maintaining the gradient (5°C/min) as specified by the standards. A magnetic stirrer with electronic speed adjustment from 0 to 160 rpm. The touch-screen graphical interface allows an easy set up of the parameters and the immediate execution of the test. High resolution color display, 1/4 VGA, offers all the functions of a PC for the management and analysis of data, test results and graphs. Two test parameters can be selected in the microprocessor menu: Test on boiled distilled water for softening point from 30 to 80°C. Test on glycerol for softening point from	1	EU, UK,USA

	80 up to 150°C. Real time visualization of the bath temperature, test progress, rpm of the stirrer. Unlimited memory (USB pen-drive, SD card) editable data via PC. Tester is composed of: ceramic-glass heating plate with automatic cut off at the end of the test cycle, motherboard with microprocessor, which controls: heater/stirrer, temperature probe, laser sensors, pre-heating phase of the plate and memorizes all the test parameters and steel balls centering device. Power supply: 230V, 1ph, 50/60Hz. Rods with spherical ends (set of 2 pieces) for checking and calibration. Power: 750 watt **b. <u>Data Acquisition system for Universal extruder</u>** Core i7 10th generation, 16 GB RAM, 256 GB SSD, 1 TB HDD. Motherboard integrated with Wi-Fi device. 24'' LED, keyboard and mouse		
5.	**a. <u>Proctor Penetrometer - (Bitumen Automatic)</u>** Automatic Electronic Bitumen Penetrometer Sample Cup, Ø 55x35 mm, stainless steel Sample Cup, Ø 70x45 mm, stainless steel Penetration Needle, 2,5 g Transfer Dish EN 1426; ASTM D5; AASHTO T49 The Automatic Electronic Penetrometer is used for determination of the needle penetration according to EN 1426, ASTM D5 and AASHTO T49 standards. The penetration depth of the needle is determined with a pulse type electronic measuring system, which is separated from the plunger during the test, this allows the free guidance of the plunger which virtually eliminates friction during the test. The frame with levelling screws and spirit level consists of a digital control unit with touch screen, an anodized aluminum base plate with centering guide, magnifying lens and low voltage illuminator mounted on flexible arms. The penetration depth of the cone is determined with a pulse type electronic measuring system, which is separated from the plunger during the test, this allows the free guidance of the plunger which virtually eliminates friction during the test. The cone is lowered so that the tip of the cone just touches the surface of the soil by pressing up and down arrows on the screen with fast and slow motion option. In this process, magnifying glass and led lamp help the operator. .The penetrometer allows the cone to free fall into the sample for the specific set time interval. Which can be set on display.	1	EU, UK, USA

	A thermometer (IP38, ASTM 17C or 63C) required for the test should be ordered separately. The Automatic Electronic Penetrometer is supplied complete with; Penetration Needle, 1 piece. Needle holder Weights of 50g and 100g Transfer Dish Sample Cup, Ø 55x35 mm, 6 pieces, stainless steel Measuring Range : 0-50 mm Resolution: 0.01 mm Total Test Load :100 g or 200 g Loading Time Adjustable from 0.1 to 9999 sec. Dimensions: 270x480x750 mm Weight (approx.): 24 kg Power: 75 W		
	b. <u>Data Acquisition system for Proctor Penetrometer - (Bitumen Automatic)</u> Core i7 10th generation, 16 GB RAM, 256 GB SSD, 1 TB HDD. Motherboard integrated with Wi-Fi device. 24'' LED, keyboard and mouse		
6.	**<u>Los Angeles Abrasion Machine</u>** Conforming to BS 812:105.1 standard. Flakiness gauge constructed of heavy gauge stainless steel sheet. Length gauge mounted on a hardwood base.	1	EU, UK, USA
7.	**<u>High Speed Stirrer</u>** Testing Conforming to EN 196-3, EN ISO 9597, BS 6463, NF P15-432, and UNE 80102 standards. Le-chatelier mould (qty: 03), glass plate 50x50 mm, pack of 2 pieces (qty: 02), weight 100 g (qty: 03), extensibility of mould apparatus with 300 g weight and tamping rod 17 mm diameter. Le chatelier water bath; constructed with stainless steel inside chamber and exterior case in painted steel sheet, it can hold up to 12 moulds in the removable rack, supplied with the bath. Power supply: 230V, 1ph, 50-60Hz.	1	EU, UK, USA

8.	**Digital Balance Capacity: 6 kg, Accuracy of 0.1 gm** Capacity: 6 kg, accuracy of 0.1 g, power supply: rechargeable batteries and also 230V, 1ph, 50-60Hz, RS 232 port.	1	Malaysia, Thailand, Turkey
9.	**Glass wares including beakers, cylindrical measures** Glass beakers (25, 50, 100, 250, 600, 1000, 2000 and 5000 ml), cylindrical measures with stopper (10, 25, 50, 100, 250, 500, 1000 and 2000 ml). Glass graduated cylinders (10ml, 25ml, 50ml, 100ml, 250ml) 20 pcs 35ml Glass Test Tubes 20 x 150mm with Cork Stoppers and Brush Graduated Beakers (50ml,100ml, 250ml, 500ml)	1	Malaysia, Turkey, Thailand
10.	**a. Standard Moisture Tester (100 G Max. Sample)** BS 6576, AASHTO T217, NF P94-052-1, ASTM D4944 Case dimensions: 520 x 340 x 140 mm Digital moisture meter with 0-3 bars high resolution digital manometer, digital balance and log printer for printing test certificates Supplied in a wooden case complete with balance, 4 steel balls to crush sample, tool kit, 3 ampoules of calcium carbide. 10 ampoules for dial gauge checking. Choice of sample weight depends on expected moisture. Capacity: samples weighing from 20 to 100 g. Analogical dial gauge (1.6% accuracy). Moisture range: 0 - 1.6 bar. Dimensions: 530 x 350 x 150 (h) mm. Weight: 8 kg max. 1 Portable pressure calibrator for Speedy moisture tester 1 Spare reagent ampules. Pack of 100. Total 1.7 kg **b. Data Acquisition system for Standard Moisture Tester (100 G Max. Sample)** Core i7 10th generation, 16 GB RAM, 256 GB SSD, 1 TB HDD. Motherboard integrated with Wi-Fi device. 24'' LED, keyboard and mouse	1	EU, UK, USA
11.	**Vibrating Hammer Compaction** EN 13286-4 BS 1377:4 BS 1924:2 EN 12697-9 EN 12697-10 EN 12697-32	1	EU, Turkey, UK

	Used for compacting Proctor and C.B.R. samples. Hammer complete with tamping foot 146 mm diameter and shank 300 mm long. Steel supporting frame thus rendering it stable and easy to use.Power supply: 220-240 V, 50 Hz, single phase. 800 W .Dimensions: 500 x 500 x 1000 (h) mm. Weight: 80 Kg. **Accessories and spare parts:** Compaction hammer Supporting frame and hammer Tamping foot (unconfined test), distance of centering disc to square base 150 mm Tamping foot (without shaft) 102 mm dia. Tamping foot (without shaft) 146 mm dia. Shaft, 300 mm long, Proctor/C.B.R. compaction test software		
12.	**Misc. items including glassware, tools etc.** **a. Licensed CSI ETABS® Latest version (multi user, perpetual license)** **b. Licensed FLOW-3D® V. 12.0 academic license (lifetime, multi user)** **c. FLOW-3D Hydro® academic license (lifetime, multi user)**	1	EU, UK

e. MATERIAL TESTING LAB			
1.	**a. Critical Load on Strut Apparatus (Column Buckling Apparatus):** Bench top apparatus is used for studying buckling on struts under various end conditions. Basic frame: 2 columns and sliding cross member with loading screw. Maximum strut length: 750 mm. Load capacity: 1500 N. Load measurement: Force digital display. Dial gauge: 0-20 mm x 0.01 mm graduation. Weight hanger and weights: 4 x50 + 2 x 100 + 3 x 200 g. Strut supports: Knife edge: 2 each. Built-in: 2 each.	2	EU, UK , USA

	Struts specimens: 6 each with knife edge ends: 3 (approx) x 20 mm mild steel. Lengths: 500, 550, 600, 650, 700 and 750 mm. 2 each with knife edge ends: 6 (approx) x 20 x 750 mm brass and aluminum. Power supply: 220V 1Ph 50Hz. Struts of 5 other sizes and 5 different materials. Computer interface, includes displacement sensor, computer interface unit and software for data display and analysis by computer.		
	b. Data Acquisition system for Critical Load on Strut Apparatus (Column Buckling Apparatus): Core i7 10th generation, 16 GB RAM, 256 GB SSD, 1 TB HDD. Motherboard integrated with Wi-Fi device. 24'' LED, keyboard and mouse		
2.	**Core Drilling Machine.** Robust versatile machine is ideal for field where it is necessary to core at any angle. The extension columns (see accessories) permit the holding at a maximum vertical or horizontal distance of 3850 mm. The rack feed (drilling excursion) is 1000 mm long. Heavy duty universal core drilling machine. 3 speeds motor. 230V/50-60Hz/1Ph Coring angle: 0 to 360° Rack feed: 1000 mm Shaft thread: 1¼-7 Power: 2200 W at 230 V; 1800 W at 110 V Full load speed: 670/1140/1580 r.p.m. Coring range dia.: 20/200 mm Dimensions approx.: 470x785x1630 mm Weight approx.: 80 kg Coring bit for 200 mm dia x 400 mm long cores, with permanently attached head 1 1/4 W Core extractor dia 50 mm Core extractor dia 75 mm Core extractor dia 100 mm	1	EU, UK , USA

	Core extractor dia 150 mm Core extractor dia 200 mm Coring bit for 50 mm dia x 400 mm long cores, with permanently attached head 1 1/4 W. Coring bit for 75 mm dia x 400 mm long cores, with permanently attached head 1 1/4 W. Coring bit for 100 mm dia x 400 mm long cores, with permanently attached head 1 1/4 W Coring bit for 150 mm dia x 400 mm long cores, with permanently attached head 1 1/4 W Tie-rod for core drill fastening Pack of 50 expansion bolts for core drill fastening The range of machines permits the extraction of all kinds of cores (reinforced or ordinary concrete, asphalt, masonry, rocks and so on) with diameters between 20 and 200 mm. By applying special extensions it is possible to reach considerable depths that vary according to the material in question and the diameter of the hole. Drillings and coring can be carried out at any angle. All machines are wheel-mounted and fitted with handles to facilitate movement.		
3.	**<u>Deformation of curved axis beam</u>** Represents a planar central force system in which multiple forces act on a single point of application. Based on the example of a crane jib, forces are determined graphically and experimentally: resultant cable force, tensile force, compressive force. The directions and magnitudes of the forces are determined graphically by way of a force parallelogram. A bar of adjustable length and a chain make up the crane jib, which is attached by adjustable clamp elements to a retaining bar. Weights are applied to the crane jib. The occurring bar forces are indicated by integrated spring balances. • tensile and compressive forces in a planar central force system based on the example of a crane jib • integrated spring balances in the bars • Max. load on crane jib 50N • stainless steel retaining bar • sturdy metal base plate • handles to aid transportation • storage system to house the components • Spring balance for tensile forces tensile force: 0…50N graduation: 0,5N Spring balance for compressive forces	2	EU, UK , USA

	pressure force: 0…50N graduation: 1N **Weights** 1x 1N (hanger) 4x 1N 1x 5N 4x 10N **Dimensions:** LxWxH: 600x200x620mm Weight: approx. 10kg		
4.	**<u>Heavy Duty Balance (200 kg)</u>** • fundamentals of the equilibrium of moments: applied forces, generated moments and equilibrium • action of forces dependent on the lever arm • investigation of the equilibrium of moments on a two-arm lever • ball bearing-mounted beam with integrated scale as two-arm lever • sturdy metal frame • storage system to house the component **Technical Specs. :** Beam: LxWxH: 600x30x10mm, centrally ball bearing mounted lever length: 2x 300mm Weights: 3x 1N (hanger) 6x 5N 12x 1N Dimensions and weight: LxWxH: 600x300x410mm Weight: approx. 10kg	1	EU, UK , USA
5.	**<u>Aggregate Impact Value (AIV) Apparatus</u>** • elastic lines of statically determinate and indeterminate beams under various clamping conditions • 3 steel beams with different cross-sections • 1 brass and 1 aluminum beam • 3 articulated, height-adjustable supports with force gauge • 1 support with clamp fixing • force gauges can be zeroed • 3 dial gauges to record deformations • weights with adjustable hooks • anodized aluminum section frame housing the experiment • storage system to house the components **Technical data** 6.Beam length: 1000mm	1	EU, UK , USA

	cross-sections: 3x20mm (steel), 4x20mm (steel), 6x20mm (steel,brass, aluminum) Frame opening: 1320x480mm Weights: 4x 2.5N (hanger) 4x 2.5N 16x 5N Measuring ranges: force: ±50N, graduation: 1N travel: 0…20mm, graduation: 0.01mm Dimensions and weights: LxWxH: 1170x480x178mm (storage system) Weight: approx. 12kg (storage system)		
6.	**Blaine Fineness Apparatus** Free-hanging cables and ropes are often used to support a structure, such as stay cables. On suspension bridges they are the load-bearing element of the structure. In many calculations the influence of the dead-weight of the cable can be ignored, because it is low compared to the other loads. In the case of overhead power lines, however, the dead-weight of the cable is relevant to the design of the pylons. In a free-hanging cable under the influence of its own dead-weight is investigated. A roller chain serves as the cable, and is mounted on two ball bearing-supported chain wheels. The chain wheel units are fixed to a cross-arm. The spacing between the chain wheel axles can be adjusted horizontally and vertically. Weights can be attached to both ends of the chain. The maximum sag is measured using scaled rules, and can be compared with calculated values. The sag is the distance between the connecting line of the supports and the catenary. All the component elements of the experiment are clearly laid-out and housed securely in a storage system. The complete experimental setup is arranged in the frame. Learning Objectives: • determination of the catenary of a free-hanging cable • under dead-weight only, with additional weights, with a, symmetrical setup (chain wheels at same height), with an unsymmetrical setup • measurement of the sag • comparison of calculated and measured values • determination of the catenary of a free-hanging cable • symmetrical and unsymmetrical experimental setup possible • roller chain as cable with 2 ball bearing-mounted chain wheels • adjustable chain wheel axle spacing	1	EU, UK , USA

	• height of a chain wheel adjustable for unsymmetrical experimental setup • cross-arm with scale to hold chain wheels and rule to measure vertical sag of chain • 2 hangers to load the ends of the chain • storage system to house the components • Experimental setup in frame. **Technical data** Roller chain length: 2400mm weight: 0,95kg/m Chain wheel, number of teeth: 17 Cross-arm axle base: 600…1000mm groove spacing: 50mm Holder adjustable height of chain wheel: 0…300mm hole spacing: 50mm Weights 2x 1N (hanger) 8x 1N 6x 5N Measuring ranges horizontal: 0…1000mm vertical: 0…850mm graduation: 1mm Dimensions and weight LxWxH: 1170x480x178mm (storage system) Weight: approx. 29kg (total)		
7.	**a. <u>Concrete Vibrating Table</u>** • determination of the friction coefficients of various material pairings • transition from static to dynamic • static equilibrium of forces on the inclined plane • determination of the angle of inclination as from which sliding occurs (calculation and verification by experiment) • Simply Supported Beam Apparatus	1	EU, UK , USA

	Technical Specs: experiment relating to friction on the inclined plane inclined plane with plastic coating, drag link with angle scale and ball bearing-mounted deflection roller angle of plane adjustable 2 samples graduated weight set Friction body LxWxH: each 80x60x44mm dead-weight force: each 10N 1x steel / polypropylene 1x aluminum / brass Inclined plane length: 1000mm adjustable angle range: ±45° Weights: 1x 1N (hanger), 4x 0,1N, 1x 0,5N, 4x 1N, 1x 5N Dimensions and weight: LxWxH: 1130x300x800mm Weight: approx. 35kg		
	b. <u>Data Acquisition system for Concrete Vibrating Table</u> Core i7 10th generation, 16 GB RAM, 256 GB SSD, 1 TB HDD. Motherboard integrated with Wi-Fi device. 24'' LED, keyboard and mouse		
8.	**<u>Concrete Drum Mixer</u>** The centre of gravity of a shape of uniform thickness can easily be found by this apparatus. It provides a simple technique for complicated shapes, far quicker than using calculus for example. A free standing backboard has a hook from which a selection of flat shapes can be hung. A simple pendulum suspended from the pin enables the line of action of the weight to be transferred to the lamina. The centre of gravity is the position on the shape where two or more such lines intersect.	1	EU, UK , USA

	6 different shapes are provided, each having a number of holes in their profile. This allows for the shapes to be suspended at different points, and the lines of action drawn. 1 x Trapezium shape (4 holes) 1 x 'L' shape (3 holes) 1 x semi-circle shape (3 holes) 1 x triangle shape (3 holes) 1 x 'T' shape (3 holes) 1 x circle shape (3 holes)		
9.	**a. <u>Mortar Permeability Apparatus 5 liter Mortar Mixer Automatic With Sand Dispenser</u>** Learning objectives/experiments • load on a beam with a point load • plot a load–extension diagram and determine the nonlinear behavior • compare the load and relief curves • demonstrate the invalidity of the superposition principle in the plastic region • study a beam until plastic deformation • load on the beam from point load • fixed and movable support for supporting the beam • beams of different materials and profiles • dial gauge for recording the deformation • storage system for parts • experimental setup in the mounting frame **Technical data** Beams 1x 1000x15x3mm, steel 1x 1000x15x3mm, aluminum 1x H-profile, 1000x15x15x2mm, aluminum Load application device Max. load: ±5000N Max. travel: 100mm Measuring ranges travel: 0…50mm Dimensions and weight: LxWxH: 1170x480x178mm	1	EU, UK , USA

	Weight: approx. 30kg **b. <u>Data Acquisition system for Mortar Permeability Apparatus 5 liter Mortar Mixer Automatic With Sand Dispenser</u>** Core i7 10th generation, 16 GB RAM, 256 GB SSD, 1 TB HDD. Motherboard integrated with Wi-Fi device. 24'' LED, keyboard and mouse		
10.	**<u>Compacting Factor Apparatus</u>** Specification • torsion tests with different metallic specimens to fracture • manual generation of the twisting moment by means of hand wheel and worm gear • specify the input angle via hand wheel • long and short specimens of steel, aluminum, brass • movable measuring device for different specimen lengths • measure the test moment by means of strain-gauge measuring shaft and measuring amplifier • strain-gauge measuring shaft with compensation for inherent deformation • twisting angle measured by incremental encoder • electronic measuring amplifier with touch panel to display twisting moment and twisting angle • software for data acquisition via USB under Windows 8.1, 10 Technical data: Max. twisting moment: 30Nm Loading device, worm gear transmission ratio: 1:63 Specimen mount: 2x 17mm, hexagonal Specimens: diameter: 6mm 4x 75mm, steel 4x 75mm, aluminum 4x 75mm, brass 2x 175mm, steel 2x 350mm, steel 2x 700mm, steel Measuring ranges: twisting moment: 0…30,0Nm angle of twist: 0…±3200°, resolution: 0,1°	1	EU, UK , Turkey

	230V, 50Hz, 1 phase 230V, 60Hz, 1 phase; 120V, 60Hz, 1 phase Dimensions and weight: LxWxH: 1400x700x500mm (experimental unit) LxWxH: 230x210x120mm (measuring amplifier) Weight: approx. 43kg (total) Set of 6 torsion specimens, St, Al, Cu, Zn with torsiometer is provided		
11.	**Specific Gravity Test Set** Specification • investigation of shear force on beam mounted on 2 supports • measurement of shear force in beam by low-friction hinge with 1 degree of freedom • position of hinge at 1/3 span • 2 bearing supports • loading of beam by 1 to 3 point loads • force gauge to indicate shear force • adjuster nut for horizontal alignment of beam • storage system to house the components Technical data: Beam: total length: 1100mm span: 800mm Shear force measuring range: ±50N Weights: 3x 1N (weight holder)	1	Turkey, EU, UK
12.	**Lab Tools** a. 4 Analytical Balances Resolution 1g, Capacity 30 kg with rechargeable battery b. Set of 10 Stop watches c. Set of 10 Bowles stainless steel (8 in, 10 in) d. Set of 2 Cutters for steel and brick with 10 spare disks for each e. Set of 15 local hydrometer test apparatus f. Set of 2 Retainers stainless steel 6 in dia and neoprene pads for concrete capping of 6 in dia cylinders g. Unit of Mercury for fineness test and shrinkage limit h. Set of 2 sieve sets (7 pieces, 12in) with Pan and cover i. Set of 2 Galvanized Trays (3'x3') 16 gauge j. Set of 10 Galvanized Trays (2'x2') 16 gauge k. Set of 2 Spades l. 1 Wheel borrow with tubeless tires m. 1 Sample splitter for coarse aggregate 2 in	1	EU, UK

	n. 1 Sample splitter for fine aggregate 3/4 in o. Set of 10 analogue strain sensors. p. Set of 10 Force gauges. q. Hand operated steel cutter for all number of bars r. Hand lifter with liver arm s. Set of 3 steel threaded brushes t. Set of 3 plastic threaded brushes u. Set of 15 GPS trackers		

f.	**Survey Lab**		
1.	**Alidade brass 18”** Brass Alidade Compass 18" - Large Brass Compass - Nautical Decor - Alidade Compass Nautical Decoration Fully Functioning Brass Telescope with Compass. Detailed Telescope made from brass metal. Beautiful Alidade compass also known as Turning table is a Navigational Marine Instrument to measure angle and distance of the object. Crafted classic marine collectible item Using high class Brass and finished to retro dull antique finish. brass and polished to brass finish Tube telescope Magnetic compass Polished to high class antique finish on brass Excellent retro design Decorative instrument base: 18 in telescope: 9 in overall: 8 1/8 in x 18 in x 4 1/4 in	5	EU, UK USA
2.	**Alidade brass 12”** Brass Alidade Compass 18" - Large Brass Compass - Nautical Decor - Alidade Compass Nautical Decoration Fully Functioning Brass Telescope with Compass. Detailed Telescope made from brass metal. Beautiful Alidade compass also known as Turning table is a Navigational Marine Instrument to measure angle and distance of the object. Crafted classic marine collectible item Using high class Brass and finished to retro dull antique finish. brass and polished to brass finish Tube telescope Magnetic compass Polished to high class antique finish on brass Excellent retro design Decorative instrument base: 12 in telescope: 9 in	5	EU, UK USA

	overall: 8 1/8 in x 12 in x 3 in		
3.	**Chains 100 ft.** Durable Surveying chain with length 100 ft. This chain comes in 100ft length. It consists of 100 links each link being 1ft long. At every 10 links a brass ring or tags are provided for indication of 10 links. Readings are taken in feet and decimal.	10	EU, UK USA
4.	**Compass (Prismatic)** Consists of a brass or aluminum circular box with a diameter of 100/125 millimeter. A highly magnetized needle on a hard steel pointed pivot is balanced at the center of the box. Aluminum circle consists of a needle graduated to 30 min. (0. 50) Graduations can be magnified by sliding the prism fitted with colored glasses having a sighting slit at the top.	5	EU, UK USA
5.	**Compass (Surveyors)** Surveyor's compass consists of a long, thin, pointed needle of magnetized steel with a small conical-shaped bearing of agate material at the center. The end of this needle which points north, the north end, is differentiated from the other end, the south end, by a small metal pin which passes horizontally through the needle near its north end. The agate bearing works on a pointed pivot of hard steel carried at the centre of the low cylindrical metal box (140mm in diameter). Attached to the opposite ends of this box are two sighting vanes with two slow motion screws and clamps which enable a definite line of sight to be defined or laid out. The instrument can either be screwed on to a tripod or remain hand-held for the purpose of measuring magnetic bearings. The metal box carries inside it, three graduated horizontal circles: top and lower circles 0-360 degrees, third circle in quadrants 0-90 degrees, with the N and S directions identified as zero points and the E and W directions are labelled as 90 degrees each	5	EU, UK USA
6.	**Hand Level in leather case** Specifications: Equipped with two interchangeable arcs with 47mm radius One arc is graduated in degrees, 0 to 60 in both directions, and the other arc is graduated in topographic. Index with friction movement for fine adjustment Non-glare finish Height: 65mm Abney level 5" (item no. 421): Tube length: 5 inches Graduation: Percent and degree Vernier reading: 10' Abney level 7 1/2" (item no. 423): Tube length: 168mm Graduation: Percent and degree Vernier reading: 10' Magnification: 5x	8	EU, UK USA
7.	**Auto Set level** Standard deviation for 1 km double levelling : 1.0 mm Telescope: Magnification : 32x Objective aperture : 36 mm Field of view : 1^0 20'	5	EU, UK USA

	Multiplication factor : 100 Additive constant : 0 Min. Focusing distance; 1.0 m With air type compensator of working range ±15' and setting accuracy ± 0.5'' and circular level sensitivity 8'/2mm Horizontal Circle: Graduation : 360^0 Graduation Level : 1^0 IP66 Environmental protection Temperature: -20^0 to 50^0 C operating -40^0 to 70^0 C Storage Approx. Size: 210 mm x 135 mm x 140 mm Approx. weight: 1.4 kg Lightweight, Accurate and Durable Quality Dust proof, water proof, easy to use interface, Anti- reflective Lens, Professional support network. Should be manufactured in an ISO, RoHS and CE certified factory		
8.	**Electronic Theodolite** Data: Telescope: Image: Erect Magnification: 30x Effective Aperture: 47mm Resolving Power: 3.75" Field of View: 1°30' (26m/1000m) Min. Focus: 1.5m Stadia Ratio: 100 Tube Length: 169mm Angle Measurement: Method: Absolute Encoding Dia. : 79 mm Min. reading: 1", 5", 10" Measuring unit: 360^0, 400 gon Vertical Angle 0^0 : Zenith 0^0, Horizontal 0^0 Accuracy: 2" Plate Vial: 30 "/ 2mm Circular Vial: 8'/ 2mm Compensator: Electronic Tilt Sensor : Vertical Compensation Compensation Range: ±3" Resolving Power : 6" Display type: Dual Face LCD Onboard Battery: Power resource: Rechargeable Li-ion Battery Voltage: DC7.4 V Operation Time: BDC 1600 mAh (About 20 hours) Laser: Length of the wave: 635 nm Power: 10 mW Effective Range: 150 m Position Error: ≤ 5" Power: DC 3.3 V	6	EU, USA, UK

	Laser Plummet: Red Laser, Class II Operating Temperature: -20^0 C to 45^0 C Approx. Dimensions: 180 mm x 166 mm x 355 mm Approx. weight: 6.5 kg **Including:** Set of 15 ranging rods		
9.	**Optical Squares (Stanley) double pattern** Four different pentagon prisms that allow setting out of 90 degree angles. Two of these are actually double 90 degree angles, allowing to set out a 90 degree angle both left and right at the same time (making a line crossing at straight angles rather than a single straight angle). With the exception of the modern, plastic, one, they are all metal (brass or aluminum).	5	EU, UK USA
10.	**Plane table (30" X 24")** Accessories include: Drawing Board: Board may be mounted on a tripod with a leveling head or a ball-and-socket arrangement in such a fashion that it can be leveled and revolved about a vertical axis and may be clamped in any position. It consists of a metal (brass or gunmetal) or boxwood straightedge or ruler of about 45 cm long. The beveled edge is called the “ruling edge” or the “working edge” or the “fiducial edge.” Alidade: The alidade may be plain fitted with sight vanes at both the ends, or it may be equipped with a telescope. One of the sight vanes is provided with a narrow rectangular slit. While other is provided with a central vertical hair or wire. If the alidade is telescopic, the telescope is provided with a vertical circle, and a level tube is fitted with cross-hairs Spirit Level: The spirit level which may be very sensitive, is not fitted to the alidade, the table can be leveled by placing the spirit level in two positions at right angles to each other and setting the plane table such that the bubble is central in both positions. Trough Compass: Trough Compass with two bubble tubes at right angles to each other mounted on a square brass plate is used for indicating the direction of the magnetic meridian on the paper. Water Proof Cover: The Waterproof cover is used to protect the sheet of paper on the plane table from the rain. Provided along with Aluminum Tripod for setting out the table.	5	EU, UK USA, Japan
11.	**Staves leveling staff (aluminum)**	20	EU, UK USA, Japan
12.	**Tape (30 m/ 100 ft)**	10	EU, UK USA, Japan

5. Special Terms and Conditions

Standard

1. The goods supplied must be capable of functioning properly under the climatic conditions of the area.
2. There shall be no deviation from specification and country of make as provided with each item. In case of any ambiguity in specification/ accessories needed for the full functioning of the equipment, the firm must clear it with the Procurement Committee. However, the decision of the Procurement Committee will be final.
3. The goods with standard accessories supplied under this tender shall confirm to the standard maintenance in the technical specification.

Training

1. The firm supplying the item/ equipment(s) will demonstrate the operation/ working of the supplied goods to the satisfaction of UET, Mardan and provide training. Suppliers are advised to provide details on formal training for covering all aspects.

Calibration of item/equipment

2. The supplier will install the good(s) in the presence and to the satisfaction of the Procurement Committee, if need be. In case of any defect in the supplied good(s) or if it is not in accordance with the desired specification(s), the goods will be changed at the cost of the supplier.

Warranty/ Guarantee

3. The Supplier will give comprehensive onsite warranty/ guarantee that the goods/ stores/ articles would continue to conform to the description and quality as specified for a period of at least One(01) year from the date of delivery, installation and commissioning of the said goods/ stores/ articles to be purchased and that notwithstanding the fact that the purchaser may have inspected and/ or approved the said goods/ stores/ article, if during the aforesaid period, the said goods/ stores/ articles, be discovered not to conform to the description and quality aforesaid or have determined (and the decision of the Procurement Committee in that context will be final and conclusive), the UET, Mardan will be entitled to reject the said goods/ stores/ articles or such portion thereof as may be discovered not to conform to the said description and quality, on such rejection the goods/ articles/ stores will be at the supplier's risk and all the provisions relating to rejection of goods etc. shall apply.
4. The Supplier shall, if so called upon to do, replace the goods etc., or such portion thereof as is rejected by Procurement Committee, otherwise the supplier shall pay such damage as may arise by the reason of the breach of the condition herein contained. Nothing herein contained shall prejudice any other right of the Procurement Committee in that behalf under this contract or otherwise.
5. The Supplier shall also replace equipment, in case it is found defective which cannot be put to operation due to manufacturing defect, etc. In case of equipment specified by the Procurement Committee, the supplier shall be responsible from carrying out annual

maintenance and repairs on the terms and conditions as may be agreed. The supplier shall also be responsible to ensure adequate regular supply of spare parts needed for a specific type of equipment whether under their annual maintenance and repairs contract or otherwise. In case of change of model, supplier will give sufficient notice to the Procurement Committee who may like to purchase spare parts from them to maintain the equipment in perfect condition.

6. Returnable Bidding Forms/Checklist

This section serves as a checklist for preparation of your Bid. Please complete the Returnable Bidding Forms in accordance with the instructions in the forms and return them as part of your Bid submission. No alteration to format of forms shall be permitted and no substitution shall be accepted. Before submitting your Bid, please ensure compliance with the Bid Submission instructions of the BDS. Bid Proposal:

Have you duly completed all the Returnable Bidding Forms?	
Form A: Bid Submission Form	1.
Form B: Joint Venture/Consortium/ Association Information Form	2.
Form C: Bidder Information Form	3.
Form D: Qualification Form	4.
Form E: Bid Proposal Form	5.
Form F: Specifications Compliance Form	6.
Form G: Price Schedule Form	7.
Have you provided the required documents to establish compliance with the evaluation criteria in Section 4?	8.

Form A: Bid Submission Form

(To be submitted in an envelope duly sealed and marked as Technical Proposal)

Name of the Bidder:		Date:
ITB reference:		

We, the undersigned, submit our Bid for the award of contract to supply the goods and related services required for [Insert Title of goods and services] in accordance with your Invitation to Bid No. [Insert ITB Reference Number]. We hereby submit our Bid, which includes this Bid proposal. We hereby declare that our firm, its affiliates or subsidiaries or employees, including any JV/ Consortium/ Association members or subcontractors or suppliers for any part of the contract:

- is not under procurement prohibition by any of the Government/ Semi-government/ Autonomous Organization;
- have not been suspended, debarred, sanctioned or otherwise identified as ineligible by any Organization in Pakistan;
- have not declared bankruptcy, are not involved in bankruptcy or receivership proceedings, and there is no judgment or pending legal action against us that could impair our operations in the foreseeable future;
- undertake not to engage in proscribed practices, including but not limited to corruption, fraud, coercion, collusion, obstruction, or any other unethical practice, with the UET, Mardan, and to conduct business in a manner that averts any financial, operational, reputational or other undue risk to the UET, Mardan.

We declare that all the information and statements made in this Bid are true and we accept that any misinterpretation or misrepresentation contained in this Bid may lead to our disqualification and/ or sanctioning by the UET, Mardan.

We offer to supply the goods and related services in conformity with the Bidding documents, including the UET, Mardan General Conditions of Contract and in accordance with the Schedule of Requirements and Specifications. Our Bid shall be valid and remain binding upon us for the period specified in the Bid Data Sheet. We understand and recognize that you are not bound to accept any Bid you receive.

I, the undersigned, certify that I am duly authorized by [Insert Name of Bidder] to sign and submit this Bid on behalf of bidder to UET, Mardan.

Name: _____
Title: _____
Date: _____
Signature: _____
[*Stamp with official stamp of the Bidder*]

Form B: Joint Venture/ Consortium/ Association Information Form

(To be submitted in an envelope duly sealed and marked as Technical Proposal)

Name of the Bidder:		Date:
ITB reference:		

To be completed and returned with your Bid if the Bid is submitted as a Joint Venture/Consortium/Association.

No.	Name of Partner and contact information (address, telephone numbers, fax numbers, e-mail address)	Proposed proportion of responsibilities (in %) and type of goods and/or services to be performed
1	[Complete]	[Complete]
2	[Complete]	[Complete]
3	[Complete]	[Complete]

Name of leading partner (with authority to bind the JV, Consortium, Association during the ITB process and, in the event a Contract is	[Complete]

We have attached a copy of the below referenced document signed by every partner, which details the likely legal structure of and the confirmation of joint and severable liability of the members of the said joint venture:

☐ Letter of intent to form a joint venture OR ☐ JV/Consortium/Association agreement

We hereby confirm that if the contract is awarded, all parties of the Joint Venture/Consortium/Association shall be jointly and severally liable to UET, Mardan for the fulfillment of the provisions of the Contract.

Name of partner: _____ Name of partner:_____

Signature: _____ Signature: _____

Date: _____ Date: _____

Name of partner: _____ Name of partner: _____

Signature: _____ Signature: _____

Date: _____ Date: _____

Form C: Bidder Information Form

(To be submitted in an envelope duly sealed and marked as Technical Proposal)

Legal name of Bidder	[Complete]
Legal address & Branch Offices	[Complete]
Year of registration	[Complete]
Bidder's Authorized Representative Information	Name and Title: [Complete] Telephone numbers: [Complete] Email: [Complete]
Countries of operation	
No. of full-time employees	
No. of Technical Staff	
Quality Assurance Certification (e.g. SO 9000 or Equivalent) *(If yes, provide a Copy of the valid Certificate):*	[Complete]
Does your Company hold any accreditation such as ISO 14001 or ISO 14064 or equivalent related to the environment? *(If yes, provide a Copy of the valid Certificate):*	[Complete]
Does your Company have a written Statement of its Environmental Policy? *(If yes, provide a Copy)*	[Complete]
Does your organization demonstrates significant commitment to sustainability through some other means, for example internal company policy documents on women empowerment, renewable energies, education, vocational trainings ,social responsibility towards people with Special needs, or membership of trade institutions promoting such issues	[Complete]
Contact person that UET, Mardan may contact for clarifications during bid evaluation	Name and Title: [Complete] Telephone numbers: [Complete] Email: [Complete]
Please attach the following documents:	• Company Profile, which should not exceed fifteen (15) pages, including printed brochures and product catalogues relevant to the goods and/ or services being procured.
	• Proposed timetable for delivery, installation and commissioning plan for the required and

	quoted items to UET, Mardan after the award of Contract.
	• Certificate of Registration of the business.
	• Principal's Authorization Letter in favor of Bidder to participate in this Tender.
	• A proofing document confirms the offered warranty for at least One (01) year, supported by the manufacturer's certificates, if applicable.
	• A proofing document confirming supply of same or similar items of this magnitude to various clients/ customers in Pakistan.
	• Proven records of no less than the required Projects of similar nature/ value/ complexity in which delivery and services were extended.
	• Full detailed description of the specifications of the proposed items in addition to catalogues clearly showing the proposed specifications responding to the requirements.
	• Supporting photos of the proposed items, if applicable.
	• Quality certifications: ISO 9001:2015 (if applicable)
	• Latest Audited Financial Statements (Income Statement and Balance Sheet) including Auditor's Report for the past (3 years).

Note: To be filled in by each partner in case Bid is submitted as a JV/ Consortium/ Association

Form D: Qualification Form

(To be submitted in an envelope duly sealed and marked as Technical Proposal)

Name of the Bidder:		Date:
ITB reference:		

If JV/ Consortium/ Association, to be completed by each partner.

Previous Relevant Experience

Please list all Projects successfully completed in the last 3 years, covering following aspects;
a) Scope of the projects/ assignments.
b) Activities performed for the successful completion of the project.
c) Support Services Contracts in hand with SLA for the supplied goods.

List only those assignments for which the Bidder was legally contracted or sub-contracted by the Client as a company or was one of the Consortium/ JV partners. Assignments completed by the Bidder's individual experts working privately or through other firms cannot be claimed as the relevant experience of the Bidder, or that of the Bidder's partners or sub-consultants, but can be claimed by the Experts themselves in their CVs. The Bidder should be prepared to substantiate the claimed experience by presenting copies of relevant documents and references if so requested by UET, Mardan.

Project name & Country of Assignment	Client & Reference Contact Details	Contract Value	Period of activity and status	Types of activities undertaken

Bidders may also attach their own Project Data Sheets with more details for assignments above.

History of Non-Performing Contracts

☐ Non-performing contracts did not occur during the last 3 years			
☐ Contract(s) not performed in the last 3 years			
Year	Non- performed portion of contract	Contract Identification	Total Contract Amount (current value in PKR)
		Name of Client: Address of Client: Reason(s) for non-performance:	

Financial Standing

Annual Turnover for the last 3 years	Year	PKR
	Year	PKR
	Year	PKR

Latest Credit Rating (if any), indicate the source			
Financial information (in PKR equivalent)	Historic information for the last 3 years		
	Year 1	Year 2	Year 3
	Information from Balance Sheet		
Total Assets (TA)			
Total Liabilities (TL)			
Current Assets (CA)			
Current Liabilities (CL)			
	Information from Balance Sheet		
Total / Gross Revenue (TR)			
Profits Before Taxes (PBT)			
Net Profit			
Current Ratio			

☐ Attached are copies of the audited financial statements (balance sheets, including all related notes, and income statements) for the years required above complying with the following condition:

a) Must reflect the financial situation of the Bidder or party to a JV, and not sister or parent companies;

b) Historic financial statements must be audited by a certified auditing firm;

c) Historic financial statements must correspond to accounting periods already completed and audited. No statements for partial periods shall be accepted.

Form E: Technical Bid Proposal Form

(To be submitted in an envelope duly sealed and marked as Technical Proposal)

Name of the Bidder:		Date:
ITB reference:		

The Bidder's Bid should be organized to follow this format of the Technical Bid Proposal. Where the bidder is presented with a requirement or asked to use a specific approach, the bidder must not only state its acceptance, but also describe how it intends to comply with the requirements. Where a descriptive response is requested, failure to provide the same may be viewed as non-responsive.

SECTION 1: Qualification, capacity and expertise

- Bidder's general organizational capability: management structure, financial stability and project financing capacity, project management controls, extent of work to be subcontracted (if so, provide details).
- Bidder's relevance of specialized knowledge and experience on similar engagements done in the region/ country. Bidder should submit a detailed description of the projects executed (quantities, value, beneficiary).
- Manufacturer's strengths covering the regional/ global market presence, hi-tech products portfolio, manufacturing capacity, R&D activities resulting in national and international patents, quality control and assurance practices, and international certifications in relevant areas.

SECTION 2: Management Structure and Key Personnel

2.1 Describe the overall management approach toward planning and implementing the project. Include an organization chart for the management of project describing relationship of key positions and designations.

2.2 Provide CVs for key personnel that will be provided to support the implementation of this project using the format below. CVs should demonstrate qualifications in areas relevant to scope of goods and/or services.

Format for CV of Proposed Key Personnel

Name of Personnel	[Insert]
Position	[Insert]
Nationality	[Insert]
Language proficiency	[Insert]
Education/ Qualifications	Summarize college/university and other specialized education of personnel member, giving names of schools, dates attended, and degrees/qualifications obtained.]
	[Insert]
Professional certifications	Provide details of professional certifications relevant to the scope of goods and/or services]
	□ Name of institution: [Insert] □ Date of certification: [Insert]

Employment Record/ Experience	*[*List all positions held by personnel (starting with present position, list in reverse order), giving dates, names of employing organization, title of position and location of employment.
	[Insert]

I, the undersigned, certify that to the best of my knowledge and belief, the data provided above correctly describes my qualifications, my experiences, and other relevant information about myself.

_____ _____

Signature of Personnel Date (Day/Month/Year)

SECTION 3 : Scope of Supply, Technical Specifications and Training(s)

This section should demonstrate the Bidder's responsiveness to the specification by identifying the specific components proposed, addressing the requirements, as specified, point by point; providing a detailed description of the essential performance characteristics proposed; and demonstrating how the proposed bid meets or exceeds the requirements/specifications. All important aspects should be addressed in sufficient detail.

1.1 A detailed description of how the Bidder will deliver the required goods and services, keeping in mind the appropriateness to local conditions and project environment. Details how the different service elements shall be organized, controlled and delivered.

1.2 Explain whether any work would be subcontracted, to whom, how much percentage of the requirements, the rationale for such, and the roles of the proposed sub-contractors and how everyone will function as a team.

1.3 Implementation plan including a Gantt Chart or Project Schedule indicating the detailed sequence of activities that will be undertaken and their corresponding timing.

1.4 Details on post-deployment trainings on-site hands-on training for all equipment.

SECTION 4: Registration & Certifications

This section should demonstrate the Bidder's responsiveness towards its registration with the relevant national body and international organizations certifying the bidder's qualifications with respect to Quality and Project Management.

4.1 Provide a copy of valid registration with the relevant govt Authority.

4.2 Provide a copy of valid Certificate issued by International Organization for Standardization certifying the bidder's compliance and practices towards quality management principles and standards in their offered products/ solutions and services.

4.4 Provide a copy of valid Certificate issued by International Organization for Standardization certifying the bidder's compliance and practices towards information security management principles and standards in their offered products/ solutions and services.

SECTION 5: Warranty and Support Services

This section should demonstrate the Bidder's responsiveness to the post-commissioning warranty and support services of the goods supplied, addressing the requirements, as specified, point by point; providing a detailed description of the essential performance characteristics proposed; and demonstrating how the proposed bid meets or exceeds the requirements. All important aspects should be addressed in sufficient detail.

5.1 A detailed description of how the Bidder will provide the Warranty claims to the users, keeping in

mind the span and complexity of the project in context of local conditions and project environment.

5.2 Details how the post-delivery/ deployment Support Services will be provided to the users keeping in consideration the criticality of systems, and dependency of university administration and operations on such systems.

Form F: Specifications Compliance Form

(To be submitted in an envelope duly sealed and marked as Technical Proposal)

Name of the Bidder:		Date:
ITB reference:		

The Bidder's Bid should be organized to follow this format of the Technical Bid Proposal. Where the bidder is presented with a requirement or asked to use a specific approach, the bidder must not only state its acceptance, but also describe how it intends to comply with the requirements. Where a descriptive response is requested, failure to provide the same may be viewed as non-responsive.

Goods and Services to be supplied (based on the technical specification provided in Section 5)		**Comply (Yes/NO) (If No, Indicate discrepancy**	**Quotes Specification**	**Type/Model No. and Country of Origin Required**
Required Items:		**Offered:**		

Form G: Price Schedule Form

(To be submitted in an envelope duly sealed and marked as Financial Proposal)

Name of the Bidder:		Date:
ITB reference:		

[The Bidder is required to prepare the Price Schedule following the below format. The Price Schedule must include a detailed cost breakdown of all goods and related services to be provided.]

We, the <<Name of Bidder>>, hereby submit our Financial Bid for the Supply of Items as below. We assure you of our full compliance to the required specifications, delivery schedule and other terms without any deviation and/ or reservations. We reiterate our acceptance to the terms and conditions of the of BDS. Our Financial proposal as below is submitted for your kind consideration;

Total Bid Value in Figures (including Extended Warranty Price): _____

Total Bid Value in words (including Extended Warranty Price):_____
_____

Name & Designation of Authorized Person:_____

Signature: _____ (Please affix company stamp here)

Note: Quoted price must be inclusive of all taxes and duties.

ITEMS		**Quantity**	**Unit Price**	**Price (C&F)**

Annexure – I: Integrity Pact

The Bidders will be required to submit the below text on stamp paper after filling in the details and duly signed as well as stamped, as part of their Technical Proposal.

DECLARATION OF FEES, COMMISSION AND BROKERAGE ETC PAYABLE BY THE SUPPLIER OF GOODS, SERVICES & WORK IN CONTRACTS WORTH RS. 10.0 MILLION OR MORE

(To be filled by the bidder as a part of technical proposal)
Contract Number: _____ Dated: _____
Contract Value: _____
Contract Title: _____

_____ hereby declare that it has not obtained or induced the procurement of any contract, right, interest, privilege or other obligation or benefit from Government of Pakistan or any administrative subdivision or agency thereof or any other entity owned or controlled by it (GoP) through any corrupt business partner.

Without limiting the generality of the forgoing, _____ represents and warrants that it has fully declared the brokerage, commission, fees etc. paid or payable to anyone and not given or not given or agreed to give and shall not give or agree to give to anyone within or outside Pakistan either directly or indirectly through any nature or juridical person, including its affiliate, agent, associate, broker, consultant, director, promoter, shareholder, sponsor or subsidiary, any commission, gratification, bribe, finder's fee or kickback, whether described as consultant fee or otherwise, with the object of obtaining or inducing the procurement of a contract, right, interest, privilege or other obligation or benefit in whatever from GoP, except that which has been expressly declared pursuant hereto.

_____ certifies that it has made and will make full disclosure of all agreements and arrangements with all persons in respect of or related to the transaction with GoP and has not taken any action or will not take any action to circumvent the above declaration, representation or warranty.

_____ accept full responsibility and strict liability for making any false declaration, not making full discloser, misrepresenting facts or taking any action likely to defeat the purpose of this declaration, representation and warranty. It agrees that any contract, right, interest, privilege or other obligation or benefit obtained or procured as aforesaid shall, without prejudice to any other right and remedies available to GoP under any law, contract or other instrument, be voidable at the option of GoP.

Notwithstanding any rights and remedies exercised by GoP in this regard, _____ agrees to identify GoP for any loss or damage incurred by it on account of its corrupt business practices and further pay compensation to GoP in an amount equivalent to ten time the sum of any commission, gratification, bribe, finder's fee or kickback given by _____ as aforesaid for the purpose of obtaining or inducing the procurement of any contract, right, interest, privilege or other obligation or benefit in whatsoever from GoP.

_____ _____
[Buyer] [Seller / Supplier]

Annexure – II: Draft Contract Sample

THIS AGREEMENT made the _____ day of _____ 2021_____ between [name of Procuring Agency] of [country of Procuring agency] (hereinafter called "the Procuring agency") of the one part and [name of Supplier] of [city and country of Supplier] (hereinafter called "the Supplier") 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 Supplier 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.:

1. the Bid Form and the Price Schedule submitted by the Bidder;
2. the Schedule of Requirements;
3. the Technical Specifications;
4. the General Conditions of Contract;
5. the Special Conditions of Contract; and
6. the Procuring agency's Notification of Award.

7. In consideration of the payments to be made by the Procuring agency to the Supplier as hereinafter mentioned, the Supplier 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
8. The Procuring agency hereby covenants to pay the Supplier in consideration of the provision of the goods and services and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of 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, delivered by _____ the_____ (for the Procuring Agency)

Signed, sealed, delivered by _____ the_____ (for the Supplier)

Witnesses 1.
(Procuring Agency)

Witnesses2.
(Procuring Agency)