



**UNIVERSITY OF TECHNOLOGY  
NOWSHERA**

(SHUHADA-E-APS, UOT)

**DIRECTORATE OF PLANNING & DEVELOPMENT**

## **BID DOCUMENT**

*For*

**SUPPLY, INSTALLATION, COMMISSIONING, TESTING, AND TRAINING OF  
ELECTRONICS ENGINEERING TECHNOLOGY LABS EQUIPMENT**

**Procurement Ref: No.: UOT/P&D/Proc/2023-24/Labs Equipment/Electronics/02**

**Date of Opening of Technical Proposals: 27<sup>th</sup> November 2023 at 11:30 AM**

**Venue: Committee Room, University of Technology, Nowshera**

**On payment of Rs 2000/- (Non-Refundable)**



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## **NOTICE INVITING TENDER**

University of Technology, Nowshera invites sealed bids along with 2% bid security of the total quoted price from reputed firms registered with Income Tax and Sales Tax departments, Government of Pakistan, who are on Active Taxpayers List (ATL) of FBR, for supply, installation, commissioning, testing, and training of Labs Equipment for Electronics Technology Department on DDP basis.

Bidding documents, containing detailed specifications of items and other terms and conditions, are available on payment of Rs. 2,000/- (non-refundable) from the office of Deputy Director P&D, University of Technology, Nowshera as well as university website <http://uotnowshera.edu.pk>. Firms downloading tender documents from university website will have to deposit an amount of Rs. 2,000/- in the account titled: VC, University of Technology, Nowshera, Account No. 3001160687, Branch Code: 0104, Bank of Khyber Nowshera Cantt as the tender document fee before the time of bid submission.

Sealed Technical and Financial proposals should be submitted in two separate envelopes placed and sealed in one big envelope (as per **single stage – two envelopes bidding procedure**) up to **27<sup>th</sup> November 2023 till 11:00 A.M** in the Tender Box of University of Technology, Nowshera. Technical proposals will be opened on the same day i.e. **27<sup>th</sup> November 2023 11:30 A.M** at Conference Room of the University, in the presence of bidders or their authorized representatives who would like to be present. The Financial proposals of only those firms will be opened on a subsequent date, who are declared technically qualified for participation in the financial bid.

Pre-bid meeting of the prospective bidders will be held on **20<sup>th</sup> November 2023 at 11.00 A.M** in the University Conference Room.

Tenders received after the due date and time will not be considered. The undersigned reserves the right to accept or reject any bid as per KPPRA rules.

**Deputy Director (P&D)**  
University of Technology, Nowshera  
Phone: 0923-560301, Ext: 105

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## Section II.

### Instructions to Bidders

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## Instructions to Bidders

<b>A. INTRODUCTION</b>	
<b>1. Source of Funds</b>	<p><b>1.1.</b> The Procuring agency has received fund from Provincial Government through an ADP project titled “Establishment of Khyber Pakhtunkhwa University of Technology at Nowshera” with the aim to establish Electronics Engineering Technology department Labs from the source(s) indicated in the tender data towards the cost of the project/ schemes specified in the bid data sheet and it is intended that part of the proceeds of this funds will be applied to eligible payments under the contract for which these tender documents are issued.</p> <p><b>1.2</b> The funds referred to above in addition shall be “Public Fund” which according to 2 (I) of KPP Rules 2014 means (i) Provincial Consolidated Fund; (ii) foreign assistance; (iii) all moneys standing in the Public Account; and (iv) Funds of enterprises wholly or partly owned or managed or controlled by Government.</p> <p><b>1.3</b> Payment by the Fund will be made only at the request of the Purchaser and upon approval by the Government, and in case of a project will be subject in all respect to the terms and conditions of the agreement. The Project Agreement prohibits a withdrawal from the allocated fund account for the purpose of any payment to persons or entities, or for any import of goods, if such payment or import, to the knowledge of the Federal Government/ Khyber Pakhtunkhwa Government, is prohibited by a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations. No party other than the Procuring agency shall derive any rights from the Project Agreement or have any claim to the allocated fund proceeds.</p>
<b>2. Eligible Bidders</b>	<p>2.1 This Invitation for Bids is open to all suppliers from eligible sources as defined in the KPPRA Rules, 2014 and its Bidding Documents except as provided hereinafter. The Bidder must:</p> <ul style="list-style-type: none"> <li>i. Active Income and Sales Taxpayer available on ATL.</li> <li>ii. Record of taxes deposited in last two years/audited financial report.</li> <li>iii. Company Profile.</li> <li>iv. Bank statement for last two years.</li> <li>v. List of Relevant /Similar services/supply provided in the last 2 years.</li> <li>vi. Quality Certification(s) – where required.</li> <li>vii. Undertaking on judicial stamp paper that 2% earnest money is attached with the financial proposal.</li> <li>viii. OEM's Authority letter.</li> <li>ix. Non-blacklisting record certificate on Judicial stamp paper.</li> </ul> <p>2.2 Bidders should not be associated, or have been associated in the past, directly or indirectly, with a firm or any of its affiliates which have been engaged by the Procuring agency to provide consulting services for the preparation of the design, specifications, and other documents to be used for the procurement of the goods to be purchased under this Invitation for Bids.</p> <p>2.3 Government-owned enterprises in the Province of Khyber Pakhtunkhwa may participate only if they are legally and financially autonomous, if they operate under commercial law, and if they are not a dependent agency of the Government of Khyber Pakhtunkhwa.</p> <p>2.4 Bidders shall not be eligible to bid if they are under a declaration of ineligibility for corrupt and fraudulent practices issued by any government organization in accordance with the Section 44(1) KPP Rules 2014.</p>
<b>3. Eligible Goods and Services</b>	<p>3.1 All goods and related services to be supplied under the contract shall have their origin in eligible source countries of the world with whom the Islamic Republic of Pakistan has commercial relations and its Tender Documents and all expenditures made under the contract will be limited to such goods and services.</p> <p>3.2 For purposes of this clause, “origin” means the place where the goods are mined, grown, or produced, or the place from which the related services are</p>

	supplied. Goods are produced when, through manufacturing, processing, or substantial and major assembly of components, a commercially-recognized product results that is substantially different in basic characteristics or in purpose or utility from its components.
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<b>4. Cost of Tender</b>	The Bidder shall bear all costs associated with the preparation and submission of its bid, and the Purchaser named in the <b>Bid Data Sheet</b> , hereinafter referred to as "the Purchaser," will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the tender process.
<b>B. TENDER DOCUMENTS</b>	
<b>5. Content of Tender Documents</b>	<p>5.1 The goods required, tender procedures and contract terms &amp; conditions are prescribed in the tender documents. In addition to the Invitation for Bids, the tender documents include:</p> <ul style="list-style-type: none"> <li>i. Instructions to Bidders (ITB)</li> <li>ii. Bid Data Sheet</li> <li>iii. General Conditions of Contract (GCC)</li> <li>iv. Special Conditions of Contract (SCC)</li> <li>v. Schedule of Requirements</li> <li>vi. Technical Specifications</li> <li>vii. Bid Form and Price Schedules</li> <li>viii. Bid Security Form</li> <li>ix. Contract Form</li> <li>x. Performance Security Form</li> <li>xi. Letter of authority from Original Equipment Manufacturer</li> <li>xii. Original Equipment Manufacturer qualification statement</li> <li>xiii. Agent qualification statement</li> <li>xiv. Power of Attorney</li> <li>xv. Reference list of similar installations</li> <li>xvi. Integrity pact</li> </ul> <p>5.2. The Bidder is expected to examine all instructions, forms, terms, and specifications in the tender documents. Failure to furnish all information required by the tender documents or to submit a bid not substantially responsive to the tender documents in every respect will be at the Bidder's risk and may result in the rejection of its bid.</p>
<b>6. Clarification of Tender Documents</b>	An interested prospective Bidder requiring any clarification of the tender documents may notify the Purchaser in writing at the Purchaser's address indicated in the <b>Bid Data Sheet</b> . The Purchaser will respond in writing to any request for clarification of the tender documents which it receives prior to the deadline for the submission of bids prescribed in ITB Clause 19.1. Written copies of the Purchaser's response (including an explanation of the query but without identifying the source of inquiry) will be sent to all interested bidders that have received the tender documents.
<b>7. Amendment of Tender Documents</b>	<p>7.1 At any time prior to the deadline for submission of bids, the Purchaser for any reason, whether at its own initiative or in response to a clarification requested by a prospective Bidder, may modify the tender documents by amendment.</p> <p>7.2 All prospective bidders that have received the tender documents will be notified of the amendment in writing or by cable and will be binding on them.</p> <p>7.3 In order to allow prospective bidders reasonable time in which to take the amendment into account in preparing their bids, the Purchaser, at its discretion, may extend the deadline for the submission of bids.</p>

<b>C. PREPARATION OF BIDS</b>	
<b>8. Language of Bid</b>	The bid prepared by the Bidder, as well as all correspondence and documents relating to the bid exchanged by the Bidder and the Purchaser, shall be written in the language specified in the Bid Data Sheet. Supporting documents and printed literature furnished by the Bidder may be in another language provided they are accompanied by an accurate translation of the relevant passages in the language specified in the <b>Bid Data Sheet</b> , in which case, for purposes of interpretation of the Bid, the translation shall govern.
<b>9. Documents Constituting the Bid</b>	<p>The bid prepared and submitted in two separate envelopes by the Bidder shall comprise the following components each: -</p> <p><b>A. Technical Bid</b></p> <ul style="list-style-type: none"> <li>i. Letter of Bid (Bid Form) as per Form-1</li> <li>ii. Bill of quantities of items with specifications as per Form-2</li> <li>iii. Original Equipment Manufacturer's authorization as per Form 3</li> <li>iv. Original Equipment Manufacturer qualification statement as per Form-4</li> <li>v. Agent qualification statement as per Form-5</li> <li>vi. Power of Attorney as per Form-6</li> <li>vii. Reference list of similar installations as per Form-7</li> <li>viii. Installation/Commissioning/Training Undertaking by the Original Equipment Manufacturer as per Form-8</li> <li>ix. Integrity Pact as per Form-9</li> <li>x. Proof of being active taxpayer with government of Pakistan</li> <li>xi. Affidavit on judicial stamp paper to the effect that <i>"the requisite Bid Security has been placed separately in the sealed envelope of financial bid"</i>.</li> </ul> <p><b>B. Financial Bid</b></p> <ul style="list-style-type: none"> <li>i. Letter of Bid (Bid Form) as per Form-10</li> <li>ii. Price Break down schedule as per Form-11</li> <li>iii. Bid Security as per Form-12</li> </ul>
<b>10. Bid Form</b>	The Bidder shall complete the Bid Form and the appropriate Price Schedule furnished in the tender documents, indicating the goods to be supplied, a brief description of the goods, their country of origin, quantity, and prices.
<b>11. Bid Prices</b>	<p>11.1 The Bidder shall indicate on the appropriate Price Schedule the unit prices (where applicable) and total bid price of the Goods proposes to supply, install, commission, testing and training under the contract.</p> <p>11.2 The prices shall be offered in PKR for DDP UOT, Nowshera basis. The price must be written without erasures, in figures and also in words for the total price.</p> <p>11.3 Prices can be quoted for all the items/equipment or for any particular item/equipment as item-wise. Conditional offer will also be considered as non-responsive Bidder.</p> <p>11.4 Prices quoted by the Bidder shall be fixed during the Bidder's performance of the contract and not subject to variation on any account, unless otherwise specified in the Tender Documents. A bid submitted with an adjustable price quotation will be treated as non-responsive and will be rejected.</p> <p>11.5 In case the stores manufactured/available in Pakistan without involving import by the University, the quoted price shall include all charges for packing, marking, handling, installation, putting into operation, training and demonstration of the working of the equipment in the purchaser's premises.</p>

<b>12. Bid Currencies</b>	Prices may be quoted in PKR on with shipment delivered till UOT, Nowshera premises.
<b>13. Documents Establishing Bidder's Eligibility and Qualification</b>	<p>13.1 The Bidder shall furnish, as part of its bid, documents establishing the Bidder's eligibility to bid and its qualifications to perform the contract, if its bid is accepted.</p> <p>13.2 The documentary evidence of the Bidder's eligibility to bid shall establish to the Purchaser's satisfaction that the Bidder, at the time of submission of its bid, is from an eligible country as defined under ITB Clause 3.</p> <p>13.3 The documentary evidence of the Bidder's qualifications to perform the contract if its bid is accepted shall establish to the Purchaser's satisfaction:</p> <p>(a) that, in the case of a Bidder offering to supply goods under the contract which the Bidder did not manufacture or otherwise produce, the Bidder has been duly authorized by the goods' Original Equipment Manufacturer or producer to supply the goods in the Purchaser's country;</p> <p>(b) that the Bidder has the financial and technical capability necessary to perform the contract;</p> <p>(c) that, in the case of a Bidder not doing business within the Purchaser's country, the Bidder is or will be (if awarded the contract) represented by an Agent in that country equipped and able to carry out the Bidder's installation, commissioning, training, repair and maintenance obligations prescribed in the Conditions of Contract and/or Technical Specifications; and</p> <p>(d) that the Bidder meets the qualification criteria listed in the <b>Bid Data Sheet</b>.</p>
<b>14. Documents Establishing Goods' Eligibility and Conformity to Tender Documents</b>	<p>14.1 The Bidder shall furnish, as part of its bid, documents establishing the eligibility and conformity to the tender documents of all goods and services that the Bidder proposes to supply, install and commission under the contract.</p> <p>14.2 The documentary evidence of the eligibility of the goods and services shall consist of a statement in the Price Schedule of the country of origin of the goods and services offered which shall be confirmed by a certificate of origin issued at the time of shipment.</p> <p>14.3 The documentary evidence of conformity of the goods and services to the tender documents may be in the form of literature, drawings, and data, and shall consist of</p> <p>a. detailed description of the essential technical and performance characteristics of the goods,</p> <p>b. a list giving full particulars, including available sources and current prices of spare parts, special tools, etc., necessary for the proper and continuing functioning of the goods for a period to be specified in the Bid Data Sheet, following commencement of the use of the goods by the Procuring agency; and</p> <p>c. an item-by-item commentary on the Procuring agency's Technical Specifications demonstrating substantial responsiveness of the goods and services to those specifications, or a statement of deviations and exceptions to the provisions of the Technical Specifications.</p> <p>14.4 For purposes of the commentary to be furnished pursuant to ITB Clause 14.3(c) above, the Bidder shall note that standards for workmanship,</p>



	<p>material, and equipment, as well as references to brand names or catalogue numbers designated by the Procuring agency in its Technical Specifications, are intended to be descriptive only and not restrictive. The Bidder may substitute alternative standards, brand names, and/or catalogue numbers in its bid, provided that it demonstrates to the Procuring agency's satisfaction that the substitutions ensure substantial equivalence to those designated in the Technical Specifications</p>
<b>15. Bid Security</b>	<p>15.1 Pursuant to ITB Clause 9, the Bidder shall furnish, as part of its financial bid, a bid security in the amount specified in the <b>Bid Data Sheet</b>. The Bidder shall submit an affidavit on stamp paper with the technical bid that <b><i>"the requisite Bid Security of 2% of the total bid has been placed separately in the sealed envelope of financial bid"</i></b>. In Affidavit the amount of Bid Security not be disclosed by any mean. In case of failure of submission of an affidavit for bid security with the technical bid, his bid shall be rejected by the Purchaser as non-responsive.</p> <p>15.2 The bid security is required to protect the Purchaser against the risk of Bidder's conduct which would warrant the security's forfeiture, pursuant to ITB Clause 15.7.</p> <p>15.3 The bid security shall be in Pak Rupees and shall be in one of the following forms:</p> <p>i. a guarantee issued by a reputable financial institution (as defined in KPPRA Procurement Rules, 2014 amended upto date) located in the Purchaser's country, in the form provided in the tender documents or another form acceptable to the Purchaser and valid for one hundred and twenty days (120) days beyond the validity of the bid; or</p> <p>ii. Irrevocable encashable on-demand Bank Call-deposit.</p> <p>15.4 Any bid not secured in accordance with ITB Clauses 15.1 and 15.2 will be rejected by the Purchaser as nonresponsive, pursuant to ITB Clause 24.</p> <p>15.5 Unsuccessful bidders' bid securities will be discharged or returned as promptly as possible but not later than thirty (30) days after the expiration of the period of bid validity prescribed by the Purchaser pursuant to ITB Clause 16.</p> <p>15.6 The successful Bidder's bid security will be discharged upon the Bidder signing the contract, pursuant to ITB Clause 31, and furnishing the performance security, pursuant to ITB Clause 32.</p> <p>15.7 The bid security may be forfeited:</p> <p><b>(a)</b> if a <b>Bidder</b>:</p> <p>1. withdraws its bid during the period of bid validity specified by the Bidder on the Bid Form, <b>or</b></p> <p>2. does not accept the correction of errors pursuant to ITB Clause 24.2;</p> <p style="text-align: center;"><b>or</b></p> <p><b>(b)</b> in the case of a <b>successful Bidder</b>, if the Bidder fails:</p> <p>1. to sign the contract in accordance with ITB Clause 34; <b>or</b></p> <p>2. to furnish performance security in accordance with ITB Clause 35.</p>
<b>16. Period of Validity of Bids</b>	<p>16.1 Bids shall remain valid for the period specified in the <b>Bid Data Sheet</b> after the date of bid submission prescribed by the Purchaser, pursuant to ITB Clause 19. A bid valid for a shorter period shall be rejected by the Purchaser as nonresponsive.</p> <p>16.2 In exceptional circumstances, the Purchaser may solicit the Bidder's consent to an extension of the period of validity. The request and the responses thereto shall be made in writing. The bid security provided under</p>

	ITB Clause 15 shall also be suitably extended. A Bidder may refuse the request without forfeiting its bid security. A Bidder granting the request will not be required nor permitted to modify its bid, except as provided in the tender documents.
<b>17. Format and Signing of Bid</b>	<p>17.1 The Bidder shall prepare a bid which shall be typed or written on company/firm's letter-head in indelible ink and shall be signed and stamped by the Bidder or a person or persons duly authorized to bind the Bidder to the contract. All pages of the bid, except for un-amended printed literature, shall be initiated by the person or persons signing the bid.</p> <p>17.2 Any interlineations, erasures, or overwriting shall be valid only if they are initiated by the person or persons signing the bid.</p> <p>17.3 The Bidder shall furnish information as described in the Form of Bid on commissions or gratuities, if any, paid or to be paid to agents relating to this Bid, and to contract execution if the Bidder is awarded the contract.</p>

<b>D. SUBMISSION OF BIDS</b>	
<b>18. Sealing and Marking of Bids</b>	<p>18.1 The bid shall comprise a single package containing two separate envelopes. Each envelope shall contain separately the financial proposal and the technical proposal; the envelopes shall be marked as "FINANCIAL PROPOSAL" and "TECHNICAL PROPOSAL" in bold and legible letters to avoid confusion. The bid so prepared shall be sealed and submitted to the office of the DD (P&amp;D), University of Technology, Nowshera in accordance with instructions given in invitation for bids;</p> <p>18.2 The envelope shall bear the Invitation for Bids title and Procurement Reference Number, and a statement: <b>"DO NOT OPEN BEFORE 11:30 AM, Dated: 27/11/2023"</b></p>
<b>19. Deadline for Submission of Bids</b>	<p>19.1 Bids must be received by the Purchaser at the address specified under ITB Clause 18.1 no later than the time and date specified in the <b>Bid Data Sheet</b>.</p> <p>19.2 The Purchaser may, at its discretion, extend this deadline for the submission of bids by amending the tender documents in accordance with ITB Clause 7, in which case all rights and obligations of the Purchaser and bidders previously subject to the deadline will thereafter be subject to the deadline as extended.</p>
<b>20. Late Bids</b>	Any bid received by the Purchaser after the deadline for submission of bids prescribed by the Purchaser pursuant to ITB Clause 19 will be returned unopened to the Bidder.
<b>21. Modification and Withdrawal of Bids</b>	<p>21.1 The Bidder may modify or withdraw its bid after the bid's submission, provided that written notice of the modification, including substitution or withdrawal of the bids, is received by the Purchaser prior to the deadline prescribed for submission of bids.</p> <p>21.2 The Bidder's modification or withdrawal notice shall be prepared, sealed, marked, and dispatched in accordance with the provisions of ITB Clause 18. A withdrawal notice may also be sent by cable, but followed by a signed confirmation copy, postmarked not later than the deadline for submission of bids.</p> <p>21.3 No bid may be modified after the deadline for submission of bids.</p> <p>21.4 No bid may be withdrawn in the interval between the deadline for submission of bids and the expiration of the period of bid validity specified by the Bidder on the Bid Form. Withdrawal of a bid during this interval may result in the Bidder's forfeiture of its bid security, pursuant to the ITB Clause 15.6.</p>

<b>E. OPENING AND EVALUATION OF BIDS</b>	
<b>22. Opening of Bids by the Purchaser</b>	<p>22.1 The Purchaser will open only the technical bids of all the bidders in the presence of bidders' representatives who choose to attend, at the time, on the date, and at the place specified in the Bid Data Sheet. The bidders' representatives who are present shall sign a register evidencing their attendance.</p> <p>22.2 The bidders' names, bid modifications or withdrawals and such other details as the Purchaser, at its discretion, may consider appropriate, will be announced at the opening. No bid shall be rejected at bid opening, except for late bids, which shall be returned unopened to the Bidder pursuant to ITB Clause 20.</p> <p>22.3 Bids (and modifications sent pursuant to ITB Clause 21.2) that are not opened and read out at bid opening shall not be considered further for evaluation, irrespective of the circumstances.</p> <p>22.4 The Purchaser will prepare a record of the bid opening.</p>

<b>23. Clarification of Bids</b>	During the evaluation of the bids, the Purchaser may, at its discretion, ask the Bidder for a clarification of its bid. The request for clarification and the response shall be in writing, and no change in the prices or substance of the bid shall be sought, offered, or permitted.
<b>24. Evaluation Criteria</b>	Evaluation of the bids will be conducted in accordance to <b>Annexure A</b> Technical and Financial Evaluation
<b>25. Contacting the Purchaser</b>	<p>25.1 From the time of bid opening to the time of contract award, if any bidder wishes to contact the Purchaser on any matter related to the bid, it should do so in writing.</p> <p>25.2 Any effort by a Bidder to influence the Purchaser in its decisions on bid evaluation, bid comparison, or contract award may result in the rejection of the Bidder's bid</p>

<b>F. AWARD OF CONTRACT</b>	
<b>26. Post-qualification</b>	<p>26.1 In the absence of prequalification, the Purchaser will determine to its satisfaction whether the Bidder that is selected as having submitted the highest-ranking fair bid and qualified to perform the contract satisfactorily, in accordance with the criteria listed in ITB Clause 13.3.</p> <p>26.2 The determination will take into account the Bidder's financial and technical capabilities. It will be based upon an examination of the documentary evidence of the Bidder's qualifications submitted by the Bidder, pursuant to ITB Clause 13.3, as well as such other information as the Purchaser deems necessary and appropriate.</p> <p>26.3 An affirmative determination will be a prerequisite for award of the contract to the Bidder. A negative determination will result in rejection of the Bidder's bid, in which event the Purchaser will proceed to the next lowest evaluated bid to make a similar determination of that Bidder's capabilities to perform satisfactorily</p>
<b>27. Award Criteria</b>	Subject to ITB Clause 29, the Purchaser will award the contract to the <b>highest-ranking fair bid</b> , qualified as per ITB Clause 24, provided further that the Bidder is determined to be qualified to perform the contract satisfactorily
<b>28. Purchaser's Right to Vary Quantities at Time of Award</b>	The Purchaser reserves the right at the time of contract award to increase or decrease, by the percentage indicated in the <b>Bid Data Sheet</b> , the quantity of goods and services originally specified in the Schedule of Requirements without any change in unit price or other terms and conditions.
<b>29. Purchaser's Right to Accept Any Bid and to Reject Any or</b>	The Purchaser reserves the right to accept or reject any bid, and to annul the tender process and reject all bids at any time prior to contract award, without thereby incurring any liability to the affected Bidder or bidders.

All Bids	
<b>30. Notification of Award</b>	<p>30.1 Prior to the expiration of the period of bid validity, the Purchaser will notify the successful Bidder in writing by registered letter or by cable, to be confirmed in writing by registered letter, that its bid has been accepted.</p> <p>30.2 The notification of award will constitute the formation of the Contract.</p> <p>30.3 Upon the successful Bidder's furnishing of the performance security pursuant to ITB Clause 32, the Purchaser will promptly notify the name of the winning Bidder to each unsuccessful bidder and will discharge its bid security, pursuant to ITB Clause 15.</p> <p>30.4 If, after notification of award, a Bidder wishes to ascertain the grounds on which its bid was not selected, it should address its request to the Purchaser. The Purchaser will promptly respond in writing to the unsuccessful bidder.</p>
<b>31. Signing of Contract</b>	<p>31.1 At the same time as the Purchaser notifies the successful Bidder that its bid has been accepted, the Purchaser will send the Bidder the Contract Form provided in the tender documents, incorporating all agreements between the parties.</p> <p>31.2 Within ten (10) days of receipt of the Contract Form, the successful Bidder shall sign and date the contract and return it to the Purchaser.</p>
<b>32. Performance Security</b>	<p>32.1 Within ten (10) days of the receipt of notification of award from the Purchaser, the successful Bidder shall furnish the performance security in accordance with the Conditions of Contract, in the Performance Security Form provided in the tender documents, or in another form acceptable to the Purchaser.</p> <p>32.2 Failure of the successful Bidder to comply with the requirement of ITB Clause 33.2 or ITB Clause 34.1 shall constitute sufficient grounds for the annulment of the award and forfeiture of the bid security, in which event the Purchaser may make the award to the next high-ranking fair Bid or call for new bids.</p>
<b>33. Corrupt or Fraudulent Practices</b>	<p>The University of Technology, Nowshera requires that Bidders/ Suppliers/ Contractors under contract, observe the highest standard of ethics during the procurement and execution of such contracts. In pursuance of this policy, University of Technology, Nowshera</p> <p>(a) defines for the purposes of this provision, the terms set forth below as follows:</p> <p>(i) "corrupt practice" means the offering, giving, receiving or soliciting of anything of value to influence the action of a public official in the procurement process or in contract execution; and</p> <p>(ii) "fraudulent practice" means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the Purchaser, and includes collusive practice among Bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the Purchaser of the benefits of free and open competition;</p> <p>(b) will reject a proposal for award if it determines that the Bidder recommended for award has engaged in corrupt or fraudulent practices in competing for the contract in question;</p> <p>(c) will declare a firm ineligible, either indefinitely or for a stated period of time, to be awarded at University of Technology, Nowshera, contract if it at any time determines that the firm has engaged in corrupt or fraudulent practices in competing for, or in executing, a University of Technology,</p>

	Nowshera contract .
<b>34. Integrity Pact</b>	The Bidder shall sign and stamp the Integrity Pact provided at Form -7 to Bid in the Bidding Document for all Provincial Government procurement contracts exceeding Rupees ten million. Failure to such Integrity Pact shall make the bidder non-responsive.

### Section III. Bid Data Sheet

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

Introduction	
<b>ITB 1.1</b>	<b>Name of funding Agency:</b> Industries Commerce & Technical Education Deptt, KP
<b>ITB 1.1</b>	<b>Name of Procuring Agency:</b> University of Technology, Nowshera
<b>ITB 1.1</b>	<b>Name of Contract.</b> Procurement of brand-new lab equipment for the establishment of Electronics Engineering Technology Labs"
<b>ITB 6</b>	<b>Purchaser's address, telephone, telex, and facsimile numbers.</b> Deputy Director (P&D), UOT, Nowshera Phone#+92-923-560301 Ext: 105 E-mail: <a href="mailto:lais@uotnowshera.edu.pk">lais@uotnowshera.edu.pk</a> E-mail: <a href="mailto:abubakar@uotnowshera.edu.pk">abubakar@uotnowshera.edu.pk</a>
<b>ITB 8</b>	<b>Language of the bid.</b> English

Bid Price and Currency	
<b>ITB 11.3</b>	<b>Bid Prices</b>  The prices shall be offered in PKR for with shipment delivered till UOT, Nowshera Premises.
<b>ITB 11.4</b>	Prices shall be quoted for all the items and for the entire quantity demanded. Partial lot or partial quantity offers shall be rejected. Prices can be quoted for all the items or for any particular item. However, the price offered for any line item must be for the entire quantity demanded. Partial quantity offers shall be straightaway be rejected. Conditional offers shall be considered as non-responsive.
<b>ITB 11.6</b>	The prices quoted by the Bidder shall be fixed during the Bidder's performance of the contract and not subject to variation on any account.
<b>ITB 12</b>	<b>Bid currencies</b> Prices shall be quoted in PKR for with shipment delivered till UOT, Nowshera Premises.

<b>Preparation and Submission of Bids</b>	
<b>ITB 15.1</b>	<b>Amount of bid security.</b> The Bidder shall furnish, as part of its financial bid, a bid security of two percent of the total price of the quoted bid.
<b>ITB 16.1</b>	<b>Bid validity period.</b> Bids shall remain valid for a period of 120 days after the date of bid's submission prescribed by the Purchaser, pursuant to ITB Clause 19. A bid valid for a shorter period shall be rejected by the Purchaser as nonresponsive.
<b>ITB 16.2</b>	<b>Extension of the period of validity:</b> In exceptional circumstances, the Purchaser may solicit the Bidder's consent to an extension of the period of validity. The request and the responses thereto shall be made in writing. A Bidder may refuse the request without forfeiting its bid security. A Bidder granting the request will not be required nor permitted to modify its bid.
<b>ITB 18.1</b>	<b>Address for bid submission.</b> Tender Box (installed in the office of Procurement Officer or Main Conference Room, University of Technology, Nowshera.
<b>ITB 18.2</b>	<b>IFB Title.</b> Procurement of brand-new lab equipment for the establishment of "Electronics Technology Labs" DDP-UOT, Nowshera" basis <b>Procurement Reference Number:</b> UOT/P&D/Proc/2023-24/ Labs Equipment/ Electronics/02
<b>ITB 19.1</b>	<b>Deadline for bid submission.</b> 27 <sup>th</sup> November 2023 at 11:00 AM in the office of Procurement Officer, Nowshera.
<b>ITB 22.1</b>	<b>Time, date, and place for bid opening.</b> 11:30 AM on 27 <sup>th</sup> November 2023, Conference Room of University of Technology, Nowshera

<b>Bid Evaluation</b>	
<b>ITB 24</b>	The successful bidder would be determined by the high-ranking fair bid received subject to the bid meeting the specifications and other terms and conditions specified in ITB 24.

<b>Contract Award</b>	
<b>ITB 28</b>	Percentage for quantity increase or decrease. The Purchaser reserves the right at the time of contract award to increase or decrease the quantity of goods and services originally specified in the Schedule of Requirements without any change in unit price or other terms and conditions. The university has the right to go for 2 <sup>nd</sup> and 3 <sup>rd</sup> bidder after due diligence, in case of 1 <sup>st</sup> high-ranking fair bidder fails to fulfill the requirements of UOT, Nowshera.

<b>Performance Security</b>	
<b>ITB 31</b>	Within thirty (10) days of the receipt of notification of award from the Purchaser, the successful Bidder shall furnish the performance security in accordance with the Conditions of Contract, in the Performance Security Form provided in the tender documents, or in another form acceptable to the Purchaser.
<b>GCC 7.1 (SCC-3)</b>	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 a period of one year i.e. warranty period.

<b>Delivery</b>	
<b>GCC 10 (SCC6)</b>	The equipment shall be delivered to the Purchaser on the basis of installed and workable condition within 90 days. The Supplier shall be responsible for the delivery of the equipment to the designated location of the Purchaser in UOT, Nowshera.

<b>Training</b>	
<b>GCC 13(e)</b>	The successful Bidder shall arrange local training of the Purchaser's personnel, at the purchaser's premises, in assembly, start-up, operation, maintenance, and/or repair of the supplied Goods/equipment.



<b>Warranty</b>	
<b>GCC 15</b>	Warranty shall remain valid for minimum twelve (12) months after the Goods, or any portion thereof as the case may be, have been delivered, installed and commissioned at the final destination of the Purchaser.

<b>Liquidated Damages</b>	
<b>GCC 23 (SCC 13)</b>	<p>Subject to GCC Clause 25, if the Supplier fails to deliver any or all of the Goods or to perform the Services within the period(s) specified in the Contract, the Purchaser shall, without prejudice to its other remedies under the Contract, deduct from the Contract Price, as liquidated damages, a sum equivalent to the percentage specified in SCC of the delivered price of the delayed Goods or unperformed Services for each week or part thereof of delay until actual delivery or performance, up to a maximum deduction of the percentage <b>specified in SCC</b>. Once the maximum is reached, the Purchaser may consider termination of the Contract pursuant to GCC Clause 24.</p> <p>Maximum deduction up to 10% @ 0.5% per week.</p>

## Section IV. General Conditions of Contract

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## General Conditions of Contract

<p><b>1. Definitions</b></p>	<p>In this Contract, the following terms shall be interpreted as indicated:</p> <p>a. <b>“The Contract”</b> means the agreement entered into between the Purchaser and the Supplier, as recorded in the Contract Form signed by the parties, including all attachments and appendices thereto and all documents incorporated by reference there in.</p> <p>b. <b>“The Contract Price”</b> means the price payable to the Supplier under the Contract for the full and proper performance of its contractual obligations.</p> <p>c. <b>“The Goods”</b> means all of the equipment, machinery, and/or other materials which the Supplier is required to supply to the Purchaser under the Contract.</p> <p>d. <b>“The Services”</b> means those services ancillary to the supply of the Goods, such as transportation and any other incidental services, such as installation, commissioning, provision of technical assistance, training, and other such obligations of the Supplier covered under the Contract.</p> <p>e. <b>“GCC”</b> means the General Conditions of Contract contained in this section.</p> <p>f. <b>“SCC”</b> means the Special Conditions of Contract.</p> <p>g. <b>“The Purchaser”</b> means the organization purchasing the Goods, as <b>named in SCC</b>.</p> <p>h. <b>“The Purchaser’s country”</b> is the country <b>named in SCC</b>.</p> <p>i. <b>“The Supplier”</b> means the individual or firm supplying the Goods and Services under this Contract and <b>named in SCC</b>.</p> <p>j. <b>“Day”</b> means calendar day.</p>
<p><b>2. Application</b></p>	<p>These General Conditions shall apply to the extent that they are not superseded by provisions of other parts of the Contract.</p>

<b>3. Country of Origin</b>	<p>3.1 All Goods and Services supplied under the Contract shall have their origin in the countries and territories eligible under the rules of the Government of Pakistan.</p> <p>3.2 For purposes of this Clause, "origin" means the place where the Goods were mined, grown, or produced, or from which the Services are supplied. Goods are produced when, through manufacturing, processing, or substantial and major assembly of components, a commercially recognized new product results that is substantially different in basic characteristics or in purpose or utility from its components.</p> <p>3.3 The origin of Goods and Services is distinct from the nationality of the Supplier.</p>
<b>4. Standards</b>	<p>The Goods supplied under this Contract shall conform to the standards mentioned in the Technical Specifications, and, when no applicable standard is mentioned, to the authoritative standards appropriate to the Goods' country of origin. Such standards shall be the latest issued by the concerned institution.</p>
<b>5. Use of Contract Documents and Information; and Inspection</b>	<p>5.1 The Supplier shall not, without the Purchaser's prior written consent, disclose the Contract, or any provision thereof, or any specification, plan, drawing, pattern, sample, or information furnished by or on behalf of the Purchaser in connection therewith, to any person other than a person employed by the Supplier in the performance of the Contract. Disclosure to any such employed person shall be made in confidence and shall extend only so far as may be necessary for purposes of such performance.</p> <p>5.2 The Supplier shall not, without the Purchaser's prior written consent, make use of any document or information enumerated in GCC Clause 5.1 except for purposes of performing the Contract.</p> <p>5.3 Any document, other than the Contract itself, enumerated in GCC Clause 5.1 shall remain the property of the Purchaser and shall be returned (all copies) to the Purchaser on completion of the Supplier's performance under the Contract if so required by the Purchaser.</p> <p>5.4 The Supplier shall permit the Purchaser to inspect the Supplier's records relating to the performance of the Supplier.</p>
<b>6. Patent Rights</b>	<p>The Supplier shall indemnify the Purchaser against all third-party claims of infringement of patent, trademark, or industrial design rights arising from use of the Goods or any part thereof in the Purchaser's country.</p>

<b>7. Performance Security</b>	<p>7.1 Within ten (10) days of receipt of the notification of Contract award, the successful supplier shall furnish to the Purchaser the performance in the amount <b>specified in SCC</b>.</p> <p>7.2 The proceeds of the performance security shall be payable to the Purchaser as compensation for any loss resulting from the Supplier's failure to complete its obligations under the Contract.</p> <p>7.3 The performance security shall be denominated in the currency of the Contract, or in a freely convertible currency acceptable to the Purchaser and shall be in one of the following forms:</p> <p><b>(a)</b> a guarantee issued by a reputable financial</p>
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	<p>institution (as defined by GoKPPRA Procurement Rules, 2014) located in the Purchaser's country or abroad, acceptable to the Purchaser, in the form provided in the tender documents or another form acceptable to the Purchaser; or</p> <p><b>(b)</b> a cashier's or certified check.</p> <p>7.4 The performance security will be discharged by the Purchaser and returned to the Supplier not later than ten (10) days following the date of completion of the Supplier's performance obligations under the Contract, including any warranty obligations, unless otherwise <b>specified in SCC.</b></p>
<b>8. Inspections and Tests</b>	<p>8.1 The Purchaser shall have the right to inspect and/or to test the Goods to confirm their conformity to the Contract specifications.</p> <p>8.2 Should any inspected or tested Goods fail to conform to the Specifications, the Purchaser may reject the Goods, and the Supplier shall either replace the rejected Goods or make alterations necessary to meet specification requirements free of cost to the Purchaser.</p> <p>8.3 The Purchaser's right to inspect, test and, where necessary, reject the Goods after the Goods' arrival in the Purchaser's country shall in no way be limited or waived by reason of the Goods having previously been inspected, tested, and passed prior to the Goods' shipment from the country of origin.</p> <p>8.4 Nothing in GCC Clause 8 shall in any way release the Supplier from any warranty or other obligations under this Contract.</p>
<b>9. Packing</b>	<p>9.1 The Supplier shall provide such packing of the Goods as is required to prevent their damage or deterioration during transit to their final destination, as indicated in the Contract. The packing shall be sufficient to withstand, without limitation, rough handling during transit and exposure to extreme temperatures, salt and precipitation during transit, and open storage. Packing case size and weights shall take into consideration, where appropriate, the remoteness of the Goods' final destination and the absence of heavy handling facilities at all points in transit.</p> <p>9.2 The packing, marking, and documentation within and outside the packages shall comply strictly with such special requirements as shall be expressly provided for in the Contract, including additional requirements, if any, specified in SCC, and in any subsequent instructions ordered by the Purchaser.</p>
<b>10. Delivery and Documents</b>	<p>10.1 Delivery of the Goods shall be made by the Supplier in accordance with the terms specified in the Schedule of Requirements. The details of shipping and/or other documents to be furnished by the Supplier are specified in SCC.</p> <p>10.2 For purposes of the Contract, DDP trade term used to describe the obligations of the parties shall have the meaning assigned to it by <i>Inco-terms</i> previously published by the International Chamber of Commerce, Paris.</p> <p>10.3 Documents to be submitted by the Supplier are <b>specified in SCC.</b></p>
<b>11. Insurance</b>	<p>The supplier shall arrange for the insurance of the goods, which shall cover full period of works as defined in DDP Inco-Term trade term. The insurance premium shall be</p>

	paid by the seller.
<b>12. Transportation</b>	The Supplier shall be required under the Contract to transport the goods to UOT, Nowshera, Pakistan, transport to destination, including storage, as shall be specified in the contract, shall be arranged by the Supplier, and related costs shall be included in the contract price.
<b>13. Incidental Services</b>	<p>13.1 The Supplier may be required to provide any or all of the following services, including additional services, if any, <b>specified in SCC:</b></p> <ul style="list-style-type: none"> <li>a. performance or supervision of on-site assembly and/or start-up of the supplied Goods;</li> <li>b. furnishing of tools required for assembly and/or maintenance of the supplied Goods;</li> <li>c. furnishing of a detailed operations and maintenance manual for each appropriate unit of the supplied Goods;</li> <li>d. performance or supervision of maintenance and/or repair of the supplied Goods, for a period of time agreed by the parties, provided that this service shall not relieve the Supplier of any warranty obligations under this Contract; and</li> <li>e. training of the Purchaser's personnel, at the Purchaser's premises, in assembly, start-up, operation, maintenance, and/or repair of the supplied Goods.</li> </ul> <p>13.2 Prices charged by the Supplier for incidental services shall be included in the Contract Price for the Goods and shall not exceed the prevailing rates charged to other parties by the Supplier for similar services.</p>
<b>14. Spare Parts</b>	<p>As <b>specified in SCC</b>, the Supplier may be required to provide any or all of the following materials, notifications, and information pertaining to spare parts manufactured or distributed by the Supplier:</p> <ul style="list-style-type: none"> <li>a. such spare parts as the Purchaser may elect to purchase from the Supplier, provided that this election shall not relieve the Supplier of any warranty obligations under the Contract; and</li> <li>b. in the event of termination of production of the spare parts: <ul style="list-style-type: none"> <li>i. advance notification to the Purchaser of the pending termination, in sufficient time to permit the Purchaser to procure needed requirements; and</li> <li>ii. following such termination, furnishing at no cost to the Purchaser, the blueprints, drawings, and specifications of the spare parts, if requested.</li> </ul> </li> </ul>
<b>15. Warranty</b>	15.1 The Supplier warrants that the Goods supplied under the Contract are new, unused, of the most recent or current models, and that they incorporate all recent improvements in design and materials unless provided otherwise in the Contract. The Supplier further warrants that all Goods supplied under this Contract shall have no defect, arising from design, materials, or workmanship (except when the design and/or material is required by the Purchaser's specifications) or from any act or omission of the Supplier, that may develop under normal use of the supplied Goods in the conditions prevailing in the country of final destination from design, materials, or workmanship (except when the design and/or material is required by the Purchaser's specifications) or from any act or omission of the Supplier, that may develop under normal use of the supplied Goods in the conditions

	<p>prevailing in the country of final destination.</p> <p>15.2 This warranty shall remain valid for minimum twelve (12) months after the Goods, or any portion thereof as the case may be, have been delivered, installed and commissioned at the final destination indicated in the Contract.</p> <p>15.3 The Purchaser shall promptly notify the Supplier in writing of any claims arising under this warranty.</p> <p>15.4 Upon receipt of such notice, the Supplier shall, within the period specified in SCC and with all reasonable speed, repair or replace the defective Goods or parts thereof, without costs to the Purchaser.</p> <p>15.5 If the Supplier, having been notified, fails to remedy the defect(s) within the period specified in SCC, the Purchaser may proceed to take such remedial action as may be necessary, at the Supplier's risk and expense and without prejudice to any other rights which the Purchaser may have against the Supplier under the Contract.</p>
<b>16. Payment</b>	The method and conditions of payment to be made to the Supplier under this Contract shall be <b>specified in SCC</b> .
<b>17. Prices</b>	Prices charged by the Supplier for Goods delivered and Services performed under the Contract shall not vary from the prices quoted by the Supplier in its bid.
<b>18. Change Orders</b>	<p>18.1 The Purchaser may at any time, by a written order given to the Supplier pursuant to GCC Clause 32, make changes within the general scope of the Contract in any one or more of the following:</p> <ul style="list-style-type: none"> <li>i. drawings, designs, or specifications, where Goods to be furnished under the Contract are to be specifically manufactured for the Purchaser;</li> <li>ii. the method of shipment or packing;</li> <li>iii. the place of delivery; and/or</li> <li>iv. the Services to be provided by the Supplier.</li> </ul> <p>18.2 If any such change causes an increase or decrease in the cost of, or the time required for, the Supplier's performance of any provisions under the Contract, an equitable adjustment shall be made in the Contract Price or delivery schedule, or both, and the Contract shall accordingly be amended. Any claims by the Supplier for adjustment under this clause must be asserted within thirty (30) days from the date of the Supplier's receipt of the Purchaser's change order.</p>
<b>19. Contract Amendments</b>	Subject to GCC Clause 18, no variation in or modification of the terms of the Contract shall be made except by written amendment signed by the parties.
<b>20. Assignment</b>	The Supplier shall not assign, in whole or in part, its obligations to perform under this Contract, except with the Purchaser's prior written consent.
<b>21. Subcontracts</b>	<p>21.1 The Supplier shall notify the Purchaser in writing of all subcontracts awarded under this Contract if not already specified in the bid. Such notification, in the original bid or later, shall not relieve the Supplier from any liability or obligation under the Contract.</p> <p>21.2 Subcontracts must comply with the provisions of GCC Clause 3.</p>

<b>22. Delays in the Supplier's Performance</b>	<p>22.1 Delivery of the Goods and performance of Services shall be made by the Supplier in accordance with the time schedule prescribed by the Purchaser in the Schedule of Requirements.</p> <p>22.2 If at any time during performance of the Contract, the Supplier or its subcontractor(s) should encounter conditions impeding timely delivery of the Goods and performance of Services, the Supplier shall promptly notify the Purchaser in writing of the fact of the delay, its likely duration and its cause(s). As soon as practicable after receipt of the Supplier's notice, the Purchaser shall evaluate the situation and may at its discretion extend the Supplier's time for performance, with or without liquidated damages, in which case the extension shall be ratified by the parties by amendment of Contract.</p> <p>22.3 Except as provided under GCC Clause 25, a delay by the Supplier in the performance of its delivery obligations shall render the Supplier liable to the imposition of liquidated damages pursuant to GCC Clause 23, unless an extension of time is agreed upon pursuant to GCC Clause 22.2 without the application of liquidated damages.</p>
<b>23. Liquidated Damages</b>	<p>Subject to GCC Clause 25, if the Supplier fails to deliver any or all of the Goods or to perform the Services within the period(s) specified in the Contract, the Purchaser shall, without prejudice to its other remedies under the Contract, deduct from the Contract Price, as liquidated damages, a sum equivalent to the percentage specified in SCC of the delivered price of the delayed Goods or unperformed Services for each week or part thereof of delay until Actual delivery or performance, upto a maximum deduction of the percentage <b>specified in SCC</b>. Once the maximum is reached, the Purchaser may consider termination of the Contract pursuant to GCC Clause 24.</p>

<b>24. Termination for Default</b>	<p>The Purchaser, without prejudice to any other remedy for breach of Contract, by written notice of default sent to the Supplier, may terminate this Contract in whole or in part:</p> <ul style="list-style-type: none"> <li>i. if the Supplier fails to deliver any or all of the Goods within the period(s) specified in the Contract, or within any extension thereof granted by the Purchaser pursuant to GCC Clause 22; or</li> <li>ii. if the Supplier fails to perform any other obligation(s) under the Contract.</li> <li>iii. if the Supplier, in the judgment of the Purchaser, has engaged in corrupt or fraudulent practices in competing for or in executing the Contract.</li> </ul> <p>For the purpose of this clause:  "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value to influence the action of a public official in the procurement process or in contract execution.  "fraudulent practice" means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the Borrower, and includes collusive practice among bidders (prior to or</p>
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	<p>after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the Borrower of the benefits of free and open competition.</p> <p>24.2 In the event the Purchaser terminates the Contract in whole or in part, pursuant to GCC Clause 24.1, the Purchaser may procure, upon such terms and in such manner as it deems appropriate, Goods or Services similar to those undelivered, and the Supplier shall be liable to the Purchaser for any excess costs for such similar Goods or Services. However, the Supplier shall continue performance of the Contract to the extent not terminated.</p>
<b>25. Force Majeure</b>	<p>25.1 Notwithstanding the provisions of GCC Clauses 22, 23, and 24, the Supplier shall not be liable for forfeiture of its performance security, liquidated damages, or termination for default if and to the extent that its delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure.</p> <p>25.2 For purposes of this clause, "Force Majeure" means an event beyond the control of the Supplier and not involving the Supplier's fault or negligence and not foreseeable. Such events may include, but are not restricted to, acts of the Purchaser in its sovereign capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions, and freight embargoes.</p> <p>25.3 If a Force Majeure situation arises, the Supplier shall promptly notify the Purchaser in writing of such condition and the cause thereof. Unless otherwise directed by the Purchaser in writing, the Supplier shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.</p>
<b>26. Termination for Insolvency</b>	<p>The Purchaser may at any time terminate the Contract by giving written notice to the Supplier if the Supplier becomes bankrupt or otherwise insolvent. In this event, termination will be without compensation to the Supplier, provided that such termination will not prejudice or affect any right of action or remedy which has accrued or will accrue thereafter to the Purchaser.</p>
<b>27. Termination for Convenience</b>	<p>27.1 The Purchaser, by written notice sent to the Supplier, may terminate the Contract, in whole or in part, at any time for its convenience. The notice of termination shall specify that termination is for the Purchaser's convenience, the extent to which performance of the Supplier under the Contract is terminated, and the date upon which such termination becomes effective.</p> <p>27.2 The Goods that are complete and ready for shipment within thirty (30) days after the Supplier's receipt of notice of termination shall be accepted by the Purchaser at the Contract terms and prices. For the remaining Goods, the Purchaser may elect:</p> <p style="text-align: center;"><b>a.</b> to have any portion completed and</p>

	<p>delivered at the Contract terms and prices; and/or</p> <p><b>b.</b> to cancel the remainder and pay to the Supplier an agreed amount for partially completed Goods and Services and for materials and parts previously procured by the Supplier.</p>
<b>28. Settlement of Disputes</b>	<p>28.1 The Purchaser and the Supplier shall make every effort to resolve amicably by direct informal negotiation any disagreement or dispute arising between them under or in connection with the contract.</p> <p>28.2 If, after thirty (30) days from the commencement of such informal negotiation, the Purchaser and Supplier have been unable to resolve amicably a contract dispute, either party may require that the dispute be referred for resolution to the formal mechanisms specified in SCC. These mechanisms may include, but are not restricted to, conciliation mediated by a third part, adjudication in an agreed manner and/or arbitration.</p>
<b>29. Governing Language</b>	<p>The Contract shall be written in the language <b>specified in SCC</b>. Subject to GCC Clause 30, the version of the Contract written in the specified language shall govern its interpretation. All correspondence and other documents pertaining to the Contract which are exchanged by the parties shall be written in the same language.</p>
<b>30. Applicable Law</b>	<p>The Contract shall be interpreted in accordance with the laws of the Purchaser's country, unless otherwise <b>specified in SCC</b>.</p>
<b>31. Notices</b>	<p>31.1 Any notice given by one party to the other pursuant to this Contract shall be sent to the other party in writing or by cable, telex, or facsimile and confirmed in writing to the other party's address <b>specified in SCC</b>.</p> <p>31.2 A notice shall be effective when delivered or on the notice's effective date, whichever is later.</p>
<b>32. Taxes and Duties</b>	<p>The Supplier shall be entirely responsible for all taxes, duties, license fees, etc., incurred until delivery of the contracted Goods to the Purchaser. The Supplier shall cover the Insurance premium where required.</p>

## **Section V. Special Conditions of Contract**

### **Table of Clauses**

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## **Special Conditions of Contract**

The following Special Conditions of Contract shall supplement the General Conditions of Contract. Whenever there is a conflict, the provisions herein shall prevail over those in the General Conditions of Contract. The corresponding clause number of the GCC is indicated in parentheses.

### **1. Definitions (GCC Clause 1)**

GCC 1.1 (g)—The Purchaser is: University of Technology, Nowshera- Pakistan

GCC 1.1 (h)—The Purchaser's country is: Islamic Republic of Pakistan GCC 1.1

(i)—The Supplier is:

### **2. Country of Origin (GCC Clause 3)**

All countries and territories declared by Government of Pakistan as eligible for procurement of Goods, Works, and Services in Government-Financed Procurement”.

### **3. Performance Security (GCC Clause 7)**

GCC 7.1—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 a period of one year i.e. warranty period.

### **4. Inspections and Tests (GCC Clause 8)**

GCC 8.1— The Purchaser shall have the right to inspect and/or to test the Goods to confirm their conformity to the Contract specifications.

GCC 8.2— Should any inspected or tested Goods fail to conform to the Specifications, the Purchaser may reject the Goods, and the Supplier shall either replace the rejected Goods or make alterations necessary to meet specification requirements free of cost to the Purchaser.

GCC 8.3— The Purchaser's right to inspect, test and, where necessary, reject the Goods after the Goods' arrival in the Purchaser's country shall in no way be limited

or waived by reason of the Goods having previously been inspected, tested, and passed prior to the Goods' shipment from the country of origin.

## **5. Packing (GCC Clause 9)**

The following SCC shall supplement GCC Clause 9.2:

All the equipment shall be packed suitably. The Contractor shall be responsible for the equipment to be free from damage or other untoward effects due to transportation. Each package shall be marked as follows:

- a. GDs (if any)
- b. Contact Number
- c. Final Destination
- d. Number of Case
- e. Gross Weight, Net Weight(kg)
- f. Measurement (length x width x height in cm or inches)

## **6. Delivery and Documents (GCC Clause 10) For Goods supplied from abroad :**

GCC 10.3— 6.1 The equipment shall be delivered to the Purchaser on the basis of installed and workable condition within 90 days. The Supplier shall be responsible for manufacturing and delivery of the equipment/stores from their workshop to the designated location of the Purchaser in Nowshera.

6.2 Upon shipment, the Supplier shall notify the Purchaser in writing the full details of the shipment, including a description of Goods, quantity, and usual transport documents. The Supplier shall mail the following documents to the Purchaser:

- (i) copies of the Supplier's invoice showing Goods' description, quantity, unit price, and total amount;
- (ii) copies of the packing list identifying contents of each package;
- (iii) Original Equipment Manufacturer's or Supplier's warranty certificate;
- (iv) Certificate of origin.

### **6.3 For Goods from within the Purchaser's country:**

GCC 10.3—Upon delivery of the Goods to the transporter, the Supplier shall notify the Purchaser in writing and mail the following documents to the Purchaser:

- (i) copies of the Supplier's invoice showing Goods' description, quantity, unit price, and total amount;
- (ii) delivery note, railway receipt, or truck receipt;
- (iii) Original Equipment Manufacturer's warranty certificate;
- (iv) Certificate of origin.

The above documents shall be received by the Purchaser before arrival of the

Goods and, if not received, the Supplier will be responsible for any consequent expenses.

#### **7. Insurance (GCC Clause 11)**

GCC 11.1—The seller shall arrange for the insurance of the goods, which shall cover full period of works as defined in DDP Inco-Term trade term. The insurance premium shall be paid by the seller.

#### **8. Incidental Services (GCC Clause 13)**

GCC 13.1—Incidental services to be provided have been provided in GCC 13.1.

#### **9. Spare Parts (GCC Clause 14)**

GCC 14.1—Supplier shall carry sufficient inventories to assure ex-stock supply of consumable spares for the Goods, as and when required.

#### **10. Warranty (GCC Clause 15)**

GCC 15.2— The Supplier shall, in addition, comply with the performance and/or consumption guarantees specified under the Contract.

#### **11. Payment (GCC Clause 16)**

GCC 16.1—The method and conditions of payment to be made to the Supplier under this Contract shall be as follows:

Payment for Goods and Services supplied from within the Purchaser's country:

Payment for Goods and Services supplied from within the Purchaser's country shall be made in Pak Rupees after completion of work.

#### **12. Prices (GCC Clause 17)**

GCC 17— Price shall not be adjusted in any case.

#### **13. Liquidated Damages (GCC Clause 23)**

GCC 23—Applicable rate:

Maximum deduction upto 10% @ 0.5% per week.

#### **14. Settlement of Disputes (GCC Clause 28)**

GCC 28— In the case of a dispute between the Purchaser and the Supplier, the dispute shall be referred to adjudication or arbitration in accordance with the laws of the Purchaser's country.

#### **15. Governing Language (GCC Clause 29)**

GCC 29—The Governing Language shall be English.

#### **16. Applicable Law (GCC Clause 30)**

GCC 30—The Applicable Law shall be interpreted in accordance with the laws of

Islamic Republic of Pakistan.

#### **17. Notices (GCC Clause 31)**

GCC 31.1—Purchaser's address for notice purposes:

— University of Technology, Nowshera— Pakistan.

— Supplier's address for notice purposes:

## **Section VI. Scope of Work and Schedule of Requirements**

The successful Supplier shall set up state-of-the-art labs of brand-new equipment with standard accessories Electrical Engineering Technology as detailed in technical specifications; their safe transportation to the Purchaser and install, commission and test operate the equipment and train the Purchaser's personnel on the operation and maintenance of such equipment.

In consideration thereof the Supplier will quote his price which will cover the cost of all items/activities to be carried out by the Supplier for the installation, commissioning, test operation, demonstration of its functions and working, sending Engineers to the Purchaser's premises and arranging training for the University's Personnel on equipment at the said laboratories. All civil works, if required, for installation, commissioning and training of purchased goods will be carried out by the Purchaser.

The work referred to above shall be completed within 90 days after execution of the contract with the Purchaser.

## **Section VII. Technical Specifications**

### **1. GENERAL CONDITIONS**

1.1 These specifications explain the General Conditions, Bill of Quantities (Equipment List) and Technical Specifications. The Bill of Quantities indicates the description of equipment to be provided, their quantity and required works in connection with the supply and installation of equipment. Technical Specifications define the minimum technical requirements for each item of equipment. General Conditions describe the requirements common to all the equipment.

#### **1.2 Scope of Work**

The general scope of the work is to include the following as specifically defined hereunder for supply of equipment and spare parts, and other works on this Project.

##### **1. Supply and Installation of the Equipment.**

All the equipment supplied under the Project shall be installed and brought into workable conditions by the Supplier at the locations and places designated by the Purchaser in Nowshera.

2. Dispatch of Technical Personnel to the site for installation, instructions, commissioning and trainings.

#### **1.3 Location**

Establishment of "Electronics Technology Labs" at UOT, Nowshera"

### **2. GENERAL REQUIREMENTS.**

#### **2.1 Specifications**

Minimum technical requirements for each piece of equipment are described in the Technical Specifications. All the equipment to be supplied shall be brand new and unused and shall be equal or superior in quality, performance and standards prescribed on the Technical Specifications.

#### **2.2 Electrical Ratings and Standards.**

The equipment shall conform to the following ratings and standards wherever applicable.

1. All the electrically operated equipment specified herein shall be single-phase, AC 220 V $\pm$ 10%, 50 Hz, and three-phase AC 440V $\pm$ 10%, 50 Hz, unless otherwise specified.

2. Adequate built-in AVRs shall be arranged by the Supplier for the equipment whose electricity voltage change exerts a serious influence upon its function. Suitable electrical wiring system shall be arranged to cover the whole



equipment in the room by one unit of AVR of suitable capacity in case such necessity exists.

3. Electrical Plugs for the equipment shall conform to local regulation and standard.

**2.3 Standards and Dimensions.**

All the equipment and work shall conform to the International and source country standards wherever/whichever applicable.

All dimensions of the equipment shall be stated in metric system unless otherwise specified in the Technical Specifications.

**2.4 Name Plate**

All the equipment shall be provided with name plates/ model numbers on a suitable place of the equipment.

**2.5 Packing, Transportation and Storage.**

**1. Packing and Transportation.**

All the equipment shall be packed suitably. The Supplier shall be responsible for the equipment to be free from damage or other untoward effects due to transportation. Each package shall be marked as follows with indelible paint in conspicuous English print words:

- a. GDs
- b. Contact Number
- c. Final Destination
- d. Number of Case
- e. Gross Weight, Net Weight(kg)
- f. Measurement (length x width x height in cm or inches)

**3. EQUIPMENT**

The items specified in the Bill of Quantities shall be supplied by the Supplier on the basis of installed and workable conditions on the location designated by the Purchaser.

**4. ACCESSORIES AND SPAREPARTS**

**4.1 Accessories**

The Supplier shall provide Original Equipment Manufacturer's standard accessories as well as all the accessories stipulated in the Technical Specification as a part of the equipment.

#### **4.2 Consumables during Commissioning.**

Supplier shall prepare sufficient quantity of reagents, test piece, etc. consumed during commissioning of the installed equipment including instructions on operation and maintenance, wherever applicable..

### **5. INSTALLATION, INSPECTION AND EXPATRIATE INSTRUCTIONS**

**5.1** Each equipment shall be securely installed at designated locations in accordance with the Purchaser's instructions. Prior to the installation, the Supplier shall check and inspect the connection and request the Purchaser to arrange the utility supply from installed outlet by making proper adjustment wherever necessary. The utilities required for installation shall be provided by the Purchaser. The Supplier shall check all components of the equipment to ensure that their working conditions are good in presence of the Purchaser's representative.

#### **5.2 Expatriate for Instructions.**

Supplier shall dispatch his Engineers/Technicians for instructions to the related personnel of the Purchaser on the equipment stipulated in the Bill of Quantities for operation, maintenance and troubleshooting.

### **6. POST WARRANTY SERVICE REQUIREMENT**

In order to provide sufficient maintenance service after the one year warranty period, the Supplier shall offer through his local maintenance service agent(s), the following services.

- a. The Supplier shall guarantee to supply the spare parts of the equipment, if required, upon request by the Purchaser on the cost basis for ten (10) years, upon mutually agreed financial compensation.
- b. In case of major breakage, the Supplier shall send Original Equipment Manufacturers' engineer(s) to the Purchaser within four (4) weeks after the request by the Purchaser to repair such breakage, upon mutually agreed financial compensation.

### **7. BILL OF QUANTITIES OF ITEMS AND TECHNICAL SPECIFICATIONS**

The lists of required goods are given in the subsequent page under the heading "BILL OF QUANTITIES OF ITEMS AND TECHNICAL SPECIFICATIONS".

# BILL OF QUANTITIES OF ITEMS AND TECHNICAL SPECIFICATIONS

## 1. Microcontroller and Microprocessor Lab

S.No.	Name of Equipment	Description	Qty
1	PIC Microcontroller Trainer	<p><b>Technical Features</b></p> <p><b>Main Motherboard:</b></p> <ul style="list-style-type: none"> <li>8-Bit A/D Converter</li> <li>8-Bit D/A Converter</li> <li>128x64 Graphical LCD</li> <li>16x4 Character LCD</li> <li>Four 7-Segment Displays</li> <li>8x Monitor LEDs</li> <li>2x I2C EEPROM Interface</li> <li>DC Motor with optical encoder &amp; direction control</li> <li>Stepper motor with drive circuit</li> <li>R/C Servo motor with drive circuit</li> <li>Programmable Peripheral Interface 82C55 or 82S55</li> <li>4x4 Matrix Keypad with 5-way Joystick</li> <li>2x Interrupt Source</li> <li>8-Bit DIP Switches</li> <li>Serial Port Interface</li> <li>USB Programmer for PIC Devices</li> </ul> <p><b>Accessories</b></p> <ul style="list-style-type: none"> <li>Power Cord, Patch Cords, IDC Cable, Software CD/Flash Disk, Experiment Manual</li> </ul> <p><b>Experiments Included (but not limited to):</b></p> <ul style="list-style-type: none"> <li>Device Introduction of PIC</li> <li>Device Programming using Universal Programmer</li> <li>Seven Segment Displays</li> <li>2-Dimensional Key-pad</li> <li>External interrupt and Timers</li> <li>Programmable Peripheral Interface</li> <li>A/D and D/A converters</li> <li>Character LCD</li> <li>Graphical LCD</li> <li>Computer Interfacing</li> <li>DC Motor</li> <li>Stepper Motor</li> <li>Servo Motor</li> <li>I2C EEPROM</li> </ul> <p><b>Compliant</b> with ISO-9001 and ISO-14001</p>	04
2	8051 Microcontroller Trainer	<ul style="list-style-type: none"> <li><b>Technical Features</b></li> <li><b>Main Motherboard:</b></li> <li>8-Bit A/D Converter</li> <li>8-Bit D/A Converter</li> <li>128x64 Graphical LCD</li> <li>16x4 Character LCD</li> <li>Four 7-Segment Displays</li> <li>8x Monitor LEDs</li> <li>2x I2C EEPROM Interface</li> <li>DC Motor with optical encoder &amp; direction control</li> </ul>	04

		<ul style="list-style-type: none"> <li>● Stepper motor with drive circuit</li> <li>● R/C Servo motor with drive circuit</li> <li>● Programmable Peripheral Interface 82C55 or 82S55</li> <li>● 4x4 Matrix Keypad with 5-way Joystick</li> <li>● 2x Interrupt Source</li> <li>● 8-Bit DIP Switches</li> <li>● Serial Port Interface</li> <li>● USB Programmer for 8051 Devices</li> <li>● <b>Accessories:</b></li> <li>● Power Cord, Patch Cords, IDC Cable, Software CD/Flash Disk, Experiment Manual</li> <li>● <b>Experiments Included (but not limited to):</b></li> <li>● Trainer Introduction</li> <li>● Device Introduction of 8051</li> <li>● Device Programming using Universal Programmer</li> <li>● Seven Segment Displays</li> <li>● 2-Dimensional Key-pad</li> <li>● External interrupt and Timers</li> <li>● I2C EEPROM</li> <li>● A/D and D/A converters</li> <li>● Character LCD</li> <li>● Graphical LCD</li> <li>● Computer Interfacing</li> <li>● DC Motor</li> <li>● Stepper Motor</li> <li>● Servo Motor</li> <li>● Programmable Peripheral Interface</li> </ul> <p><b>Compliant with ISO-9001 and ISO-14001</b></p>	
<b>3</b>	<b>Arduino MEGA Kit or Equivalent</b>	<p><b>Items included (but not limited to):</b></p> <ul style="list-style-type: none"> <li>● 1 x Arduino Mega 2560 Board</li> <li>● 1 x USB Cable</li> <li>● 1 x Prototype Expansion</li> <li>● 1 x Remote</li> <li>● 1 x RC522 RFID Module</li> <li>● 1 x 9V 1A Adapter</li> <li>● 1 x Stepper Motor</li> <li>● 1 x Servo Motor (SG90)</li> <li>● 1 x Power Supply Module</li> <li>● 10 x 10R Resistors</li> <li>● 10 x 100R Resistors</li> <li>● 10 x 220R Resistors</li> <li>● 10 x 330R Resistors</li> <li>● 10 x 1K Resistors</li> <li>● 10x 2K Resistors</li> <li>● 10 x 5K Resistors</li> <li>● 10 x 10K Resistors</li> <li>● 10 x 100K Resistors</li> <li>● 10 x 1M Resistors</li> <li>● 1 x ULN2003 Stepper Motor Driver Board</li> <li>● 1 x MAX7219 Module</li> <li>● 1 x Ultrasonic Sensor</li> <li>● 1 x Joystick Module</li> <li>● 1 x Membrane Switch Module</li> <li>● 1 x LCD 1602 Module</li> <li>● 1 x Water Level Detection Module</li> <li>● 1 x 5V Relay</li> <li>● 20 x DuPont Female to Male Wires</li> <li>● 1 x 3V DC Motor</li> <li>● 1 x Fan Blade</li> </ul>	<b>5</b>

		<ul style="list-style-type: none"> <li>• 1 x 1 Digit 7 Segment Display</li> <li>• 1 x 4 Digit 7 Segment Display</li> <li>• 1 x DHT11 Temperature and Humidity Module</li> <li>• 2 x 10K Potentiometer</li> <li>• 1 x HC-SR501 PIR Motion Sensor</li> <li>• 1 x Rotary Encoder Module</li> <li>• 1 x IR Receiver Module</li> <li>• 1 x GY-521 Module</li> <li>• 1 x DS3231 RTC Module</li> <li>• 1 x L293D IC</li> <li>• 1 x 74HC595 IC</li> <li>• 1 x Passive Buzzer</li> <li>• 1 x Small Push Button</li> <li>• 2 x 10uF 50V Electrolytic Capacitor</li> <li>• 2 x 100uF 50V Electrolytic Capacitor</li> <li>• 5 x PN2222 NPN Transistor</li> <li>• 5 x S8050 NPN Transistor</li> <li>• 5 x 104pf Ceramic Capacitor</li> <li>• 5 x 22pf Ceramic Capacitor</li> <li>• 1 x RGB LED</li> <li>• 5 x Red LED</li> <li>• 5 x Yellow LED</li> <li>• 5 x Blue LED</li> <li>• 5 x Green LED</li> <li>• 5 x White LED</li> <li>• 2 x Photoresistor</li> <li>• 5 x 1N4007 Diode</li> <li>• 1 x Thermistor</li> <li>• 1 x 9V Battery Connector</li> <li>• 65 x Jumper Wires</li> <li>• 1 x Resistance Identification Card</li> <li>• 1 x 830 Tie points Breadboard</li> <li>• 1 x opto-isolated 8 channel 5V relay module</li> </ul> <p><b>Compliant</b> with ISO-9001 and ISO-14001</p>	
<b>4</b>	<b>IoT Module</b>	<p><b>Specifications and Features:</b></p> <ul style="list-style-type: none"> <li>• Current Receiving: 80mA</li> <li>• Voltage: 2.2 to 3.6 V</li> <li>• Current Transmitting: 80mA</li> <li>• Data Rate: 54Mbps or more</li> <li>• Frequency: 2.4 GHz (S-Band)</li> <li>• Mounting Type: Surface Mount</li> <li>• Operation Temperature -40 to 85°C</li> <li>• Power Output: 16 dBm or More</li> <li>• Protocol: 802.11 b/g/n/d/e/i</li> <li>• RF Family/Standard: WiFi</li> <li>• Sensitivity: -98 dBm</li> <li>• Serial Interfaces: I2C, I2S, SPI, UART</li> <li>• Integrated 520 KB SRAM</li> <li>• Hybrid Wi-Fi &amp; Bluetooth</li> <li>• High Level Integration</li> <li>• Ultra-low power management</li> <li>• 4 MB Flash</li> <li>• Onboard Board PCB Antenna</li> </ul>	<b>05</b>

S. No.	Equipment Name and Description	Qty
1	<b>Digital Logic Design Trainer</b>  <b>Features and Specifications Include</b> <ul style="list-style-type: none"> <li>• Logic Gates Circuits</li> <li>• Diode Logic (DL) Circuit</li> <li>• Resistor-Transistor Logic (RTL) Circuit</li> <li>• Diode-Transistor Logic (DTL) Circuit</li> <li>• Transistor-Transistor Logic (TTL) Circuit</li> <li>• Complementary-Metal Oxide-Semiconductor (CMOS) Circuit</li> <li>• TTL I/O Voltage and Current Measurement</li> <li>• CMOS Voltage and Current Measurement</li> <li>• TTL Gate Delay time Measurement</li> <li>• CMOS Gate Delay Time Measurement</li> <li>• AND Gate Characteristics Measurement</li> <li>• OR Gate Characteristics Measurement</li> <li>• INVERTER Gate Characteristics Measurement</li> <li>• NAND Gate Characteristics Measurement</li> <li>• NOR Gate Characteristics Measurement</li> <li>• XOR Gate Characteristics Measurement</li> <li>• CMOS to TTL Interface</li> <li>• NOR Gate Circuit</li> <li>• NAND Gate Circuit</li> <li>• Constructing XOR Gate with NAND Gate</li> <li>• Constructing XOR Gate with Basic Gate</li> <li>• AND-OR-INVERTER (A-O-I) Gate Circuit</li> <li>• Comparator Constructed with Basic Logic Gates</li> <li>• Comparator Constructed with TTL IC</li> <li>• Schmitt Gate Circuit</li> <li>• High voltage/Current Circuit</li> <li>• Circuit with Open-Collector Gate</li> <li>• Truth Table Measurements</li> <li>• Constructing an AND Gate with Tristate Gate</li> <li>• Bidirectional Transmission circuit</li> <li>• Constructing Half Adder with Basic Logic Gates</li> <li>• Full-Adder Circuit with IC</li> <li>• High-Speed Adder Carry Generator circuit</li> <li>• BCD Code Adder Circuit</li> <li>• Subtractor Circuit Constructed with Basic Logic Gates</li> <li>• Full-Adder and Inverter Circuit</li> <li>• Arithmetic Logic Unit (ALU) Circuit</li> <li>• Bit Parity Generator Circuit</li> <li>• Bit Parity Generator constructed With XOR Gate</li> <li>• Bit Parity Generator IC</li> <li>• Constructing a 4-to-2 Encoder with Basic Gates</li> <li>• BCD to 7-Segment Decoder</li> <li>• Constructing a 9-to-4 Encoder with TTL IC</li> <li>• Constructing a 2-to-4 Decoder with Basic Gates</li> <li>• Constructing a 4-to10 Decoder with TTL IC</li> <li>• Constructing a 2-to-1 Multiplexer</li> <li>• Using Multiplexers to Create Functions</li> <li>• Constructing a 8-output Demultiplexer with TTL IC</li> <li>• Constructing a 2-output Demultiplexer with Basic Logic Gates</li> <li>• Constructing a 8-output Demultiplexer with CMOS IC</li> <li>• Analog Switch Characteristics</li> <li>• Constructing Oscillator Circuit with Basic Logic Gates</li> <li>• Constructing Oscillator Circuit with Schmitt Gate</li> <li>• Voltage Controlled Oscillator (VCO) Circuit</li> </ul>	05

	<ul style="list-style-type: none"> <li>• 555 Oscillator Circuit</li> <li>• Low-Speed Monostable Multivibrator Circuits</li> <li>• High-Speed Monostable Multivibrator Circuits</li> <li>• Constructing Monostable Multivibrator Circuit with 555 IC</li> <li>• Constructing Non-Retriggerable Circuit with TTL IC</li> <li>• Constructing Retriggerable Circuit with TTL IC</li> <li>• Constructing a Variable Duty Cycle Oscillator circuit with Monostable Multivibrator</li> <li>• Asynchronous Binary Up-Counter</li> <li>• Asynchronous Binary Down-counter</li> <li>• Synchronous binary Up-Counter</li> <li>• Synchronous Binary Up/Down counter</li> <li>• Presetable binary Up/Down counter</li> <li>• Presetable Decimal Up/Down Counter</li> <li>• Ring Counter</li> <li>• Johnson's Counter</li> <li>• Asynchronous Decade Up-Counter</li> <li>• Asynchronous Divide-by-N Up-Counter</li> <li>• Constructing a R-S Flip-Flop with Basic Logic Gates</li> <li>• Constructing a D Flip-Flop with R-S Flip-Flop</li> <li>• Constructing a J-K Flip-Flop</li> <li>• Constructing a J-K Flip-Flop with RS Flip-Flop</li> <li>• Constructing a Shift Register with D Flip-Flop</li> <li>• Preset Left/Right Shift Register</li> <li>• Constructing a Noise elimination Circuit with RS Flip-Flop</li> <li>• R -2R Ladder Network</li> <li>• Digital/Analog Converter (DAC)Circuits-1</li> <li>• Analog/digital Converter (ADC) Circuits-1</li> <li>• 8-bit Converter Circuit</li> <li>• Unipolar DAC Circuit</li> <li>• Bipolar DAC Circuit</li> <li>• 3 1/2-digit Converter Circuit</li> <li>• Constructing Read Only Memory (ROM) with Diodes</li> <li>• Constructing Random Access Memory (RAM) with D Flip-Flop, 64-bit RAM Circuit</li> <li>• Erasable Programmable Read Only</li> <li>• MEMORY (EPROM) Circuit</li> </ul> <p><b>Compliant</b> with ISO-9001 and ISO-14001</p> <p>- <b>Necessary and related Supporting items/accessories must be provided</b></p>	
<b>2</b>	<p><b>FPGA Trainer Boards</b></p> <p><b>Technical Feature/ Specification</b></p> <ul style="list-style-type: none"> <li>• Clock: 1 MHz</li> <li>• PROM: EPCS4 or equivalent</li> <li>• Download Port: Multiple</li> <li>• Slide Switch: 10</li> <li>• Button Switch: 20</li> <li>• LED: 20</li> <li>• USB and Motor Driver Ports included</li> <li>• Piezo: upto 2</li> <li>• With optional modules: Text LCD Module, Keypad Module, Step Motor Module, Sensor Module and DAC Module</li> <li>• Expansion Board: Breadboard type</li> </ul> <p>- <b>All items must be compatible</b></p>	<b>05</b>
<b>3</b>	<p><b>IC Tester</b></p> <p><b>Technical Feature/ Specification</b></p>	<b>01</b>

	<p><b>Technical Features:</b></p> <ul style="list-style-type: none"> <li>• Multi-functional IC tester, transistor tester with LCD digital display.</li> <li>• It can test 74HC series, 74LS series, CD4000 series, HEF400 series, 4500 series, operational amplifiers, etc.</li> <li>• Different test modes can be selected: 3.3V/5.0V/AUTO modes.</li> <li>• Built-in more than 1300 types of chip data models and 420 transistor data models.</li> <li>• Cover a majority of 24 feet or less common universal devices.</li> <li>• Automatically detects NPN and PNP transistors, FET, SCR, automatic identification of the transistor pinout.</li> <li>• Automatic shutdown if there is no operation after 60s.</li> <li>• Can significantly reduce the workload and improve work efficiency.</li> </ul> <p><b>Specifications:</b></p> <p>Display LCD</p> <p>Power Supply: 2 x AA 1.5V Batteries</p> <p>Search Modes: 3.3V/5.0V/AUTO Modes</p> <p>Screen Size: 36 x 10mm</p> <p>Product Size: 133 x 70 x 25mm / 5.24 x 2.75 x 0.98in</p> <p>Product Weight: 120g / 4.23oz</p>	
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### Test and Measurement Equipment for Electrical and Electronics Labs

S. No.	Name of Equipment	Description	Qty																		
1	Function Generator	<ul style="list-style-type: none"><li>• Frequency range: 10μHz...20MHz</li><li>• Output voltage: 5mVpp...10Vpp (into 50Ω) DC Offset ±5mV...5V</li><li>• Arbitrary waveform generator: 250MSa/s, 14Bit, 256kPts</li><li>• Sine, Square, Pulse, Triangle, Ramp, Arbitrary waveforms incl. standard curves (white noise, etc.)</li><li>• Burst, Sweep, Gating, external Trigger</li><li>• Modulation modes AM, FM, PM, PWM, FSK (int. and ext.)</li><li>• Front USB connector: Recall of waveforms</li><li>• Ethernet/USB interface</li><li>• Compliant to following standards: EN 61010-1</li></ul>	25																		
2	Digital Multimeter (Bench Top)	<p><b>SPECIFICATIONS:</b></p> <table><thead><tr><th>Basic Functions</th><th>Range</th></tr></thead><tbody><tr><td>DC Voltage</td><td>200mV/2V/20V/200V/1000V</td></tr><tr><td>AC Voltage</td><td>2V/20V/200V/1000V</td></tr><tr><td>DC Current</td><td>200μA/2mA/20mA/200mA/10A</td></tr><tr><td>AC Current</td><td>2mA/20mA/200mA/10A</td></tr><tr><td>Resistance</td><td>200Ω/2kΩ/20kΩ/200kΩ/2MΩ/20MΩ</td></tr><tr><td>Capacitance</td><td>20nF/2μF/200μF</td></tr><tr><td>Frequency</td><td>2kHz/200kHz</td></tr><tr><td>Temperature (°C)</td><td>-40°C ~ 1000°C</td></tr></tbody></table> <p>Compliant to: 2014/30/EU (electromagnetic compatibility), 2014/35/EU (low voltage), 2011/65/EU (RoHS).</p>	Basic Functions	Range	DC Voltage	200mV/2V/20V/200V/1000V	AC Voltage	2V/20V/200V/1000V	DC Current	200μA/2mA/20mA/200mA/10A	AC Current	2mA/20mA/200mA/10A	Resistance	200Ω/2kΩ/20kΩ/200kΩ/2MΩ/20MΩ	Capacitance	20nF/2μF/200μF	Frequency	2kHz/200kHz	Temperature (°C)	-40°C ~ 1000°C	25
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## Antenna and Wave Propagation Lab Trainer

<b>1</b>	<b>Transmission Line Trainer</b>  (Electro-magnetic theory and wave propagation Trainer)	<b>Features:</b> Transmission Line: Four Sections of 25m Each Co-axial Cable: RG 174 Impedance Matching Resistance: 0-100 Ohm.Test <b>Generators:</b> 1. Sine wave: 60 KHz - 4 MHz 2. Square wave: 60 KHz - 4 MHz Interconnections: 2mm gold plated pins <b>Accessories:</b> Power cord, 2mm Patch Cords, Experimental Manual  <b>Experiments that can be performed:</b> <ul style="list-style-type: none"> <li>Measuring the Characteristics of a Line</li> <li>Measuring the Attenuation of a Line</li> <li>Measuring the Input Impedance of the Line</li> <li>Phase Displacement Between the Current &amp; Voltage at Input of Line</li> <li>Frequency Characteristic of the Line</li> <li>Study of Stationary Waves</li> <li>Signal Phase Shift Along the Line</li> <li>Fault Localization within the Line</li> <li>Line Under Pulsed Condition</li> </ul> <p style="text-align: center;"><b>Compliant with ISO-9001</b></p> <p><b>Necessary and related Supporting items/accessories must be provided</b></p>	<b>02</b>
<b>2</b>	<b>Optical Fiber Communication trainer</b>	<b>Features:</b> Transmitter: Fiber Optic LED Receiver: Fiber Optic Photo detector (Pin Diode) Carrier Generator: 300KHz Modulation / Demodulation Techniques: AM, FM, ASK and FSK Audio Generator: Variable Frequency and Amplitude Data Generator: 8-bit DIP switch selectable Clock Generator: 1KHz, 2KHz, 4KHz Microphone Interface: for voice application Drivers: Analog & Digital for Optical fiber AC Amplifier: with variable gain Low Pass Filter: 5th Order Butterworth, 3.4 KHz cut-off frequency Audio Amplifier: Monolithic Amplifier with Speaker  Voice Link: F.O. voice link using microphone & speaker PC-PC Communication: Using USB UART & software Inter connections: 2 mm gold plated pin  <b>Accessories:</b> Power cord, Manual, Fiber Cable, Microphone, 2mm Patch Cords and Software CD/Flash, USB cables.  <b>Experiments that can be performed:</b> <ul style="list-style-type: none"> <li>Study an 820 nm fiber optic analog link</li> <li>Frequency Modulation and Demodulation through Wired Medium</li> </ul>	<b>02</b>

		<ul style="list-style-type: none"> <li>• Frequency Modulation and Demodulation through Fiber Optic</li> <li>• Frequency Modulation and Demodulation of Voice Link through Fiber Optic</li> <li>• Amplitude Modulation and Amplitude Demodulation through Wired Medium</li> <li>• Amplitude Modulation and Demodulation through Fiber Optic</li> <li>• Amplitude Shift Keying Modulation and Demodulation through Wired Medium</li> <li>• Amplitude Shift Keying Modulation and Demodulation through Fiber Optic</li> <li>• Amplitude Shift Keying Modulation and Demodulation through Fiber Optic using PC</li> <li>• Frequency Shift Keying Modulation and Demodulation through Wired Medium</li> <li>• Frequency Shift Keying Modulation and Demodulation through Fiber Optic</li> <li>• Frequency Shift Keying Modulation and Demodulation through Fiber Optic using PC</li> </ul> <p><b>Compliant with ISO-9001</b></p> <p><b>Necessary and related Supporting items/accessories must be provided</b></p>	
<b>3</b>	<b>(Basic) Antenna Trainer</b>	<p><b>Technical Features:</b>  VCO 2.2-2.72GHz (Tunable)  VCO 2.4GHz (Fixed)  Tuning Voltage: 1.2-16V DC  Display: V Tune, F.P. &amp; R.P.  Modulation: 1KHz ASK  Output Power: +8dBm typical  RF Detector: 2-4GHz  Sensitivity: -5 ~ -45dBm typical, Comparator</p> <p><b>Antenna Included with the Trainer:</b></p> <ol style="list-style-type: none"> <li>1. Rectangular Patch</li> <li>2. Circular Patch</li> <li>3. 2x2 Rectangular Patch Array</li> <li>4. Monopole</li> <li>5. Lambda/2 Dipole</li> <li>6. Lambda/4 Dipole</li> <li>7. Folded Dipole</li> <li>8. Helix Antenna</li> <li>9. 3-Element Yagi-Uda</li> <li>10. 5-Element Yagi-Uda</li> <li>11. 7-Element Yagi-Uda</li> <li>12. 5-Element Log Periodic</li> <li>13. 7-Element Log Periodic</li> <li>14. Circular Loop</li> <li>15. Square Loop</li> <li>16. Lambda/2 Monopole</li> <li>17. 3Lambda/2 Dipole</li> <li>18. Lambda/2 Phase Array</li> <li>19. Lambda/4 Phase Array</li> <li>20. Broad Side Array</li> <li>21. Combined Co-Linear Array</li> <li>22. Fractal Antenna</li> <li>23. Lambda/2 Sierpinsky Triangle Bow-Tie Antenna</li> <li>24. Tapered monopole Antenna</li> </ol>	<b>03</b>

		<p>25. Element Yagi-UDA Folded Dipole.</p> <p>26. Folded Dipole (Receiver Antenna)</p> <p>27. Lambda/2 Monopole (Receiver Antenna)</p> <p><b>Accessories:</b> Power cord, 2mm patch cord, Experiment manual, SMA male-male cable, 50 Ohm Terminator, USB Cable.</p> <p><b>Experiments that can be performed:</b></p> <ul style="list-style-type: none"> <li>• Study of Antenna Polarization, Axial Ratio and Tilt Angle of a Circularly Polarized Antenna</li> <li>• Study of Dipole Antenna and Its Radiation Pattern</li> <li>• Study of Rectangular Patch Antenna</li> <li>• Study of Circular Patch Antenna</li> <li>• Study of 4 Elements Rectangular Patch Antenna Array</li> <li>• To Study the Behavior of Loop Antenna</li> <li>• Study of 3-Element Yagi-Uda Antenna</li> <li>• Study of 5-Element Yagi-Uda Antenna</li> <li>• Study of 7-Element Yagi-Uda Antenna</li> <li>• Study of 5-Element Log Periodic Antenna</li> <li>• Study of 7-Element Log Periodic Antenna</li> <li>• Study of 9- Element Log Periodic Antenna</li> <li>• Study of Folded Dipole Antenna</li> <li>• Study of Monopole Antenna</li> <li>• Study of Half Wavelength Monopole Antenna</li> <li>• To Study Phase Array End Fire Antenna</li> <li>• To Study Quarter Wavelength Phase Array End Fire Antenna</li> <li>• To Study Combined Co-Linear Array</li> </ul> <p><b>Compliant</b> with ISO-9001</p> <p><b>Necessary and related Supporting items/accessories must be provided</b></p>	
<b>POWER ELECTRONICS LAB</b>			
<b>1</b>	<b>Power Electronics Trainer</b>	<p>Power Electronics Trainer with proper lab desk with working table, 3-phase power supply, Emergency Start/Stop button, Earth Leakage Current Protection (ELCP) protected and over current protected:</p> <p><b>AC Energy Unit:</b></p> <ul style="list-style-type: none"> <li>• At least have 3 x 10A fuse protected with signal lamp</li> <li>• At least have Energy input of 3 x 380V connected, with 1500VA or higher isolation transformer</li> <li>• Minimum Energy output 3 x (55V – 110V – 220V) or other compatible values</li> </ul> <p><b>Measurement Unit (Power/Energy Analyzer):</b></p> <ul style="list-style-type: none"> <li>• digital energy analyzer able to make at least 5A measurement</li> <li>• can be able to Measure parameters such as : A – V – M – VAR – VA – COS<math>\phi</math> – Hz kWh, kVARh – <math>\Sigma</math>A - <math>\Sigma</math>W - <math>\Sigma</math>VAR - <math>\Sigma</math>VA – LN – LL</li> </ul> <p><b>Adjustable DC Energy Unit:</b></p> <ul style="list-style-type: none"> <li>• On – Off switch position</li> <li>• at least 0 – 25V DC / 0 – 2.5A</li> <li>• Short circuit protected, Adjustable Current and Voltage regulated power supply</li> </ul>	<b>02</b>

- Digital ammeter – voltmeter indicator

**MEASUREMENT AND APPLICATION MODULES:**

Diode Module: at least 6 diodes of ratings equal to or more than 20A – 1000V

Thyristor Module: at least 6 Thyristors of ratings equal to or more than 20A – 1000V

Triac Module: at least 3 Triacs of ratings equal to or more than 5A – 500V

Dimmer Module: Consists of 5 Fault Switches or higher

Power transistors: (of ratings equal to or more than)

Mosfet: 15A – 150V, IGBT: 10A – 1000V

DC Power Supply Module:  $\pm 15V$ , 1.5A symmetric power supply

DC Power Supply Module: 0 – 10V DC, adjustable

Isolation Measurement Module: with at least 3 or more isolated measurement channels with X1, X0.1, X0.01, voltage scale

Oscilloscope Channel Multiplexer Module with 3 or more signal inputs and at least 1 signal output.

DC Measurement Module:

- Ammeter current measuring range : 0 – 8A DC
- Voltmeter voltage measuring range : 0 – 600V DC

AC Measurement Module:

- Ammeter current measuring range : 0 – 8A
- Voltmeter voltage measuring range : 0 – 600V
- All inputs - outputs double insulated, with 4mm banana sockets

Single Phase Thyristor Driver Module

Three Phase Thyristor Driver Module

Inverter Module (Variable frequency Drive) – 3 Phase Motor

- Motor rotation and frequency control
- 1/4Hp or more, 3 $\sim$  asynchronous motor: Voltage :  $\Delta$  220V /  $\lambda$  380V AC, 50/60 Hz

DC / DC BOOST Converter Module

DC / DC BUCK Converter Module

Resistive Load Module: 100 $\Omega$  – 150W resistive load per each phase

Inductive - Capacitive Load Module: 8 $\mu$ F capacitive, 50mH inductive load

3 Phase Fuse Module

**Power Electronics Computer Interface Module:**

To make the experiments via computer with measurements and graphics.

Interface Module:

- Allows to control and monitoring the signals on PC
- Allows to monitoring of current and voltage signals on PC
- 4 Analog Inputs (-10V) (+10V)
- 2 Digital Inputs
- 2 Analog Outputs (0 – 5V)
- 4 Digital Outputs
- 3500 sample/sec per channel
- All inputs - outputs double insulated, with 4mm banana sockets

System Software:

- Real time graphics for Voltage and Current
- Current – Voltage characteristics indication
- Reference voltage and TTL oscillator control
- Instant signal characteristics record

		<ul style="list-style-type: none"> <li>• Report and Print specification</li> </ul> <p><b>ACCESSORIES:</b>  Storage Cupboard  Connection Leads: 4mm banana socket, double insulated leads, 40Pcs  IEC Plug Cables 6 Pcs  BNC – BNC Connection Leads  4mm – BNC Connection Leads</p> <p><b>Compliant</b> with ISO-9001</p> <p><b>Necessary and related Supporting items/accessories must be provided</b></p>	
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INDUSTRIAL AND AUTOMATION LAB			
1	PLC Trainer:	<p><b>Technical Features:</b></p> <p>PLC: Siemens CPU 1215C or Equivalent</p> <p>Digital Inputs: 14</p> <p>Digital Outputs: 10</p> <p>Analog Inputs: 2x Voltage Type with 11-bit ADC</p> <p>Analog Outputs: 2x Voltage Type &amp; Current Type Simultaneous Output</p> <p>Analog Voltage Source: 2x +/- 10V</p> <p>Fixed Supply DC: 24V, 12V &amp; 5V</p> <p>Interface Connector: atleast 40-pin IDC</p> <p>Digital Input Simulator: 8x Momentary, 8x Toggle Switches (or other arrangement with same behaviour)</p> <p><b>Accessories:</b></p> <p>2mm Patch Cords, Power Cord, Experiment Manual, IDC Cable, PC Programming Cable, Software CD/ USB Flash Drive</p> <p><b>Experiments that can be Performed:</b></p> <ul style="list-style-type: none"> <li>• Implementation of Logic Gates</li> <li>• Implementation of Counters(Parking Stand)</li> <li>• Implementation of Timer Application (Flash Light)</li> <li>• Study of PLC Analog Input</li> <li>• Implement Digital to Analog Converter</li> </ul> <p><b>Compliant</b> with ISO-9001</p> <p><b>Necessary and related Supporting items/accessories must be provided</b></p>	04

<b>2</b>	<b>Mechatronic Kit</b>	<p><b>a. Robot Control Module</b></p> <p><b>Technical Features:</b></p> <p><b>Sensors and actuators:</b></p> <ul style="list-style-type: none"> <li>• 4 REED sensors</li> <li>• 1 Inductive sensor</li> <li>• 3 5/2 monostable electro-valves</li> <li>• 1 Motor of 24 V DC with encoder</li> </ul> <p><b>Module I/O:</b></p> <ul style="list-style-type: none"> <li>• 7 Digital inputs</li> <li>• 5 Digital outputs</li> </ul> <p><b>Experiments that can be performed</b></p> <ul style="list-style-type: none"> <li>• Principles of electro-pneumatics</li> <li>• Operation of vacuum circuit coupled to a suction cup</li> <li>• Operation of the electro-valves</li> <li>• Operation of REED and inductive sensors</li> </ul> <p><b>b. Selecting Pieces control module</b></p> <p><b>Technical Features:</b></p> <p><b>Sensors and actuators:</b></p> <ul style="list-style-type: none"> <li>• 1 Inductive sensor</li> <li>• 1 Optic reflection sensor</li> <li>• 2 3/2 electro-valves</li> </ul> <p><b>Module I/O:</b></p> <ul style="list-style-type: none"> <li>• 2 Digital inputs</li> <li>• 2 Digital outputs</li> </ul> <p><b>Experiments that can be performed</b></p> <ul style="list-style-type: none"> <li>• Principles of electro-pneumatics</li> <li>• Operation of pneumatic cylinders</li> <li>• Operation of inductive sensors</li> <li>• Operation of optic reflection sensors</li> </ul> <p><b>c. Weight Control Module</b></p> <p><b>Technical Features:</b></p> <p><b>Sensors and actuators:</b></p> <ul style="list-style-type: none"> <li>• 1x Weight sensor</li> </ul> <p><b>Module I/O:</b></p>	<b>04</b>

		<ul style="list-style-type: none"> <li>• 1x Analog output</li> </ul> <p><b>Experiments that can be performed</b></p> <ul style="list-style-type: none"> <li>• Principles of electronics</li> <li>• Operation of weight sensors</li> </ul> <p><b>d. Storage Control Module</b></p> <p><b>Technical Features:</b></p> <p><b>Sensors and actuators:</b></p> <ul style="list-style-type: none"> <li>• 1 Micro-switch sensor</li> <li>• 2 REED sensors</li> <li>• 1 5/2 electro-valve</li> </ul> <p><b>Module I/O:</b></p> <ul style="list-style-type: none"> <li>• 3 Digital inputs</li> <li>• 2 Digital outputs</li> </ul> <p><b>Experiments that can be performed</b></p> <ul style="list-style-type: none"> <li>• Principles of electro-pneumatics</li> <li>• Operation of micro-switch sensors</li> <li>• Operation of REED sensors</li> </ul> <p><b>e. Conveyer Belt Control Module</b></p> <p><b>Technical Features:</b></p> <p><b>Sensors and actuators:</b></p> <ul style="list-style-type: none"> <li>• 1 Fiber optical sensor</li> <li>• 1 DC motor 24 VDC</li> </ul> <p><b>Module I/O:</b></p> <ul style="list-style-type: none"> <li>• 1 Digital inputs</li> <li>• 2 Digital outputs</li> </ul> <p><b>Experiments that can be performed</b></p> <ul style="list-style-type: none"> <li>• Principles of electrical control of DC motor</li> <li>• The conveyor operation</li> <li>• The fiber optical sensor</li> </ul> <p><b>Compliant with ISO-9001</b></p> <p><b>Necessary and related Supporting items/accessories must be provided</b></p>	
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## Miscellaneous Equipment

<b>3</b>	<b>Data Acquisition Kit</b>	<b>Technical Features:</b> Processor: 8-bit RISC based Digital In: 16 Channel Digital Out: 16 Channel Analog In: 8-Channel Multiplexed A/D Converter: 10-Bit Analog Out: 8-Channel D/A Converter: 8-Bit Serial SPI Analog Voltage Source: +10V, ±10V Adjustable Relay: +15V SPDT Display: 2X 7-Segment with BCD-7-Segment Decoder/ Driver Switches: 2X 8-Bit DIP Switches PC Interface: USB-UART with Data Acquisition Software Software Features: Analog Inputs Channels: 8 independent channels Resolution: 10 bits per channel Input Range: -10Vto 10V Analog Outputs Channels: 2 channels Resolution: 8 bit Digital I/Os 16 digital I/Os: 5 Volt DC Others Graph for 8 input channels Data Logging for each channel 8-bit 7 segment for digital inputs <b>Lab manual must be included</b> <b>Compliant</b> with ISO-9001 <b>Necessary and related Supporting items/accessories must be provided</b>	<b>04</b>

S.No	Item	Specification	Quantity
<b>1</b>	<b>Power Monitor Meter/ Socket</b>	4500W 85-265V 20A Electric Power Energy Monitor Socket Watt Meter Analyze. Measuring active power Monitoring the voltage RMS Monitoring the current RMS Monitoring the value of the current active power Monitoring the current power factor Monitoring the voltage and frequency Recorded the total time consumption	<b>01</b>
<b>2</b>	<b>Green House gas analyzer</b>	FTIR emissions monitoring system, and typically set up to measure H <sub>2</sub> O, CO <sub>2</sub> , CO, NO, NO <sub>2</sub> , N <sub>2</sub> O, SO <sub>2</sub> , NH <sub>3</sub> , CH <sub>4</sub> , HCl, HF and different VOCs. The system can measure up to multiple gases simultaneously.	<b>01</b>
<b>3</b>	<b>Electromagnetic Field Radiation</b>	Unit: mG (Electric Field); µT (Magnetic Field) Accuracy: ±5% (50µT to 200µT)µT at 50Hz or 60Hz Range: Electric: 0~2000mG; Magnetic: 0~200µT	<b>01</b>



	<b>Detector</b>	Resolution: 1mG, 0.1μT Alarm Threshold: 40mG, 0.4μT Temperature: 0~50°C / 32~122°F Display: 4 digits LCD Display Test Bandwidth: 30Hz-300Hz Number of Axis: Single Axis Inductive Head Sampling Rate: 0.5 Seconds Test Mode: Bimodule Synchronous Test Over Range Indication: LCD Displays "HI" Operating Temperature: 0~50°C, Relative Humidity 0~80% Storage Temperature: -10~50°C, Relative Humidity: 0~70%	
<b>4</b>	<b>Insulation Tester</b>	Test Voltages 250V, 500V, 1000V Insulation Resistance Range 200MΩ, 2000MΩ Insulation Resistance Accuracy ±3.5% rdg. ±5 dgt. Resistance Range 200Ω, 2000Ω Resistance Accuracy ±1% rdg. ±2 dgt. Voltage Range 750VAC / 1000VDC Voltage Accuracy AC: ±1.2% rdg. ±10 dgt. DC: ±0.8% rdg. ±3 dgt. Continuity Range Beeps ≤40Ω Test Current ≤200mA	<b>01</b>
<b>5</b>	<b>Infrared Thermal Camera</b>	They are widely used for electrical, building services and facilities operation and maintenance applications. Fully automatic with built-in intelligence Built-in digital camera Compact size design Centre point temperature measurement Single-button blending (5 modes) of digital and thermal images, to instantly indicate exact location of issue Alarm and time-lapse features Automatic hot and cold spot trackers SmartView reporting software Li-ion rechargeable 3.6 V, 2250 mAh, 8.1 Wh battery (supplied), battery life 8 hours Low cost instrument with no cost of training or need for additional software Temperature range -10 °C to +250 °C	<b>01</b>
<b>6</b>	<b>WEATHER STATION</b>	Wireless weather station connect to WIFI, upload data to web. PC software to view the weather data, after PC connecting to the same Wi-Fi(support 2.4Ghz Wi-Fi) History Record interval. Time and date, Sunrise and Sunset time, Moon phase. Indoor/outdoor temperature and humidity & Wind chill & wind direction & Rainfall & Pressure measure, Display rain rate, rainfall data in 24 hours, one week, one month, one year, total rain and rainfall event. Wind speed in mph, km/h, m/s. The direction of the wind with 360 degree. Wind chill, dew point and heat index temperature display. Barometric, weather forecast. Light and UV index. RF Frequency: 433 MHz Temperature range: -40~+60°C Humidity range: 10% ~99% Rain volume: 0 - 9999 mm Wind speed: 0-50m/s (0~100mph) Wind direction: 0 to 359 degree Light: 0-200k Lux UVI: 0-15	<b>01</b>
<b>7</b>	<b>Portable Video Borescope</b>	300000 pixels, Memory what you see on the screen Tube one meter long 8.5mm in diameter, flexible Waterproof (Waterproof grade: IP67).	<b>01</b>

		<p>Camera Ministry with 6 LED lights can be used in a dark space, the camera focal length of 2-8CM.</p> <p>Handle front-end to install a bright LED lights, as a separate switch directly when using the flashlight.</p> <p>Image Capture in JPEG file format, video Recording in Monitor JPEG(AVI) Display</p> <p>Resolution: Image :640*480 pixels, Video( with Audio) D1 720*480 Pixels(30 fps)8</p> <p>Zoom In/Out (Max. 5X)</p> <p>Interface: SD card (to 32GB SDHC), USB 1.1, RGB Video out.</p> <p>Battery: AA type Alkaline Battery 4each ( working time:4-6 hours)</p>	
<b>8</b>	<b>Three-Phase Power Quality and Energy Analyzer</b>	<p>Volt</p> <p>Vrms (AC + DC) Measurement range: 1 to 1000 V phase to neutral</p> <p>Vpk Measurement range: 1 to 1400 Vpk</p> <p>Voltage Crest Factor (CF) Measurement range: 1.0 &gt; 2.8</p> <p>Vrms 1/2</p> <p>Amps</p> <p>i430-Flex 1x Measurement range: 5 to 6000 A</p> <p>i430-Flex 10x Measurement range: 0.5 to 600 A</p> <p>1mV/A 1x Measurement range: 5 to 2000 A</p> <p>1mV/A 10x Measurement range: 0.5 to 200 A (AC only)</p> <p>i430-Flex Measurement range: 8400 Apk</p> <p>1mV/A Measurement range: 5500 Apk</p> <p>Measure multiple parameters simultaneously to quickly understand overall power quality health</p> <p>View data as simple digital values or more detailed trend graphs that give you fast insight into changes over time, waveforms, and phasor diagrams</p> <p>Organize data in tabular format so you can quickly correlate parameters like magnitude, duration, and time to the issues you are experiencing in your facilit</p>	<b>01</b>

## Section VIII. Forms

### Notes on the Forms

The Bidder shall complete and submit with its bid the **Bid Form** and **Price Schedules** pursuant to ITB Clause 9 and in accordance with the requirements included in the tender documents.

When requested in the Bid Data Sheet, the Bidder should provide the **Bid Security**, either in the form included hereafter or in another form acceptable to the Purchaser, pursuant to ITB Clause 15.3.

The **Contract Form**, when it is finalized at the time of contract award, should incorporate any corrections or modifications to the accepted bid resulting from price corrections pursuant to ITB Clause 16 and GCC Clause 17, acceptable deviations (e.g., payment schedule pursuant to GCC Clause 16.5 and SCC 11), spare parts pursuant to GCC Clause 14 and SCC 9 , or quantity variations pursuant to ITB Clause 28. The Price Schedule and Schedule of Requirements deemed to form part of the contract should be modified accordingly.

The **Performance Security** Form should not be completed by the bidders at the time of their bid preparation. Only the successful bidder will be required to provide performance security in accordance with one of the forms indicated herein or in another form acceptable to the Purchaser and pursuant to GCC Clause 7 and SCC 3, respectively.

The **Original Equipment Manufacturer's Authorization** form should be completed by the original equipment manufacturer, as appropriate pursuant to ITB Clause 13.3(a)

## Annexure A

### EVALUATION CRITERIA

1. **TECHNICAL EVALUATION CRITERIA:-** The technical proposals shall be evaluated using the evaluation matrix with 70% weightage:-

S#	Evaluation Parameter	Availability/ Compliance	Requirement/Marks	<b>Authentication Proof</b> (the bidder will be required to provide documentary proof with the bid against each parameter)
1	Company profile	Yes/No	Mandatory	Company Profile
2	Active taxpayer of income tax and sales tax as manufacturer, importer or wholesaler	Yes/No	Mandatory	Active status of income tax and sales tax registration to be confirmed online on FBR website.
3	Authorized dealership certificate from manufacturer	Yes/No	Mandatory	Certificate issued by Manufacturer
4	Provision of non-blacklisting certificate and that no litigation went against the company	Yes/No	Mandatory	Certificate by the bidder on judicial stamp paper of minimum Rs.100/- duly signed and stamped
5	Submission of 2% bid security	Yes/No	Mandatory	Undertaking by bidder
6	Minimum one year warranty	Yes/No	Mandatory	Certificate by bidder/ manufacturer
7	Conformance to minimum technical specifications	Yes/No	Mandatory	Compliance of quoted items with minimum technical specifications of tendered items
8	Compatibility of items quoted in the lot	Yes/No	Mandatory	Technical Specifications
9	Relevant Additional feature or higher technical specification (RAF/HTS) maximizing functionality of the quoted item (Maximum 15 Marks)	Yes/No	03 Marks for each RAF/HTS	Technical specifications / brochures (the bidders must clearly specify the RAF/HTS in their technical bids for claiming marks under this parameter. Marks may not be awarded, if not specified)
10	Product satisfactory performance / after sale service certificate with a minimum operational history of 01 year issued by public sector organizations (Maximum 10 Marks)	Yes/No	02 Marks for each after sale satisfactory performance certificate	After-sale satisfactory performance certificate for the quoted model or previously provided model of the same equipment supplied by the bidder to any public sector organization of Pakistan. Certificate must be on letterhead of the organization duly signed and stamped. Performance certificate shall be coupled with supply order/purchase order from the

				organization (Maximum one certificate per organization will be acceptable).
11	Quality Certifications of Manufacturer (Maximum 05 Marks)	Yes/No	01 Marks for Each for Valid Certification /Standard	Attested copy of Quality Certificate
12	Additional Warranty (Maximum 10 Marks)	Yes/No	02 Marks with spare parts per year warranty over and above the 01 year mandatory warranty period	Additional warranty certificate on the letterhead of the bidder. (Performance security of 10% shall be released after expiry of mandatory one year as well as the additional warranty period).
13	Human Resource/ Personnel with minimum 02 years experience (Maximum 10 Marks)	Yes/No	i. Associate Engineer (DAE) in electrical/ electronic/ mechanical (0.5 mark per DAE; Max 03) ii. B.Sc. Engineer in electrical / electronics, / mechanical (1 mark per Engineer; Max 03) iii. B.Tech (Hon)/B.Sc. (Hons) /MSc. in electrical/ electronics/ biomedical / Mechatronics / mechanical/ industrial (0.5 mark for each, Max 02) iv. Factory-trained engineer on the quoted Products. (1 mark per Engineer; Max 02)	Copy of payroll of the bidder showing release of salaries to its personnel for last 06 months and copies of their Diplomas/Degrees/PEC Registration Cards/Factory training certificate.
14	Availability of Workshop in Khyber Pakhtunkhwa/ Islamabad/ Rawalpindi (Maximum 10 Marks)	Yes/No	i. 07 marks for availability of workshop in Khyber Pakhtunkhwa, Islamabad/Rawalpindi having testing and calibration tools for the quoted items. ii. 03 Marks for availability of Workshop/relevant spare parts for the quoted items outside above mentioned regions	Copy of Ownership / Rent Agreement with Owner / Rent Agreement with Company Name, List of Testing and Calibration tools and List of Spare parts availability at workshop to be physically verified at any stage.
15	Firm Financial Strength (Maximum 10 marks)		i. 01 mark for each year Annual Sales Tax Return (Max 2 Marks) ii. 01 mark for each year Annual Income Tax Return (Max 2 Marks) iii. 03 mark for audited balance sheet with annual turnover of above Rs.50.00 million (Max 6 Marks)	Copies of Annual Sales Tax Return, Annual Income Tax Return, Audited balance sheet of the firm for the last two years

**Mandatory Qualification Marks in Technical Evaluation:** A bidder, who fails to meet the mandatory requirement or securing less than 28 marks (40%) in technical evaluation shall be declared as technically

disqualified / non-responsive and their Financial Proposals will be returned unopened. In case there are several items in a lot, the average of total marks secured in the entire lot shall be considered for final evaluation as well as qualification in technical criteria and the bidder securing less than 40% of the average marks for the lot will be declared technically disqualified/non-responsive.

## **2. FINANCIAL EVALUATION CRITERIA**

The financial proposals that have been declared as qualified/responsive in the technical evaluation, will be opened on a subsequent date in the presence of bidders, who wish to participate. The bids will be examined to determine whether any computational errors have been made, whether required sureties have been furnished, whether the documents have been properly signed, and whether the bids are generally in order. Arithmetical errors will be rectified on the following basis:-

- (a) If there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail, and the total price shall be corrected.
- (b) If there is a discrepancy between words and figures, the amount in words will prevail.
- (c) If the Bidder does not accept the correction of the errors, its bid will be rejected, and its bid security shall be forfeited.
- (d) The Procuring entity may waive any minor informality, nonconformity, or irregularity in a bid which does not constitute a material deviation.

**Marking of Financial Proposals:** 30 % weightage will be given to technically qualified/responsive proposals. The lowest overall proposal shall get the full 30 marks, while the remaining proposals will get marks on a sliding scale proportionally compared to the lowest proposal as per following formula: -

Amount of lowest quoted bid ÷ Price of Bid under consideration X 30

**Solved Example of Financial Scoring:** - If the lowest quoted price of an item is Rs. 100/-, the same lowest bidder will obtain score as below: =  $[100 \div 100] \times 30 = 30$  marks, being the lowest bidder for the quoted item. If the next higher quoted price of the same item is Rs. 110/-, the marks obtained will be: =  $[100 \div 110] \times 30 = 27.27$  Marks - If the next higher quoted price of the same item is Rs. 115/-, the marks obtained will be: =  $[100 \div 115] \times 30 = 26$  Marks .... And so on.

## **3. Final Evaluation (Technical and Financial)**

Contract will be awarded to the Best Evaluated Responsive Bidder whose proposal ranks highest in the Combined Evaluation scoring calculated through the Marks awarded to Technical Proposal and Financial Proposal.

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**1. LETTER OF BID (BID FORM)**  
(To be submitted with technical bids)

Procurement Reference No: \_\_\_\_\_

To:

Deputy Director (P&D),  
UOT, Nowshera

Having examined the tender, the receipt of which is hereby duly acknowledged, we, the undersigned, offer to establish state-of-the-art laboratories with brand new equipment with standard accessories; and to install, commission, test operate the equipment and train the University personnel on the operation and maintenance of such equipment in conformity with the said tender documents.

We undertake, if our Bid is accepted, to setup state-of-the-art laboratories and to supply and install the equipment with standard accessories in conformity with the said tender documents.

If our bid is accepted, we undertake to provide a performance security in the form, in the amounts, and within the times specified in the Tender Documents.

We agree to abide by this Bid for the Bid Validity Period specified in Clause 16.1 of the Bid Data Sheet and it shall remain binding upon us and may be accepted at any time before the expiration of that period.

Until a formal Contract is prepared and executed, this Bid, together with your written acceptance thereof and your notification of award, shall constitute a binding Contract between us.

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

Dated this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_\_.

*[signature]* *[in the capacity of]*  
Duly authorized to sign Bid for and on behalf of \_\_\_\_\_



## 2. BILL OF QUANTITIES OF ITEMS WITH SPECIFICATIONS

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

Procurement Reference Number:\_\_\_\_\_

Number and Name:\_\_\_\_\_

1	2	3	4	5	6
Item No	Description	Country of origin	Quantity	Original Equipment Manufacturer	Model Number

### 3. ORIGINAL EQUIPMENT MANUFACTURER'S AUTHORIZATION FORM

To

Deputy Director (P&D),

UOT, Nowshera

WHEREAS [*name of the Original Equipment Manufacturer*] who are established and reputable manufacturers of [*name and/or description of the goods*] having factories at [*address of factory*] do hereby authorize [*name and address of Agent*] to submit a bid, and subsequently negotiate with you against Invitation for Bids Reference No. \_\_\_\_\_ for the above goods manufactured by us.

We hereby extend our full guarantee and warranty as per Clause 15 of the General Conditions of Contract (1 year warranty) for the goods offered for supply by the above firm against this Invitation for Bids.

[*signature for and on behalf of Original Equipment Manufacturer*]

Note: This letter of authority should be on the letterhead of the Original Equipment Manufacturer and should be signed by a person competent and having the power of attorney to bind the Original Equipment Manufacturer.

#### 4. AGENT QUALIFICATION STATEMENT

##### 1.Name and Address of Bidder

- A. Name of Bidder \_\_\_\_\_
- B. Address of Head Office \_\_\_\_\_
- C. Number of full-time Engineers\_\_\_\_\_
- D. Number of full time Sales Reps.\_\_\_\_\_
- E. Date Established and / or Registered \_\_\_\_\_
- F. Capital cash/revolving fund \_\_\_\_\_
- G. Origin /Country \_\_\_\_\_
- H. Project In-charge \_\_\_\_\_
- I. Section/Department/Division \_\_\_\_\_
- J. Telefacsimile Number \_\_\_\_\_
- K. Email Address \_\_\_\_\_
- L. Telephone Number \_\_\_\_\_
- M. Mobile Number \_\_\_\_\_

We hereby certify to the best of our knowledge that the foregoing statement are true and correct and all available information and data have been supplied and that we agree to show documentary proof thereon upon your request.

Date

Name & Address of the Original Equipment Manufacturer (Signature)  
(In the Capacity of)

*Note:* This letter of authority should be on the letterhead of the Bidder.

## 5. POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS, that **(Name of Bidder)**, a corporation duly organized and existing under the laws of \_\_\_\_\_, with its principal place of business at **(Address of Bidder)**, does hereby constitute, designate and appoint **(Name and Designation of Representative of the Bidder)**, whose specimen signature is shown below, as our true and lawful attorney-in-fact, in our name, place and stead, with full powers of substitution and revocation, to sign and submit the tender documents and all documents related to the Bid invited on, 2021 by University of Technology, Nowshera, and to do any and all acts and deeds as the said attorney-in-fact may deem requisite, necessary or proper to be done in connection therewith, all in our name and on our behalf hereby ratifying and confirming all that the said attorney-in-fact shall do pursuant to the power here under-granted.

This Power of Attorney has been drawn up in the city of \_\_\_\_\_, on this the day of \_\_\_\_\_, 2023 and shall remain in full force and effect until our further notice.

Name of Bidder \_\_\_\_\_  
(Name of duly authorized representative to sign)

Specimen Signature

(Rank or Position)

## 6. REFERENCE LIST OF SIMILAR INSTALLATIONS

Name of Purchaser/ Institution	Purchase order No. and date	Descriptio n of order	Value of order	Year of completion

Note: This should be on the letterhead of the Bidder and should be signed by a duly authorized person.

## 7. INSTALLATION/COMMISSIONING/TRAINING UNDERTAKING BY ORIGINAL EQUIPMENT MANUFACTURER

We (Name of Original Equipment Manufacturer), a manufacturer duly organized under the law of (Name of Country) and having its principal place of business at (Address of Original Equipment Manufacturer) hereby undertake that we are exclusively responsible for the successful Installation, Commissioning, and Training for the equipment offered by us/ our local agent for your Invitation for Bids Reference Number \_\_\_\_\_ dated \_\_\_\_\_.

If for any reason, such as travel restrictions imposed by our government etc., we are unable to send our engineers/supervisors to perform the installation, commissioning, and training for our equipment at the Purchaser's designated premises, then we are exclusively responsible for all the costs inclusive of all associated expenses for seven (7) days detailed training of at least two (2) technical personnel of the Purchaser at our premises at for each item secured as per the Purchaser tender documents.

Any and all costs associated with successful installation, commissioning, and training has been included in our aforementioned quotation.

\_\_\_\_\_  
Date

Name & Address of the Original Equipment Manufacturer (Signature)

*Note:* This letter should be on the letterhead of the Original Equipment Manufacturer and should be signed by a duly person.

## 8. INTEGRITY PACT

Declaration of fees, commission and brokerage etc. payable by the suppliers of goods, services & works in contracts worth Rs. 10.00 Million or more

Contract No. \_\_\_\_\_ Dated \_\_\_\_\_ Contract Value: *[To be filled in at the time of signing of Contract]*  
Contract Title: \_\_\_\_\_

[name of Supplier] hereby declares that it has not obtained or induced the procurement of any contract, right, interest, privilege or other obligation or benefit from University of Technology, Nowshera through any corrupt business practice.

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

[name of Supplier] 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 University of Technology, Nowshera and has not taken any action or will not take any action to circumvent the above declaration, representation or warranty.

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

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

Name of Purchaser: .....  
Signature: .....[Seal]

Name of Seller/Supplier: .....  
Signature ..... [Seal]

## 9. LETTER OF BID (BID FORM)

(To be submitted with financial bid)

Procurement Reference No: \_\_\_\_\_

To:

Deputy Director,  
UOT, Nowshera

Gentlemen and/or Ladies:

Having examined the tender, the receipt of which is hereby duly acknowledged, we, the undersigned, offer to establish state-of-the-art laboratories with brand new equipment with standard accessories; and to install, commission, test operate the equipment and train the University personnel on the operation and maintenance of such equipment in conformity with the said tender documents for the sum of [\_\_\_\_\_] *total bid amount in words and figures* or such other sums as may be ascertained in accordance with the Schedule of Prices attached herewith and made part of this Bid.

We undertake, if our Bid is accepted, to setup state-of-the-art laboratories and to supply and install the equipment with standard accessories in conformity with the said tender documents.

If our bid is accepted, we undertake to provide a performance security in the form, in the amounts, and within the times specified in the Tender Documents.

We agree to abide by this Bid for the Bid Validity Period specified in Clause 16.1 of the Bid Data Sheet and it shall remain binding upon us and may be accepted at any time before the expiration of that period.

Until a formal Contract is prepared and executed, this Bid, together with your written acceptance thereof and your notification of award, shall constitute a binding Contract between us.

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

Dated this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_.

*[signature]*

*[in the capacity of]*

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



## PRICE BREAKDOWN SCHEDULE

1

1	2	3	4	5	6
Item No	Description	Country of origin	Quantity	Unit price DDP UOT, Nowshera.	Total price DDP UOT, Nowshera.
<b>Grand Total</b>					

*Note:* In case of discrepancy between unit price and total, the unit price shall prevail.

11.

## FORM OF BID SECURITY

\_\_\_\_\_  
[Name and address of guarantor]

Date: \_\_\_\_\_

**Beneficiary: To:**

VC, University of Technology, Nowshera

**BID GUARANTEE No.:** \_\_\_\_\_

We have been informed that [name of the Bidder] (hereinafter called "the Bidder") has submitted to you its bid dated (hereinafter called "the Bid") for supply, installation and commissioning of labs equipment of \_\_\_\_\_ at University of Technology, Nowshera - Pakistan under Procurement Reference Number\_.

Furthermore, we understand that, according to your conditions, bids must be supported by a bid guarantee.

At the request of the Bidder, we [\_\_\_\_\_ name of guarantor] hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of [\_\_\_\_\_ amount in figures]([\_\_\_\_\_ amount in words]) upon receipt by us of your first demand in writing accompanied by a written statement stating that the Bidder is in breach of its obligation(s) under the bid conditions, because the Bidder:

- (a) \_\_\_\_\_ has withdrawn its Bid during the period of bid validity specified by the Bidder in the Form of Bid; or
- (b) \_\_\_\_\_ does not accept the correction of errors in accordance with the Instructions to Bidders (hereinafter "the ITB") of the IFB; or
- (c) \_\_\_\_\_ having been notified of the acceptance of its Bid by the Purchaser during the period of bid validity, (i) fails or refuses to execute the Contract Form, if required, or (ii) fails or refuses to furnish the performance security, in accordance with the ITB.

This guarantee will expire: (a) if the Bidder is the successful bidder, upon our receipt of copies of the contract signed by the Bidder and the performance security issued to you upon the instruction of the Bidder; or (b) if the Bidder is not the successful bidder, upon the earlier of (i) our receipt of a copy of your notification to the Bidder of the name of the successful bidder; or (ii) twenty-eight days after the expiration of the Bidder's Bid.

Consequently, any demand for payment under this guarantee must be received by us at the office on or before that date.

[Signature(s)]

## 12.

## CONTRACT FORM

THIS AGREEMENT made the \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_  
between University of Technology, Nowshera- Pakistan (hereinafter called "the Purchaser")  
of the one part and [name of Supplier] of [city and country of Supplier] (hereinafter called "the  
Supplier") of the other part:

WHEREAS the Purchaser invited bids for supply, installation, commissioning and its  
training of certain goods on turn-key basis, its relevant activities & ancillary services, viz.  
brand new Electronics labs equipment on DDP UOT, Nowshera basis 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.:
  - (a) the Bid Form and the Price Schedule submitted by the Bidder;
  - (b) the Schedule of Requirements;
  - (c) the Technical Specifications;
  - (d) the General Conditions of Contract;
  - (e) the Special Conditions of Contract; and
  - (f) the Purchaser's Notification of Award.
3. In consideration of the payments to be made by the Purchaser to the  
Supplier as hereinafter mentioned, the Supplier hereby covenants with the Purchaser to  
provide the goods and services and to remedy defects therein in conformity in all respects  
with the provisions of the Contract
4. The Purchaser 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 Purchaser)

Signed, sealed, delivered by \_\_\_\_\_ the \_\_\_\_\_  
(for the Supplier)

### 13. PERFORMANCE SECURITY FORM

*[Name, and Address of guarantor]*

**Beneficiary: To:**

VC, University of Technology, Nowshera

**Date:** \_\_\_\_\_

**PERFORMANCE GUARANTEE No.:** \_\_\_\_\_

We have been informed that [*\_\_\_\_\_ name of guarantor*] has entered into Contract No. [*\_\_\_\_\_ reference number of the contract*] dated \_\_\_\_\_ with you, for supply, installation and commissioning of \_\_\_\_\_ brand new labs equipment on DDP UOT, Nowshera basis. (hereinafter called "the Contract").

Furthermore, we understand that, according to the conditions of the Contract, a performance guarantee is required.

At the request of the Guarantor, we [*\_\_\_\_\_*] hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of [*\_\_\_\_\_ amount in figures*](*\_\_\_\_\_*) needing to prove or to show grounds for your demand or the sum specified there in.

This guarantee shall expire no later than the day of \_\_\_\_\_, 20, and any demand for payment under it must be received by us at this office on or before that date.

*[Signature(s)]*

<sup>1</sup> The Guarantor shall insert an amount representing the percentage of the Contract Price specified in the Contract and denominated either in the currency (i.e.) of the Contract or a freely convertible currency acceptable to the Purchaser.