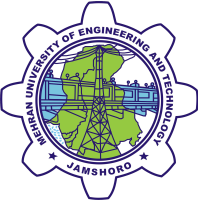
 MEHRAN UNIVERSITY OF ENGINEERING & TECHNOLOGY

JAMSHORO 76062, SINDH, PAKISTAN

USPCAS-W

ISO-9001: 2000 CERTIFIED



**TENDER DOCUMENT**

**Procurement of Lab Equipment and General Supplies for Advanced Water & Waste Water Quality Control Laboratory and Hydraulic Laboratory at**

**U.S.-PAKISTAN CENTER FOR ADVANCED STUDIES IN WATER (USPCAS-W)**

**MEHRAN UNIVERSITY**

**OF ENGINEERING AND TECHNOLOGY**

**JAMSHORO**

SINDH- PAKISTAN

**I N D E X**

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|  |  |  |
| --- | --- | --- |
| **S#** | **Description** | **Color** |
| **01.** | **B.O.Q. OF PROCUREMENT OF LAB EQUIPMENT AND GENERAL SUPPLIES FOR ADVANCED WATER & WASTE WATER QUALITY CONTROL LABORATORY AND HYDRAULIC LABORATORY AT USPCAS-W, MUET** | **Yellow** |

MEHRAN UNIVERSITY OF ENGINEERING & TECHNOLOGY

JAMSHORO 76062, SINDH, PAKISTAN

**“SAY NO TO CORRUPTION”**

No. PM/USPCAS-W/MUET/JAM/-36

Dated: 05-06-2018

**NOTICE INVITING TENDERS**

Sealed tenders are invited from all the interested Contractors / Firms / Parties / Suppliers / Manufacturers / Sole Distributors / Sole Agents meeting eligibility criteria, viz. having registration with Federal Board of Revenue (FBR) for Income Tax, Sales Tax in case of procurement of goods, registration with the Sindh Revenue Board (SRB) as the case may be and are not black listed in any procuring agency or authority, are invited to participate in sealed percentage / item rate tender for the following works:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **S.#** | **Name of Work** | **Tender Fee** | **Completion Time** | **Earnest Money** | **Date of Purchase** | **Date of Submission of Bids** | **Purchase From** |
| 1 | Procurement of Lab Equipment and General Supplies for Advanced Water & Waste Water Quality Control Laboratory and Hydraulic Laboratory, at USPCAS-W, MUET, Jamshoro. | 2000/- | 03 Month | 2% | 08-06-2018 to 25-06-2018 | 26-06-2018 | Procurement Manager USPCAS-W |
| 2 | Procurement of I.T. Equipment at USPCAS-W, MUET, Jamshoro | 2000/- | 02 Month | 2% |

The terms and conditions are given as under:-

1. The tender documents can be obtained from the Office of USPCAS-W, Mehran University of Engineering and Technology, Jamshoro or can be downloaded from SPPRA and MUET websites i.e. [www.pprasindh.gov.pk](http://www.pprasindh.gov.pk), [www.muet.edu.pk/tender-notices & water.muet.edu.pk](http://www.muet.edu.pk/tender-notices%20&%20water.muet.edu.pk) on the payment noted above (non-refundable) on any working day except the day of opening of tenders. The Tender fee should be in the form of Pay Order in favor of Project Director (USPCAS-W) or challan which can be obtained from the above mentioned office. The sealed tender on prescribed proforma along with 2% earnest money of total bid in the form of Pay Order in favor of Project Director (USPCAS-W), should be submitted in the above office by 26-06-2018 up to 01.00 PM and same will be opened on the same day, at 01:30 pm in the same office, in presence of the Contractors / representative, who so ever will be present at that time. In case of any unforeseen situation resulting in closure of office on the date of opening or if Government declares Holiday the tender shall be submitted / opened on the next working day at the same time & venue. Any conditional or un-accompanied of the earnest money, tender will not be considered in the competition.

2. The Method of Procurement is Single Stage - Two Envelope Procedure.

1. The bidders should have at least 05 years successful experience of same services of any university or large reputed organization in addition to instruction above.
2. The Bidders should have at least Rs. 1,000,000.00 annual turnover which would be verified by bank statement.
3. The bidders should be registered with Taxpaying Agencies which will be verified by concerned agencies.

***The Procuring Agency reserves the right to reject any or all bids subject to relevant provisions of SPPRA Rules, 2010 and may cancel the bidding process at any time prior to the acceptance of a bid or proposal under Rule-25” of said Rules.***

**Procurement Manager**

USPCAS-W

Mehran University of Eng. & Tech. Jamshoro,

Cell: 0300-8376911

Email: [ag.kandhir@admin.muet.edu.pk](mailto:ag.kandhir@admin.muet.edu.pk)

**AA-01**

**ARTICLES OF AGREEMENT**

**This Agreement** made this \_\_\_\_\_\_\_\_\_\_\_ day of \_\_\_\_\_\_\_\_\_\_\_ 2018, by and between the Project Director, U.S-Pakistan Center for Advanced Studies in Water (USPCAS-W), Mehran University of Engineering and Technology, located at Jamshoro, Sindh, including his successors in office and Assignees / Agents, acting through the Procurement Manager, U.S-Pakistan Center for Advanced Studies in Water (USPCAS-W), Mehran University of Engineering & Technology, hereinafter called the “**University**”, of the one part.

**And** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, located at \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, hereinafter called the “**Supplier / Contractor**” which expression shall include their successors, legal representatives of the second part.

(name and designation of the authorized person)

Whereas the **USPCAS-W /** **University** requires equipment for the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ for USPCAS-W, MUET, Jamshoro, and whereas the **Supplier / Contractor** has agreed to supply, install, put into operation and demonstrate the working of the said Equipment valued at Rs. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (in figures and words) in the period of \_\_\_\_\_\_\_\_ months, subject to the terms and conditions set forth, hereinafter, which have been accepted by the **Supplier / Contractor**.

(amount in figures and words)

**Now this Agreement witnesses 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** hereinafter referred to.
2. The following documents which, for the purpose of identification, have been signed by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ on behalf of the **Supplier / Contractor,** and by

(name and designation of the authorized person)

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ on behalf of the **University**, all of

(name and designation of the authorized person)

which shall be deemed to form and be read and construed as a part of this **Agreement** viz.:

1. Articles of Agreement;
2. Instructions to Tenderers;
3. Conditions of Contract;
4. Supplier / Contractor’s Offer including the relevant correspondence prior to signing of this

Agreement with all Annexures duly filled in;

1. The specifications of the equipment; and
2. Bill of Quantity with prices.

**AA-02**

1. In consideration of the payment to be made to the Supplier / Contractor, the **Supplier / Contractor** hereby **covenants** with the University to supply, deliver, install, put into operation and demonstrate the working of the Equipment Supplies in conformity in all respects of the Contract & the order form No. \_\_\_\_\_.
2. The **USPCAS-W / University** hereby **covenants to pay** the Supplier / Contractor in consideration of the supply, delivery, installation, putting into operation and demonstration of the working of the Equipment the contact price in the manner prescribed by the Contract and approved by the University.

**In Witness Thereof** the parties have hereunto set their respective hands and seals, the day, month and year first above written.

**WITNESSES:**

USPCAS-W \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Contractor/ Supplier \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Witness No.1: Witness No.1:

Signature:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Signature:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Designation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Designation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Witness No.2. Witness No.2:

Signature:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Signature:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Designation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Designation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**IT-01**

**INSTRUCTIONS TO TENDERERS**

The U.S Pakistan Center for Advanced Studies in Water (USPCAS-W), Mehran University of Engineering and Technology, Jamshoro, Sindh, intends to purchase Equipment, Chemical and Accessories for HEC Research Project at USPCAS-W, MUET under the USPCAS-W project. This tender is issued for the supply, installation, putting into operation and demonstration of the working of the Equipment as per the Schedule of requirements given in this Tender Document.

**PREPARATION OF TENDER.**

1. **Language of Tender**

The **Tender** alongwith any accompanying literature shall be prepared in **English** language only:

2. **Submission of Tender**

1. The **Tender** shall be enclosed in a double cover. The outer cover shall bear the address of the Procurement Manager, USPCAS-W, Mehran University of Engineering and Technology, Jamshoro, Sindh, without any indication that it encloses a tender. The inner cover shall be marked with the little of the Tender, number of invitation to the Tender and the date of opening of the Tender, and **must be sealed**.
2. The **Form for Tender**, (Annexure-A) **Tender Particulars (Annexure-B)** and **Forms of Schedule to Tender** (Annexure “C1”&”C2”) enclosed herewith, shall be submitted in duplicate. The authorized person signing the tender documents must state his full name and authorized position designation underneath his signature.
3. The **erasing and/or alterations**, if any, in the Tender shall be authenticated by the authorized person by his full signature.
4. The **Tender** shall be accompanied with the **original quotations** from the manufacturers, in case the Tender is submitted through their authorized agents or distributors, and shall be supported by credentials establishing the experience and standing of the manufacturers and / or their authorized agents or distributors.
5. **Ambiguous and incorrect answers** and/or incorrect filling of Tender Documents will render the tender liable to rejection.
6. **Quotations** through cable, telegraph, telex, fax, or e-mail will not be considered.

**IT-02**

1. The tenders shall not rely on any **interpretation or correction** given by any person except the written **addenda and/or corrigenda** to documents issued by the Procurement Manager, USPCAS-W, Mehran University of Engineering and Technology, Jamshoro, Sindh.

**3. Bid Bond and Contract Performance Bond**

* 1. The tenderer shall enclose with his/her tender a **Bid Bond** on requisite stamp paper, as per **Annexure “D”** to this Tender Document, issued by a scheduled/commercial bank doing business in Pakistan, for an amount equivalent to **2% of the total cost** of the Equipment Supplies offered as per the Tender submitted by him/her, or Rs. 50,000.00 (fifty thousand), whichever is more. The Bid Bond shall be in favour of the Project Director, USPCAS-W, Mehran University of Engineering and Technology, Jamshoro. The bond so furnished shall remain **valid for a period 28 days beyond the period of validity of the Tender** or till it is revalidated/extended for a period mutually agreed upon by the tenderer and the Procurement Manager, USPCAS-W, Mehran University of Engineering and Technology, Jamshoro, Sindh.
  2. As soon as an award is made, the provisions in paragraphs **c), d) and e)**, hereunder, shall **operate**.
  3. If the Tender is **rejected**, the Bid Bond will be returned to the tenderer as soon as possible after rejection.
  4. The **successful bidder** shall have to give a **Contract Performance Bond**, as per **Annexure “E”** to this Tender Document, to the extent of **2% of the total value** of the contract on the same conditions as the Bid Bond. The Performance Bond shall be retained by the Procurement Manager, USPCAS-W, Mehran University of Engineering and Technology, till the completion of the guarantee period as per Clause 23 of the Conditions of Contract.

1. **Quality of Equipment.**
   1. The Equipment and other relevant materials (hereinafter called **“Equipment”**) quoted and supplied against this “Invitation to Tender” shall be strictly in accordance with the **Specifications** attached with this Tender Document. The Equipment shall be the product of an established manufacturer shall conform to internationally acceptable commercial standards, and shall be a model that has been successfully operated over a reasonable period of time in educational institutions R&D organizations, or relevant industry.

* 1. In Tenderers must also warrant the use of best material in the making of the, Equipment by the find that the Specifications for any items of the Equipment are lacking in details, they may give their own proposals with detailed specifications, preferably three alternate proposals if possible, for such items in Annexure “F”.

**IT-03**

* 1. The Equipment offered by the tenders must be of a quality suitable for the purposes and operations for which they are required, and must be capable of rendering the required performance and services at site in the local conditions of extreme tropical climate, air, dust, water, power and fuel at Jamshoro.
  2. The Hardware for operation of the Equipment will be made available by the University.
  3. The electric supply for operation of the Equipment will be made available at 220 volt single phase, or 380 volt three phase, and 50 cycles.
  4. The Equipment offered shall be complete with their standard accessories and must be accompanied by their normal instructions book/manual.
  5. Wherever possible or feasible, each item of Equipment offered must have its own protection devices, e.g, overload protection by circuit breakers or fuses, or voltage stabilizer for electric equipment.
  6. Unless stipulated otherwise in the specifications for any item, the Equipment conforming to ASA, SAE, SSI or DIN will be acceptable.
  7. The successful bidders may be asked to supply list of spares for 05 years satisfactory operation of any item of the Equipment prior to award of the contract.

1. **Literature**.

The tenderers must furnish with their bids catalogues giving full technical details of the Equipment to enable the USPCAS-W to check their offers technically against the prescribed specifications failing which the offers will be liable to rejection.

1. **Principals Name, Certificate and Invoice.**
   1. The tenderers are requiried to mention in their quotations/offers the name and address of their Principals along with a certificate authorizing them (tenderers) to quote on their (Principals) behalf as under:

“This is to certify that M/S.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_located at\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ have obtained quotations from us against tender inquiry No.\_\_\_\_\_\_\_ dated \_\_\_\_\_\_ from USPCAS-W, Mehran Univiersity University of Engineering and Technology, at Jamshoro, due for opening on \_\_\_\_\_\_\_\_\_\_\_\_ and have agreed to make available the Equipment on the quotations and terms and conditions of the tender”.

The above condition does not apply to the manufacturers bidding directly.

* 1. The tenderers must also furnish along with their offers their Principals original Proforma Invoice failing which their offers will be rejected.

7. **Country of Origin.**

The tenderers must state in his Tender the country of origin of the Equipment offered.

8. **Alternative Proposal.**

If any tenderer elects to submit alternative proposal(s) complete information on the alternative items including all data relating to technical specifications in Vol. I, II & III shall be given as per Annexure “F”.

**IT-04**

9. **Prices.**

1. **CATEGORY-‘A’ Equipment Manufactured/Available in Pakistan without**.

**Involving Import**.

The prices quoted must be total per unit in Pakistani Rupees as shown in **Annexure “C-1”** and shall include:

* + 1. All charges for packing, marking, handling, insurance, inspection, guarantees, freight/transportation, agent’s commission; and all duties, taxes, levies, octrois etc; and.
    2. The cost of installation, putting into operation and demonstration of the working of the Equipment in the premises of the USPCAS-W / University.

b) **CATEGORY-“B”**. **Equipment Imported from approved Countries.**

The prices must be quoted for each item of Equipment in **Annexure-“C2”** separately for each of the PARTS given below:

**PART-1**. **Payment in Foreign currency.**

The C&F prices quoted by the Principals in the currency of the country of origin.

For the purpose of comparison, the prices quoted shall be converted to equivalent prices in Pakistani Rupees on the basis of the official bank rate prevalent on the date of opening of the Tender.

**PART-2 Payment in Pakistani Rupees.**

(i) The agent’s/ Supplier / Contractor’s commission in Pakistani Rupees.

(ii) The insurance charges. The insurance will be arranged by the Supplier / Contractor through the University with EFU General Insurance Company. The University will assist the Supplier / Contractor in obtaining the insurance at concessional rates, if any, as allowed by the Government.

(iii)The cost of installation, putting into operation and demonstration of the working of the Equipment in the USPCAS-W, MUET, Jamshoro in Pakistani Rupees.

(iv) All the charges pertaining to handling and clearance of the Equipment at the port including all taxes, levies, octrois etc. but excluding the customs duties for the payment of which the USPCAS-W / University is exempted by the Government. However, if the customs duties are charged for any items of the Equipment for which the Government the exemption, the USPCAS-W /University will make the payment.

**IT-05**

1. The transportation charges for transporting the Equipment from the port to the premises of the USPCAS-W / University including the charges for loading the Equipment at the port and unloading the same at the USPCAS-W / University.

For the purpose of evaluation/comparison of bids, as stated in Clause-15, the total price for the Equipment under this Category shall be the sum of the amounts mentioned for Parts 1 & 2 above.

(c) In addition to what is stated in para a) & b) above, the prices given in Annexure C1 & C2 shall also include the following for the Equipment of both the Categories-A & B.

(i) Supply, detailing, manufacture, factory testing, export preparation and all costs incidental to shipping/transport up to the stage of installation in the premises of the USPCAS-W /University.

(ii) Responsibility for any loss and/or damage at any stage from manufacture to installation in the premises of the USPCAS-W /University.

(iii) Provision for clean on boards bills of landing.

(iv) The cost of export taxes, fees and charges levied and outgoing incurred on

exporting goods in the country of origin.

(v) The expenses on account of the certificate of origin, invoices or any other

documents issued in the country or origin.

1. **Validity of Prices/Tender**
2. The prices quoted shall be valid for a period of at least 90 days from the date of opening of the tender.
3. Until the final Contract is executed, the successful bidder shall be bound by the terms and conditions of this Tender Document.
4. **Acceptance of the Terms**
   1. The submission of the tender against this tender inquiry by the tenderer means that the tenderer has read and accepted the terms and conditions relating to all the tender documents and annexures, and that he/she has thoroughly examined the specifications and particulars in the tender inquiry. Further the tender shall be deemed to be fully aware of the nature of the Equipment and the purpose for which they are required and shall be bound to accept the Contract if placed with him/her on the basis of the prices and of the delivery schedule as indicated in Clause 12 hereof within the validity of his/her Tender.

**IT-06**

* 1. If the Tender is awarded in favour of Proprietor / Principals who has no authorized agent or distributor in Pakistan, he/she shall have to appoint a distributor or nominee for the purpose of successful completion of the contract and to provide after-sales service.

1. **Delivery Period.**
2. Shipment of Imported Items.
   1. The shipment of the items of Equipment which are to be imported shall be started as early as possible, the shipment schedule shall be submitted to the Project Director USPCAS-W, Mehran University, and shall be negotiable and subject to approval by the USPCAS-W /University.
   2. The tenderer must indicate in his/her offer the port from where the Equipment will be shipped.
3. Delivery Period.
   1. The entire Equipment must be delivered, installed and put into operation in the USPCAS-W of the University as early as possible after receiving the letter of award of the Contract.
   2. The Tenderer shall give in the offer his/her own schedule for the delivery and installation of various items of the Equipment which shall be negotiable and subject to approval of the USPCAS-W / University.
4. Delay in the Delivery of the Equipment Supplies.
   1. For the Equipment delayed beyond the delivery period, as specified in the Contract, or as approved by the USPCAS-W / University as stated in Clause 12 ii b) above, there shall be levied liquidated damages as specified in Clause 22 of the Conditions of Contract given in this Tender Document.
   2. The liquidated damages may be waived fully or partially by the Project Director USPCAS-W, with the approval of the Vice Chancellor of the University, if there are reasonable grounds for such a delay.

**13. Negotiations.**

Under no circumstances will the negotiations take place with any tenderer with regard to Specifications and Prices quoted and read out at the public opening of the tenders and with regard to the substance of the offer. The tenderers cannot revise their prices after the public opening of the tenders.

**14. Rights of the USPCAS-W / University**

(a) The USPCAS-W / University reserves the right to reject any or all bids as mentioned in SPPRA rules, or not waive minor irregularities or errors in any offer. It if appears to the USPCAS-W / University that such irregularities or errors must be corrected in the offer in which they occur, the same will be corrected prior to issue of the letter of intent which may be awarded thereupon.

**IT-07**

(b) The USPCAS-W / University is neither bound to accept the lowest or any other offer nor is it bound to assign reason for rejection of any offer.

* 1. The USPCAS-W / University reserves the right to award the contract to one bidder or divide it among several bidders.
  2. The USPCAS-W / University reserves the right to increase or decrease the quantity of the Equipment at its discretion without assigning any reason whatsoever.
  3. The USPCAS-W / University reserves the right to cancel the offer of the tenderer whose bid has been found / evaluated to be the lowest if it is revealed to the USPCAS-W / University that the tenderer does not have the capability or financial resources or facilities to carry out the Contract in accordance with the terms and conditions of this Tender Document.

**15. Evaluation of Bids.**

1. In comparing bids the USPCAS-W / University will consider, besides the prices quoted, such other factors as compliance with specifications, relative quality of Equipment Supplies, past experience of the tenderer, after-sales services facilities available in Pakistan and the tenderer’s capacity to perform.
2. The evaluation criteria specifically mentioned in the specifications will also be considered for evaluation of the bids.
3. For the purpose of evaluation, the prices to be compared shall be the total prices inclusive of all duties, taxes, freight charges etc. as stated in clause 9 titled “Prices” above.

(i) For the items quoted in Annexure-C-1, the total prices as mentioned in Clause-9(b) shall be compared.

(ii) For comparison of the items quoted in Annexure C-1 with those quoted in Annexure C-2, the total prices as mentioned in Clause-9(a) including the charges/cost packing, making, handling, insurance, inspection guarantees, clearance, freight/transportation upto the University’s premises duties, taxes, levies, octrois etc.

1. **Errors in the Bids.**

(i) Any arithmetic errors found during evaluation of bids will be rectified on the following basis:

* 1. 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 by the USPCAS-W / University.
  2. If there is a discrepancy between the words and figures, the amount in figures shall prevail.

**IT-08**

* 1. If there is any discrepancy between the total tender price entered in the Articles of Agreement and the total shown in the Schedule of Prices, the amount stated in the Articles of Agreement shall be corrected by the USPCAS-W / University in accordance with the corrected schedule of Prices.

(ii) If the tenderer does not accept the corrected amount of tender, his/her Tender will be rejected and the Bid Bond submitted with the tender shall be forfeited.

1. **Foreign Exchange for Items of Equipment to be imported.**

For the items of Equipment which are to be imported and for which the prices have been quoted on C&F basis in Annexure C-2, the University will arrange payment in the foreign currency, to the extent of the C&F amount, as stated in Clause 9(b), through its bank in Pakistan in accordance with the prevailing foreign exchange control rules/regulations of the Government of Pakistan.

**CC-01**

**CONDITIONS OF CONTRACT**

**1. Scope of the Contract**

1. The **Scope of the Contract** shall be the supply, delivery, installation, putting into operation and demonstration of the working of the Equipment in the premises of the USPCAS-W / University at Jamshoro, Sindh, in accordance with the technical Specifications and Bill of Quantities enclosed in this Tender Document.
2. The Supplier / Contractor shall within a period of one month of the execution of the agreement furnish to the University a **detailed program** for supply and delivery of various items of the Equipment for necessary approval by the USPCAS-W / University.

**2. Definition of Terms**

In writing these Conditions of Contract, Specifications and Bill of Quantities, the following words shall have the meanings hereby indicated, unless there is something in the subject matter or Contract inconsistent with such constructions:

1. **The University** shall mean the Mehran University of Engineering and Technology, Jamshoro, Sindh.

1. **USPCAS-W / University** shall mean the U.S.Pakistan Center for Advanced Studies in Water, Mehran University of Engineering and Technology, Jamshoro, Sindh.
2. **The Project Director** shall mean the Project Director of USPCAS-W, Mehran University of Engineering and Technology, Jamshoro, Sindh, including his successor in office and assignees, empowered to act in all matters pertaining to the University either directly or through the Procurement Manager USPCAS-W, Mehran University of Engineering and Technology, Jamshoro.
3. **The Supplier / Contractor or Supplier / Contractor** shall mean the Tenderer (Bidder) whose Bid has been accepted by the University and shall include the Bidder’s executors, administrators, successors and permitted assignees.
4. **The Equipment** shall mean and include all the Equipment Supplies, literature, materials and articles to be provided by the Supplier / Contractor under the Contract.
5. **The Contract** shall mean the agreement signed by the Supplier / Contractor for the supply, delivery, installation, putting into operation and demonstration for the working of the Equipment as stated under the Scope of the Contract above.
6. **The Contract Price** shall mean the sum mentioned in or calculated in accordance with the provisions of the Contract, which is to be paid to the Supplier / Contractor for satisfactory execution of the Contract in accordance with these Conditions of Contract.

**CC-02**

1. **The Specifications** shall mean the specifications annexed to or issued, herewith, and shall include the schedule and drawings attached hereto as well as the samples and patterns if any.
2. **Month** shallmean the Calendar month.
3. **Writing** shall include any manuscript, type-written, printed or other statement reproduced in any visible form and whether under seal or under hand.

**3. Contract Documents.**

a) The term **Contract Document** shall mean the following documents which shall be deemed to form an integral part of the Contract:

* 1. Articles of Agreement;
  2. Instructions to Tenderers;
  3. Conditions of Contract;
  4. Supplier / Contractor’s Proposal / Offer including the relevant correspondences prior to signing of the agreement with all Annexures duly filled in;
  5. The Specifications of the Equipment; and
  6. Bill of Quantities with prices.

b) In the event of any **conflict** between the above mentioned documents, the present Articles of Agreement and Conditions of Contract shall prevail.

**4. Signing of the Contract Agreement**

Within 30 days of the issue of the letter of intent, the successful bidder (bidders) will be required to **sign an agreement** with the USPCAS-W / University for the supply of such quantity, in whole or in part, of the tendered Equipment as will be communicated to him / her (them) in the letter of intent.

**5. Packing, Marking and Handling**

a) All the Equipment Supplies, whether imported or locally manufactured / available, shall be delivered to the USPCAS-W / University at Jamshoro in **safe and secure condition** at the risk and cost of the Supplier / Contractor.

b) The packing, marking and handling shall be so arranged by the Supplier / Contractor as to **prevent any loss of or damage** to the Equipment.

**CC-03**

c) In case any of the items of the Equipment are to be imported by the Supplier / Contractor, the **import** shall be **arranged by the Supplier / Contractor** himself / herself with such packing and marking and through such means as deemed fit by him / her for safe and secure delivery at Jamshoro. The packing of the equipment shall be the usual export packing to ensure safe journey by air, sea, rail and road, as the case may be, of the Equipment to destination. Each packing shall be clearly marked in English with the following:

i. Port of Destination: KARACHI.

ii. Name of the Ship: \_\_\_\_\_\_\_\_\_\_\_\_\_\_

iii. Name of the Consignee: PROJECT DIRECTOR (USPCAS-W),

MEHRAN UNIVERSITY OF

ENGINEERING & TECHNOLOGY

JAMSHORO, SINDH, PAKISTAN

i. Name of the Supplier / Contractor: SUPPLIER / CONTRACTOR’S NAME & ADDRESS

ii. Case Number & Contents: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

iii. Net Weight & Dimensions: (length, Breadth & Height)

iv. Gross Weight: (Kg.)

v. Number & Date of Contract: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ vi. Marking: **MUET** in a 6 in. x 4 in. rectangle

**MUET**

**6. Transportation and Shipment**

**a. For Equipment to be Imported**

i. All those items of Equipment which are to be imported by the Supplier / Contractor shall be **shipped** by whatever means the Supplier / Contractor deems fit **at** **his / her risk and cost**. The Supplier / Contractor must keep USPCAS-W / University informed of the shipping arrangements, schedule of shipping, arrival at the port, clearance from the port, and transportation from the port to the University at Jamshoro.

**ii. All costs** of loading of the Equipment from the wharves at port of shipment and also the cost of ship wharf age / berthing, demurrage charges, stevedoring, handling charges and other port and river dues in respect of shipment companies’ vessels at the port of shipment and all other expenditure up to the stage of placing the Equipment at rest on board the ship and the freight charges shall be **borne by the Supplier / Contractor**.

iii. Similarly all costs of unloading the Equipment at the wharves, wharf age / berthing, demurrage, stevedoring, handling charges and other port dues at the port of arrival in Pakistan and transportation from the port up to the stage of placing the Equipment position in the premises of the University shall be borne by the **Supplier / Contractor**. In order to facilitate the clearance of the Equipment at the port of arrival, a clearing agent will be engaged by the USPCAS-W / University, in consultation with the Supplier / Contractor, who will get the Equipment cleared with the assistance of the USPCAS-W / University and the Supplier / Contractor, and the clearing agent’s charges shall be **borne by the Supplier / Contractor.**

**CC-04**

iv. All things being equal, **Pakistan flag ships** should be used, as far as possible, for shipment of the Equipment. If no such ship is available, such other ships may be used consistent with the execution of this Contract with economy and efficiency.

v. The Equipment must be shipped **under deck**

vi. The Supplier / Contractor shall send by air mail / courier service or personally deliver 4(four) sets of non-negotiable shipping documents direct to the Project Director USPCAS-W, Mehran University of Engineering and Technology, Jamshoro, Sindh, so as to reach him at least 8 (eight) days before arrival of the ship at the port in Pakistan.

**b. For Equipment Manufactured / Available in Pakistan**

**i.** All those items of the Equipment which are to be manufactured in Pakistan, or are to be supplied from the locally available stocks (whether imported or manufactured in Pakistan), may be transported from the place of manufacture or availability to Jamshoro by **any mode of transportation** as deemed convenient and suitable by the Supplier / Contractor at his / her risk and cost.

ii. **All costs** of handling, loading, transportation, unloading and placing the Equipment in position in the premises of the USPCAS-W / University shall be **borne by the Supplier / Contractor**.

**7. Pre-shipment and After-fabrication Inspection**

a) The **pre-shipment inspection** and / or the inspection of the Equipment Principals/Proprietor at the premises, if desired by the USPCAS-W / University, shall be arranged by the Supplier / Contractorat his / her own cost. The responsibility for the quality, quantity, correctness and adherence to the Specifications etc. of the Equipment shall lie solely and squarely on the Supplier / Contractor.

b) The USPCAS-W / University may, at its discretion, waive pre-shipment inspection and hence issue the waiver in writing so that the Equipment could be shipped under manufacturer’s test certificate. This waiver shall be deemed as authorization to ship for the purpose of negotiating the letter of credit under Clause 13(b) ii.

c) The pre-shipment inspection and/or the waiver thereof shall in no any above the Supplier / Contractor of any of his obligations under this Contract.

**CC-05**

**8. Insurance**

The **Supplier / Contractor shall arrange** the insurance for the Equipment in whatever way he / she deems fit at his / her risk and cost. The prices quoted in the offer of the Supplier / Contractor shall include the cost of insurance. The Supplier / Contractor shall have to inform USPCAS-W / University of the Insurance Arrangements made by him / her for the Equipment.

**9. On-arrival Inspection**

There shall be inspection of the Equipment by the representatives of the University after arrival in the premises of the USPCAS-W / University in presence of the Supplier / Contractor or his authorized representatives and the representatives of the insurance company. The **inspection report**, which, inter-alia, should indicate the condition in which each item of the Equipment has been received, shall be signed by the above representatives. The Supplier / Contractor shall coordinate with the Procurement Manager, USPCAS-W, Mehran University, and the insurance company for arranging the inspection at such date and time as is convenient to the above representatives.

**10. Taking Over**

Upon receipt of the Equipment Supplies in the premises of the University and after inspection, as stated in Clause 9 above, the USPCAS-W / University will issue a **taking-over certificate** in respect of those items of Equipment which are received in acceptable condition. The taking-over of the damaged items will be with-held until the same are repaired / replaced and are re-inspected and found in acceptable condition.

**11. Installation and Demonstration of Equipment Supplies.**

**a). Installation**

**i)** After inspection and taking over of the Equipment as stated in Clauses **9** and **10** above, if required the **Supplier / Contractor shall install** those items of Equipment which are to be permanently positioned in place in the premises of the USPCAS-W / University. For this purpose, the Supplier / Contractor shall co-ordinate with the Project Director, USPCAS-W, Mehran University, for making arrangements for the Hardware needed for the installation.

**ii)** The cost of hardware **for such installation** shall be borne by the Supplier / Contractor/ Contractor as per contract. The Supplier / Contractor shall provide, along with his offer, the details of the hardware needed for each item of the Equipment separately. The technical and other personnel needed for installation of the Equipment shall be provided by the Supplier / Contractor at his cost. The entire cost of installation, configuration, application except that of the needed hardware, shall be borne by the Supplier / Contractor.

**CC-06**

**b) Demonstration**

**i)** After installation of the Equipment, as stated in Clause **11 a)** above, the complete **working of each item** of Equipment for the purpose of performing the intended Laboratory experiments, testing of specimens and recording of the test results etc., shall be demonstrated fully to the designated staff of the University by the Supplier / Contractor or his technical personnel.

**ii)** The entire **cost**, including the T.A. / D.A. of the personnel involved in the demonstration, shall be **borne by the Supplier / Contractor**.

**12. Completion Certificate**

After completion of the installation and demonstration, as stated in Clause **11** above, a certificate is to be obtained by the Supplier / Contractor from the concerned **Department** stating that the Equipment (item-wise) have been satisfactorily installed and demonstrated by the Supplier / Contractor.

**13. Terms of Payment**

The Supplier / Contractor shall be paid for Equipment in the following manner:

a) **CATEGORY A:** **Equipment Manufactured/Available in Pakistan without involving import.**

i. For all those items of Equipment for which the completion certificate has been issued by the University, as stated in Clause **12** above, the University will pay to the Supplier / Contractor total price of the items quoted by the Supplier / Contractor.

**ii.** The payment for those items of Equipment for which the completion certificate has not been issued by the University, as stated in Clause **12** above, will be with-held and released only after the damaged items are replaced / repaired, re-inspected and found in satisfactory condition with consequent issuance of the completion certificate. The payment will be made in the same manner as stated in Clause **13 a) i** above

b) **CATEGORY-B**: **Equipment Imported from Approved Countries**.

The payment for this category of Equipment will be made in two parts as under:-

**PART-I.** **Payment in Foreign currency**

i. An irrevocable **letter of credit** of the C&F price, in the currency quoted by the Principals, will be opened in a bank in the country of origin in favor of the Principals/Supplier / Contractor within 30 days after signing the Contract.

**CC-07**

ii. The letter of credit amount will be paid against presentation of the shipping documents to the bank through the above letter of credit. The required shipping documents include:

* + - * Clean on board bill of lading;
      * Supplier / Contractor’s detailed invoice showing description of the Equipment specifications, quantity, unit price and total price;
      * Detailed packing list;
      * Certificate of origin of the Equipment and
      * Certificate of pre-shipment/after-fabrication inspection or authorization to ship the Equipment as per Clause-7.

**PART-2.** **Payment in Pakistani Rupees**

The Rupee component of the price of the Equipment as stated in Clause **9b) of “Instructions to Tenderers”** will be paid to the Supplier / Contractor in the following manner:

* 1. For all those items of Equipment for which the taking over certificate has been issued by the University, as stated in Clause **10** above, the University will pay as per contract of the total price of the items quoted by the Supplier / Contractor/ Contractor.

* 1. The payment for those items of Equipment for which the completion certificate has not been issued by the University, as stated in Clause **10** above, will be withheld and released only after the damaged items are replaced/repaired, re-inspected and found in satisfactory condition with consequent issuance of the completion certificate. The payment will be made in the same manner as stated in Clause **13 a)i** above

**14. Warranty / Guaranty**

**a)** The Supplier / Contractor shall **warranty** that the Equipment shall be fit for the purposes and operation mentioned in the relevant clauses of the “Instructions to the Tenderers” and “Conditions of Contract”, notwithstanding the fact that the entire Equipment or any item or part of the Equipment bear or are found to bear a patent or trade mark.

**b)** The Supplier / Contractor shall guarantee supply of good quality Equipment in accordance with the Specifications and as stated in Clauses 4 and 5 of the “Instructions to the Tenderers”. Further, the Equipment shall be brand new and absolutely free from all defects in material, quality and workmanship. In case of defects, the defective Equipment or the defective parts / components of the Equipment thereof, shall be replaced by the Supplier / Contractor free of cost to the University within reasonable time.

**CC-08**

**15. Breach of Contract**

In case of breach of warranty /guarantee or Contract, the **damages** suffered by the USPCAS-W / University shall be **recovered from the Supplier / Contractor** out of any payment due to the Supplier / Contractor and / or in accordance with the terms and conditions of the Contract Performance Bond given at Annexure “E” enclosed with this Tender Document, without notice to the Supplier / Contractor.

**16. Supplier / Contractor’s Default Liability**

**a)** USPCAS-W / University may upon written notice of default to the Supplier / Contractor **terminate the Contract** in the circumstances detailed hereunder:

i. If in the judgment of the University, the Supplier / Contractor fails to make delivery of the Equipment within the time specified in the Contract Agreement or within the period for which extension has been granted by the University; and

ii. If, in the judgment of the University, the Supplier / Contractor fails to comply with any of the other provisions of the Contract.

**b)** In the event the USPCAS-W / University terminates the Contract, in whole or in part, as provided in Clause **16 a)** above, the USPCAS-W / University reserves the right to **purchase**, on such terms and conditions as it may deem appropriate, Equipment similar to the one terminated, and the Supplier / Contractor will be liable to the USPCAS-W / University for any additional costs for such **similar Equipment** and / or for liquidated damages for delay, as defined in Clause **22** of the Conditions of Contract until such reasonable time as may be required for the final supply of the Equipment.

**c)** If the Contract is terminated, as provided in Clause **16 a**) above, USPCAS-W / University, in addition to any other rights provided in this Clause, may require the Supplier / Contractor to **transfer title** and deliver to the University under any of the following cases in the manner and as directed by the University:

i) Any **completed Equipment**; and

ii) Such **partially completed Equipment**, drawings, information and contract right (hereinafter called manufacturing material) as the Supplier / Contractor has specifically produced or acquired for the performance of such parts of the Contract as has been terminated.

d) The USPCAS-W / University will **pay to the Supplier / Contractor** the Contract Price for the completed Equipment delivered to and accepted by the USPCAS-W / University and also for the manufacturing materials delivered and accepted.

e) In the event the USPCAS-W / University does not terminate the Contract, as provided in Clause **16 a)** above, the Supplier / Contractor shall continue with the performance of his / her Contract, in which case the Supplier / Contractor shall be liable to the USPCAS-W / University for **Liquidated Damages for delay** as set out in Clause 22 until the Equipment are accepted.

**CC-09**

**17. Bankruptcy**

If the **Supplier / Contractor** shall become **bankrupt** or have a receiving order made against him / her or compound with his / her creditors, or being a corporation commence to be wound up, not being a voluntary winding up for the purpose of amalgamation or reconstruction, or carry on its business under a receiver for the benefit of its creditors or any of them, **USPCAS-W /** **University shall** be at liberty to:

1. **terminate the Contract** forthwith by a notice in writing to the Supplier / Contractor or to the liquidator or receiver or to any person in whom the Contract may become vested, and to act in the manner provided in Clause 16 above as though the last mentioned notice has been the notice referred in such Clause and the Equipment have been taken out of the Supplier / Contractor’s hand; and / or
2. give such liquidator, receiver, or other person the **option of carrying out the Contract** subject to his / her providing a guarantee for the due and faithful performance of the Contract upto an amount to be determined by the University.

**18. Termination of Contract**

1. If, for any cause as set forth in Clause **19** hereafter, the Supplier / Contractor finds it impracticable to continue operation or, if owing to force majeure or to any cause beyond its control, the University finds it impossible to continue operation, then **prompt notification** in writing shall be given by the party affected to the other.
2. If the delay or difficulties so caused cannot be expected to cease or become avoidable, or if operation cannot be resumed within six months, then either party shall have the right to terminate the Contract by giving ten **(10) days** **written notice** to the other.
3. In the event of termination of the Contract under this Clause, **payment** will be made to the Supplier / Contractor as follows:

i) The Supplier / Contractor shall be paid for all the Equipment for which the completion certificate has been issued, as stated in Clause 12, and for all the reimbursable expenses due and unpaid.

ii) The Supplier / Contractor shall also be paid reasonably for any work done during the said six months period as well as for settlement of any financial commitment made in connection with proper performance of the Contract and which are not reasonably defrayed by payments under i) above.

iii) On termination of the contract for any cause, the Supplier / Contractor shall see to the orderly suspension and termination of operations with due consideration to the interests of the University with respect to completion, safeguarding or storing of the Equipment produced for the performance of the Contract and the salvage and resale thereof

**CC-10**

**19. Force Majeure.**

**The Supplier / Contractor shall not be liable** for any additional cost or for liquidated damages for delay or any failure to perform the Contract arising out of force majeure or cause beyond his / her control including acts of God, or of the public enemy, or of the Government, fires, floods, epidemic quarantine restrictions, strikes, freight embargoes and default of sub Supplier / Contractors due to any such cause (unless the USPCAS-W / University shall determine that the Equipment to be furnished by the Supplier / Contractor might reasonably have been obtained from other sources in sufficient time to allow the Supplier / Contractor to meet the required time schedule), provided that the Supplier / Contractor shall within ten (10) days from the beginning of such delay notify the USPCAS-W / University in writing of the **causes of the** **delay**. The USPCAS-W / University shall ascertain the facts and the extent of the delay and **extend the time** for completing the supplies as in its judgment the findings justify.

**20. Rejection**

a) In the event any portion of the Equipment supplied by the Supplier / Contractor is found before taking over to be **defective in material or workmanship**, or otherwise not in conformity with the requirements of the Contract, the USPCAS-W / University shall have the right to either reject or require, in writing, rectification of the Equipment. In the later case, the Supplier / Contractor shall with utmost diligence, and at his own expense, make good the defects so specified or replace the defective Equipment. If the Supplier / Contractor fails to rectify or replace the rejected Equipment, USPCAS-W / University may adopt any of the following options:

i) **replace or rectify**, at its option, such defective Equipment and charge to the Supplier / Contractor the excess cost occasioned to the USPCAS-W / University plus (15%) fifteen percent; or

ii) acquire the said Equipment **at** a **reduced price** considered equitable under the circumstances; or

iii) **terminate the Contract** as provided in Clause **18** of these Conditions of Contract.

b) Nothing in this Clause shall affect any claim by the University under Clause **22** hereafter.

**21. Extension of Time**

If the completion of the Contract is delayed due to reason beyond the control of the Supplier / Contractor, the Supplier / Contractor shall without delay request USPCAS-W / University, in writing, of his **claim** for an extension of time. USPCAS-W / University on receipt of such request may agree to **extend the completion date** as may be reasonable in the circumstances of the case but without prejudice to other terms and conditions of the Contract.

**CC-11**

**22. Delay in Delivery - Liquidated Damages**

1. Should the **progress** of the Contract at any time be **lagging behind** the program agreed between the USPCAS-W / University and the Supplier / Contractor, USPCAS-W / University will notify the Supplier / Contractor in writing and the Supplier / Contractor shall there upon take such steps as he / she may deem fit to **expedite the progress** of the Contract. Non-issuance of this notice by the University shall not in any way absolve the Supplier / Contractor of the liquidated damages as stated in Clause **22 b**) below.

1. If the Supplier / Contractor **fails to complete the Contract**, in full or part, within the time laid down in the Contract Agreement or any extension thereof, there shall be deducted from the Contract Price, as **liquidated damages**, a sum of one half of one percent **(0.5%) of the Contract price** of each unit of the delayed Equipment for each calendar week of delay subject to the maximum of five percent (5%) of the Contract Price of the unit or units so delayed, and such deduction shall be in full satisfaction of the Supplier / Contractor’s liability for the said failure.

**23. Period of Guarantee**

1. The term **period of guarantee** shall mean the period of twelve **(12) months** from the date on which the Equipment have been put into operation and demonstrated to USPCAS-W staff.
2. During the period of guarantee, the Supplier / Contractor shall **remedy**, at his / her expense, **all defects** in design, materials, and workmanship that may develop or are revealed under normal use of the said Equipment upon receiving written notice from the University; the notice shall indicate in what respect the Equipment are faulty.
3. The provisions of this Clause include all the **expenses** that the Supplier / Contractor may have to incur for delivery and installation of such replacement parts, material, and equipment as are needed for satisfactory operation of the Equipment at the University premises.

**24. Non-assignment**

The Supplier / Contractor shall **not have the right to assign or transfer** without the prior approval of the University the benefit and obligations of the Contract or any part thereof.

**25. Expenditure under Contract**

The Supplier / Contractor shall not make any expenditure for the purpose of this Contract in any **country not authorized** by the Government of Pakistan

**CC-12**

**26. Certificate Not to Affect the Rights of USPCAS-W / University or the Supplier / Contractor**

No certificate of the USPCAS-W / University on account nor any sum paid on account by the USPCAS-W / University nor any extension of time for the delivery of the Equipment pursuant to Clause 19 shall affect or **prejudice the rights of the USPCAS-W / University** against the Supplier / Contractor nor relieve the Supplier / Contractor of his obligation for due performance of the Contract or be interpreted as approval of the Equipment supplied, and no certificate shall create liability of the USPCAS-W / University to pay for the alterations, amendments, variations etc. not ordered in writing by the USPCAS-W / University or discharge the Supplier / Contractor for the payment of damages or of any sum against the payment of which he / she is bound to indemnify USPCAS-W / University nor shall such certificate nor the acceptance by him / her of any sum paid affect or **prejudice the rights of the Supplier / Contractor** against the University.

**27. Payments Due from the Supplier / Contractor**

**All costs**, ascertained damages or expenses for which under the Contract the Supplier / Contractor is liable to USPCAS-W / University may be deducted by USPCAS-W / University from any money due or may become due to the Supplier / Contractor under the Contract or may be recovered by action of law or otherwise from the Supplier / Contractor.

**28 Legal Proceedings**

The Contract and the Tender Documents are governed by the **Laws of** **Pakistan** and no proceedings to or arising out of any of them shall be instituted in any courts other than those situated at Hyderabad and Karachi, Sindh Pakistan.

**29. Dispute**

Should any question or dispute arise as to the material, design, construction or delay in the supply of the Equipment or the purpose or the performance for which they are required or are warranted, USPCAS-W / University shall nominate an independent **certifier / expert** having knowledge of network equipment etc., who will, after affording the parties to the dispute an opportunity to present their contention, and after having tests made as the certifier deems fit, certify whether there has been any breach of Contract or warranty and, if so, what sum shall be paid to USPCAS-W / University in diminution or extinction of price, and such certificates shall be final and binding and shall not be questioned and shall be acted upon in arbitral or other legal proceedings. The award of the costs of the certifier will be within his / her own discretion and shall be recoverable from the party against which the costs are awarded.

**30. Arbitration**

All disputes and matters of difference whatsoever (other than those relating to the certificate of expert certifier) between USPCAS-W / University and the Supplier / Contractor relating to and arising out of the Contract and Tender Documents shall be referred to arbitration under the arbitration act 1940 with amendments and re-amendments thereof, each party nominating its own arbitrator. The umpire will be nominated by the arbitrators within the first three arbitral hearings. The **award of the arbitrators or of the umpire shall be final and binding** upon the parties. The arbitral proceedings shall be held at Jamshoro, Sindh Pakistan.

**ANNEXURE “A”**

**FORM OF TENDER**

(LETTER OF OFFER)

Tender Reference No. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Dated \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Name of Contract: **Supply, Installation, and successful Commissioning / Operation and Demonstration Equipment at the premises of USPCAS-W, Mehran University of Engineering & Technology, Jamshoro, Sindh.**

The Project Director- USPCAS-W

Mehran University of Engineering & Technology

JAMSHORO, SINDH

Dear Sir,

1. Having examined the Tender Documents including Instructions to Tenderers, Conditions of Contract, Specifications, Drawings, Schedule of Prices and Addenda Nos. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ for the execution of the above-named Contract, we, the undersigned, being a company doing business under the name and address\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and being duly incorporated under the laws of Pakistan hereby offer to execute and complete such Contract and remedy any defects therein in conformity with the said Documents including Addenda thereto for the Total Tender Price of Rs.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (in figures and words) or such other sum as may be ascertained in accordance with the said Documents.
2. We understand that all the Schedules attached hereto form part of this Tender.
3. As security for due performance of the undertakings and obligations of this Tender, we submit herewith a Bid Security referred to in Clause 3 of the Instructions Tenderers and as per Annexure “D”, in the amount of Rs. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (in words and figures) drawn in favor of or made payable to Project Director, USPCAS-W, Mehran University of Engineering and Technology, Jamshoro, and valid for a period of 28 days beyond the period of validity of this Tender.
4. We undertake, if our Tender is accepted, to complete the whole of the work comprised in the above-named Contact within the time stated in Clause 12 of the Instructions to Tenderers.
5. We agree to abide by this Tender for the period of 90 days beyond the date of opening of the Tender, and it shall remain binding upon us and may be accepted at any time before the expiration of this period.
6. Unless and until a formal Contract Agreement is signed, this Tender, together with your acceptance thereof, shall constitute a binding contract between us.
7. We undertake, if our Tender is accepted, to execute the Contract Performance Bond referred to in Clause 3 of the Instructions to Tenderers and as per Annexure “E” for the due performance of the Contract.
8. We understand that you are not bound to accept the lowest or any Tender you may receive.
9. We do hereby declare that this Tender is made without any collusion, comparison of figures or arrangement with any other person or persons making a Tender for the above-named Contract.
10. We confirm, if our Tender is accepted, that all partners of the joint venture shall be liable jointly and severely for the execution of the Contract and the composition or the constitution of the joint venture shall not be altered without the prior consent of the Project Director, USPCAS-W Mehran University of Engineering and Technology, Jamshoro. (Please delete this clause in case of Tender from a single firm).

Dated this \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ day of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 2018

Signature \_\_\_\_\_\_\_\_\_\_\_ in the capacity of \_\_\_\_\_\_\_\_\_\_\_\_\_ duly authorized

to sign Tender for and on behalf of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(Name of Tenderer in Block Capitals)

Address: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Witness:**

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Address: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Occupation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**ANNEXURE-B**

**TENDER PARTICULARS**

**THE TENDERERS MUST SUPPLY THE FOLLOWING SPECIFIC INFORMATION FOR EACH ITEM OR GROUP OF ITEMS OF THE EQUIPMENT:**

1. **Conformation of Equipment:**

Whether the Equipment offered conform to the particulars specified in the Schedules; if not, details of deviations must be stated in Annexure “F”.

**2. Manufacturing Details:**

(i) Brand of Equipment.

(ii) Name and address of Manufacturer; and

1. Country of origin of Equipment.

**3. Delivery Schedule: `**

(i)Earliest date by which delivery can be effected;

(ii) Complete schedule of delivery; and

(iii) If the delivery period is different for different items, it must be indicated item

wise.

4. **Packing Specification:**

Whether the specifications for packing given in the Tender Documents will be adhered to.

**ANNEXURE “C1”**

**FORM OF SCHEDULE TO TENDER FOR EQUIPMENT MANUFACTURED/AVAILABLE IN PAKISTAN WITHOUT INVOLVING IMPORT**

Due by\_\_\_\_\_\_\_ hours on \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_

(time) (date) (month) (year)

SCHEDULE TO TENDER NO. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ DATED\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The Tender will be opened at \_\_\_\_\_\_\_\_ hours on \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_

(time) (date) (month) (year)

Delivery on or before \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_

(date) (month) (year)

**Rates and amount to be quoted in Pakistani Rupees**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **S. No.** | **Code/**  **Item No.** | **Description**  **Of Equipment** | **Detailed**  **Specifications**  **of Equipment with Model No.** | **Quantity**  **Of Equipment** | **Unit** | **Rate**  **Per Unit** | **Total**  **Price.** |
| **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** |
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**It is certifies that:**

* 1. The Equipment offered above conform in all respects with the particulars/specifications given in the Tender Documents’ and
  2. All the terms and conditions of the Tender Documents are acceptable to us.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(signature of the authorized person

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **SEAL**

(name of the authorized person)

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(name of the Tenderer)

**ANNEXURE “C2”**

**FORM OF SCHEDULE TO TENDER FOR EQUIPMENT IMPORTED FROM APPROVED COUNTRIES.**

Due by\_\_\_\_\_\_\_ hours on \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_

(time) (date) (month) (year)

SCHEDULE TO TENDER NO. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ DATED\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The Tender will be opened at \_\_\_\_\_\_\_\_ hours on \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_

(time) (date) (month) (year)

Delivery on or before \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_

(date) (month) (year)

PART 1. The rates quoted in the Table below must be on C&F basis.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **S.**  **No.** | **Code/**  **Item No.** | **Description**  **Of Equipment** | **Detailed**  **Specifications**  **Of Equipment with Model No.** | **Quantity**  **Of Equipment.** | **Unit** | **Rate**  **Per Unit** | **Currency** | **Total C&F Price** | **Country of Origin** |
| **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** |
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PART 2. **The rates quoted in the Table below must be in Pakistani Rupees**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **S.No.** | **Code/**  **Item No.** | **Description**  **of Equipment** | **Quantity**  **Of Equipment** | **Unit** | **Rate**  **Per Unit** | **Total**  **Price.** |
| **1** | **2** | **3** | **5** | **6** | **7** | **8** |
|  |  |  |  |  |  |  |
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(Continued on the next page)**ANNEXURE “C2”**

**NOTE:**

In the Table below, the columns 1 to 5 and 8 are to be filled in by the Tenderer before submitting the Tender, while the columns 6,7 and 9 are to be filled in jointly by the Project Director- USPCAS-W, Mehran University of Engineering and Technology, or his representative, and the Tenderer, or his representative, after opening of the Tender.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **S.**  **No.** | **Code/**  **Item No.** | **Description**  **of Equipment** | **Total C&F Price for Part 1** | **Currency** | **Exchange Rate** | **Total Price for Part 1 (Rs.)** | **Total Price for Part II (Rs.)** | **Total Cost**  **(Rs.)** |
| **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** |
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**It is certified that:**

i) The Equipment offered above conform in all respects with the particulars/specifications given in the Tender Documents; and

ii) All the terms and conditions of the Tender Documents are acceptable

to us.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(name of the Tenderer)

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **SEAL**

(signature of the authorized person)

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(name of the authorized person)

**ANNEXURE “D”**

**BID BOND**

(Bank Guarantee)

Guarantee No \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Executed on \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Expiry date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Letter by the Guarantor (Bank) to the Employer (USPCAS-W / University)**

Name of Guarantor (Bank) with address: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Name of Principal (Tenderer) with address: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Penal sum of Security (Bond),(in figures and words): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Tender Reference No. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date of Tender \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

KNOW ALL MEN BY THESE PRESENTS, that in pursuance of the terms of the Tender and at the request of the said Principal (Tenderer), we the Guarantor above-named are held and firmly bound unto the Project Director, USPCAS-W, Mehran University of Engineering and Technology, Jamshoro, acting through the Procurement Manager, USPCAS-W, Mehran University of Engineering and Technology, {hereinafter called The “Employer” (“University”)}in the sum stated above, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators and successors, jointly and severely, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the Principal (Tenderer) has submitted the accompanying Tender numbered and dated as above for supply, installation, putting into operation and demonstration of Equipment at USPCAS-W the premises Mehran University of Engineering & Technology, Jamshoro, to the said Employer (University); and

WHEREAS, the Employer (University) has required as a condition for considering the said Tender that the Principal (Tenderer) furnish a Bid Bond in the above said sum to the Employer (University), conditioned as under:

1. that the Bid Bond shall remain valid for a period of 28 days beyond the period of validity of the Tender;
2. that in the event of;
   * + 1. the Principal (Tenderer) withdraws his Tender during the period of validity of the Tender;
       2. the Principal (Tenderer) does not accept the correction of his Tender Price, pursuant to Clause 16 of “Instructions to Tenderers”; or
       3. failure of the successful Tenderer to:
3. furnish the required Contract Performance Bond, in accordance with Clause 3 of “Instructions to Tenderers”; or
4. sign the proposed Contract Agreement, in accordance with Clause 4 of the “Conditions of Contract”;

then the entire sum be paid immediately to the said Employer (University) as liquidated damages and not as penalty for the successful Tenderer’s failure to perform.

NOW THEREFORE, if the successful tenderer shall, within the period specified therefore, on the prescribed form presented to him for signature enter into a formal Contract with the said Employer (University) in accordance with his Tender as accepted and furnish within twenty eight (28) days of his being required to do so, a Contract Performance Bond with good and sufficient surety, as may be required, upon the form prescribed by the said Employer (University) for the faithful performance and proper fulfillment of the said Contract or in the event of rejection of the said Tender by the Employer (University) within the time specified then this obligation shall be void and of no effect, but otherwise to remain in full force and effect.

PROVIDED THAT, the Guarantor shall forthwith pay to the Employer (University) the said sum stated above upon first written demand of the Employer (University) without cavil or argument and without requiring the Employer (University) to prove or to show grounds or reasons for such demand notice of which shall be sent by the Employer (University) by registered post duly addressed to the Guarantor at its address given above.

PROVIDED ALSO THAT, the Employer (University) shall be the sole and final judge for deciding whether the Principal (Tenderer) has duly performed his / her obligations to sign the Contract Agreement and to furnish the required Contract Performance Bond within the time stated above, or has defaulted in fulfilling the said requirements and the Guarantor shall pay without objection the sum stated above upon first written demand from the Employer (University) forthwith and without reference to the Principal (Tenderer) or any other person.

IN WITNESS WHEREOF, the above bounden Guarantor has executed the instrument under its seal on the date indicated above, the name and seal of the Guarantor being hereto affixed and these presents duly signed by its undersigned representative pursuant to the authority of its governing body.

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

Guarantor (Bank)

**Witness:**

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(Signature) (Signature)

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(Name, Title, Address and Seal) (Name)

2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(Signature) (Title)

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(Name, Title, Address and Seal) (Corporate Guarantor Seal) ANNEXURE “E”

**CONTRACT PERFORMANCE BOND**

(Bank Guarantee)

Guarantee No. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Executed on \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Expiry Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Letter by the Guarantor (Bank) to the Employer (University)**

Name of Guarantor (Bank) with Address: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Name of Principal (Supplier / Contractor) with address: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Penal Sum of Security (Bond), (in words and figures) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Letter of Acceptance No. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Dated \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

KNOW ALL MEN BY THESE PRESENTS, that in pursuance of the Tender Documents and above said Letter of Acceptance (hereinafter called the Documents) and at the request of the said Principal (Supplier / Contractor) we, the Guarantor above named, are held and firmly bound unto the Project Director, USPCAS-W, Mehran University of Engineering and Technology, Jamshoro, Sindh, acting through the Procurement Manager, USPCAS-W, Mehran University of Engineering and Technology {hereinafter called the Employer (University)} in the penal sum of amount stated above for the payment of which sum well and truly to be made to the said Employer (University), we bind ourselves, our heirs, executors, administrators and successors, jointly and severely, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the Principal (Supplier / Contractor) has accepted the Employer’s (University’s) above said Letter of Acceptance for the supply, installation, putting into operation and demonstration of Active & Passive Network Equipment at the premises of Mehran University of Engineering and Technology, Jamshoro, Sindh.

NOW THEREFORE, if the Principal (Supplier / Contractor) shall well and truly perform and fulfill all the undertakings, covenants, terms and conditions of the said Documents during the original terms of the said Documents and any extensions thereof that may be granted by the Employer (University), with or without notice to the Guarantor, which notice is hereby waived and shall also well and truly perform and fulfill all the undertakings, covenants, terms and conditions of the Contract and of any and all modifications of the said Documents that may hereafter be made, notice of which modifications to the Guarantor being hereby waived, then, this obligation to be void; otherwise to remain in full force and virtue till the expiry of the guaranty period as per Clause 23 of the Conditions of Contract.

Our total liability under this Guarantee is limited to the sum stated above and it is a condition of any liability attaching to us under this Guarantee that the claim for payment in writing shall be received by us within the validity period of this Guarantee, failing which we shall be discharged of our liability, if any, under this Guarantee.

We, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (the Guarantor), waiving all objections and defenses under the Contract, do hereby irrevocably and independently guarantee to pay to the Employer (University) without delay upon the Employer’s (University’s) first written demand without cavil or arguments and without requiring the Employer (University) to prove or to show grounds or reasons for such demand any sum or sums up to the amount stated above, against the Employer’s (University’s) written declaration that the Principal (Supplier / Contractor) has refused or failed to perform the obligations under the Contract which payment will be effected by the Guarantor to the Employer’s (University’s) designated Bank and Account Number.

PROVIDED ALSO THAT the Employer (University) shall be the sole and final judge for deciding whether the Principal (Supplier / Contractor) has duly performed his obligations under the Contract or has defaulted in fulfilling the said obligations, and the Guarantor shall pay without objection any sum or sums up to the amount stated above upon first written demand from the Employer (University) forthwith and without any reference to the Principal (Supplier / Contractor) or any other person.

IN WITNESS WHEREOF, the above bounden Guarantor has executed this Instrument under its seal on the date indicated above, the name and corporate seal of the Guarantor being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Guarantor (Bank)

**Witness:**

1.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(Signature) (Signature)

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Name, Title and Address (Seal) (Name)

2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(Signature) (Title)

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Name, Title and Address (Seal) Corporate Guarantor (Seal)

**ANNEXURE “F”**

**Statement Describing Deviation from Specifications.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S.No.** | **Code No.** | **Description of Equipment** | **Statement of Variation from Specifications** | **Reasons for Variations.** |
| 1 | 2 | 3 | 4 | 5 |
|  |  |  |  |  |
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|  |  |  |  |  |

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(signature of the authorized person)

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **SEAL**

(name of the authorized person)

**On behalf of**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(name and address of the Tenderer)

**Procurement of Equipment and General Supplies for Advanced Water & Waste Water Quality Control Lab and Hydraulic Lab at USPCAS-W, MUET, Jamshoro**

**ITEM CODE**

**AW&WQCL/EQ**

**AW&WQCL/GS**

**Section IV. Schedule of Requirements**

**Mehran University of Engineering & Technology Jamshoro**

**BILL OF QUANTITIES (B.O.Q.)**

**List of Equipment:**

| **Item Code** | **Name of Item** | **Specification** | **Qty** | **Rate** | **Amount** |
| --- | --- | --- | --- | --- | --- |
| **AW&WQCL/EQ/01** | **FTIR** | - 0.4 cm-1 Standard Resolution (variable resolution from 64 to 0.4 cm-1)  - 1 minute signal to noise of better than 30,000:1  - Rapid Scan Capability  - Integrated Scan Buttons for easy operation at the spectrometer  - Sealed and Desiccated spectrometer with CaF2 coated, KBr windows  - Metal case desiccant canister (regenerable), and humidity indicator  - Autoalign energy optimization  - Dynamically aligned interferometer  - XT-KBr / Ge coated beam splitter (11,800-375 cm-1)  - High-Performance -Sulfate detector  -mid IR source, externally mounted and user- replaceable .  - Tungsten-halogen Source  - Performance Verification kit  - Serialized, traceable standards wheel including: ~ 1.5 MIL (38 micron) NIST traceable polystyrene (supplied with certificate)  - traceable Schott glass (supplied with certificate)  - Beam attenuation filters  - Motorized wheel mount  - System electronics board with USB2 personal computer communication port  - Multi-zone purge system  - Smart Transmission accessory  - Allows transmission analysis polymer films, liquid cells, emulsion cells, KBr pellets.  Advanced Transmission Starter Kit  - 4 KBr Windows, 25mm x 4 mm (7000-317)  - 2 BaF2 Windows, 25 mm x 4 mm  - PressLok Demountable Holder for 25 mm windows  - 2 KBr Drilled Windows, 32 mm x 3 mm  - 2 KBr Undrilled Windows, 32 mm x 3 mm  - Demountable Pathlength Cell Kit  - Handi-Press  - 1 mm, 3 mm, 7 mm Die Set for Handi-Press ~ KBr Pellet Holder for Handi-Press  - Nujol, 4 oz.  - Fluorolube, 1 oz.  - Agate Mortar and Pestle, 35 mm  - Magnetic Film Holder  Standard Software  - Group and Ungroup file capability for easy management of related sample data in a single file without loss of information  - Auto Analyze feature to perform and report prediction, searching, or Peak Labelling immediately after collection without any need for intervention.  - Auto Report feature to view results, print or add to current notebook.  - Automatic atmospheric suppression to remove H2O and CO2 interferences (no standards needed)  - System Performance verification (SPV) monitors system status  - Also adds quantitative and qualitative method development and prediction including:  - Beer-Lambert calibration and prediction (peak height or area integration)  - Classical Least Squares calibration and prediction  - Discriminant analysis prediction  - Partial Least Squares (PLS) prediction  - Principal Component Analysis (PCR) prediction  - Full-featured report generator and electronic laboratory notebook  - Macros\Basic to compile routine tasks into simple push button operations with access via customizable toolbar  - Password protection and user login support ~ Full array of data conversion and correction tools  - Complete set of spectral data processing tools  - Spectral Search: high-resolution library generation, customizable information fields, single or multi-region search, library management, with over 1400 spectra in included libraries  - Easy to set-up parameters, live display of data collection and live spectral preview  - Extensive on-line help and video tutorials.  Library Combination Pack  Polymer, Polymer Chemicals, Art Media, Fiber, Organic Reagents, Organic reagents Solid, Inorganic Reagents, Surfactant, Minerals, Georgia State Crime Laboratory & Vapour Phase. | **1** |  |  |
| **AW&WQCL/EQ/02** | **BET analyzer** | Imported silicon thin film capacitive pressure transducer, accuracy can reach 0.1% of real reading better than 0.1% of F.S. (full-scale). 0-10Torr and 0-1000Torr dual transducers, 0-10Torr silicon thin film transducer · Unique monolithic manifolds system. Pioneered gas outlet and inlet control system, Vacuum System. Unique integral manifolds system. Bipolar vacuum pump 4x10-2Pa (3x10-4Torr) with low noise, stable working and oil-return prevention. High precision and integration data acquisition module.  Control System with programmable pneumatic valve system · Two-stage regulators with dual gauges, cylinder connector, isolation valve and 1/8" gas line connector· stainless steel regulator, non-venting diaphragms · Different assemblies for nitrogen, hydrogen, carbon monoxide, oxidizing gases etc. | **1** |  |  |
| **AW&WQCL/EQ/03** | **DSC** | scale: ± 10, ± 20, ± 40, ± 100, ± 160, ± 200 mW, and can automatically change ·  Temperature range: RT～500℃;  Heating rate: 1～30℃∕ min;  Crucible material and size: Aluminum Φ 6.7 mm × 2.5 mm;  Gas flow ≤ 200 ml ∕ min (nitrogen or oxygen gas channel can change each other);  Gas pressure: 0.2MPa.  Power Source: 220 V 50 Hz, 200W ·  Data processing system Data sampling, saving, the screen showing, temperature Calibration and the processing of oxidation induction time.  Power Source: 220 V 50 Hz, 200W  Desktop computer. | **1** |  |  |
| **AW&WQCL/EQ/04** | **High pressure stirred autoclave for hydrothermal carbonization (HTC)** | Working Volume Range: 250 ml-2000 ml with adjustable reactor vessels·  Working Temperature Range: 25 C-500 C·  Suitable for vacuum operation· Multiple and standard vessel opening·  Speed range (RPM): 10-300·  Viscosity (mPa): up to 15000 or above·  Workable at ambient to varying temperature range Workable under varying humidity level·  Analog and interface output/control/display/sensors·  Software. | **1** |  |  |
| **AW&WQCL/EQ/05** | **CHNO Analyzer** | Method: Carbon & Hydrogen, Infrared absorption Measuring range: Carbon（0.02%~100%）, Hydrogen（0.02%~50%） Autoloader：34 Samples Analysis time：≤5min/per sample Sample weight: 75~105mg（90mg recommended） Repeatability：Cad≤0.5% Had≤0.15% Gas requirement: Combustion-supporting gas  Oxygen Purity: ≥99.5% Driving gas: Nitrogen Purity: ≥99.5% Carrier gas： Helium Purity：≥99.99% Power requirement：220 V（-15%-10%），50Hz Max. Power: 3.5Kw. | **1** |  |  |
| **AW&WQCL/EQ/06** | **Digital Burette** | 30ml Digital Burette with 33, 38 and 45mm adapters. | **5** |  |  |
| **AW&WQCL/EQ/07** | **Micropipette (500-5000 micro liter)** | Control button and Ejector: Very low operating force, color indicates pipette volume; Volume displays 4 digits, magnifying shape, Calibration for pipette to a specific liquid and volume. Ultra-light piston (not in the 10 μL pipettes), Quick connection clip: Remove lower part easily, Spring loaded tip cone. | **10** |  |  |
| **AW&WQCL/EQ/08** | **Ice Flake Making Machine** | Automatic ice flake making, Bin capacity 10-20 kg. | **1** |  |  |
| **AW&WQCL/EQ/09** | **Liquid Nitrogen Facility and Flasks** | Dewar Containers for liquid nitrogen 2L and 1L capacity, quality insulation and equipped with all safety measures. | **5** |  |  |
| **AW&WQCL/EQ/10** | **Liquid Nitrogen Refrigerators** | Volume: 5L & 10 L  Cryogenic container for storing and dispensing small amount of liquid nitrogen.  With hinged, lockable, transparent top for viewing and protecting container contents. Efficient neck tube insert maintains thermal performance. A large neck tube opening allows the use of canisters that hold 30-40% more material. A high strength aluminum shell provides durability. Thermal barrier, advanced insulation and vacuum provide optimum thermal efficiency. There is also a slotted, numbered indexing handle assembly. Specimen storage canisters with refrigerator. An optional universal roller base. | **2 of each** |  |  |
| **AW&WQCL/EQ/11** | **Freezing Container** | -80°C freezer air through a bottom base vent. The inner vial module holds 30 cryogenic vials. Each vial achieves a uniform and reproducible -1°C/minute freezing profile and thermal profiles are highly reproducible.  Holder for 30 1.0 mL or 2.0 mL cryogenic vials with one-step insertion and removal of all 30 vials at once. fitable into standard 5.0 x 5.0 x 2.0 inch cryo-storage box and is compatible with dry ice and liquid nitrogen. | **5** |  |  |
| **AW&WQCL/EQ/12** | **Tissue Homogenization Machine** | High-speed benchtop homogenizer offering the ultimate speed and performance for the lysis of biological samples.  Indeed, simultaneous homogenization of up to 24 samples takes place within 40 seconds.  Optimized motion to disrupt cells through the multidirectional, simultaneous beating of specialized Lysing Matrix beads on the sample material. Accessories like beads etc. | **1** |  |  |
| **AW&WQCL/EQ/13** | **Automatic Colony Counter** | Automated Cell Counter, Counting time, 30 sec,  Cell concentration range, 5 x 104–1 x 107 cells/ml.  Optimal cell concentration range 1 x 105–5 x 106 cells/ml.  Cell diameter range 6–50 µm.  Sample volume10 µl,  Data storage 100 counts,  Data export Via USB flash drive,  Printer connectivity, Dilution calculator.  Image of cells available,  Dimensions (W x D x H), 19 x 15 x 25.4 (7.5 x 6 x 10) cm (in).  Weight without the external power supply, kg (lb) 2.2 (4.8). | **2** |  |  |
| **AW&WQCL/EQ/14** | **Vortex Machine** | Current consumption:800mA  Shaker diameter:4.5mm  Motor rating input:10W  DC Voltage: 24V=  Power input: 20W  Depth: 205mm  Permissible ON time:100%  Motor rating output:8W  Speed max.:3000rpm  Weight:2.9kg  Time setting min.:1/60min  Time setting max.:999min  Height:63mm  Width:148mm  Permissible shaking weight (incl. attachment):0.5kg  Speed min (adjustable): 200rpm  Frequency:50/60Hz  Voltage:100 - 240V  Operating mode: timer and continuous operation  with Touch function,  Type of movement: orbital  Analog output: no  Timer: yes  One microtiter plate, Permissible ambient temperature max.: 40°C  Permissible relative humidity: 80%  Permissible ambient temperature min.: 5°C  Speed and Timer display: LED display. | **10** |  |  |
| **AW&WQCL/EQ/15** | **Magnetic Stirrer** | Stirring Volume:0~2000mL  Stirring Speed:0~1250rpm  Temperature Range:0~300°C  Top Plate Size:135(L)×135(W)mm, Stainless Steel  Timer Range:0 to 999 minutes  Power Requirements: AC 220V/50Hz  Dimensions: 230(L)×180(W)×120(H)mm  Weight: 2.2kg. | **10** |  |  |
| **AW&WQCL/EQ/16** | **Water Bath with Shaker** | Temperature Range (Metric) Amb. +5°C to 100°C. Heating Capacity 1200W.  Bath Volume 15L (4.0 GAL).  Model Precision.  Temperature Uniformity ±0.05 °C ,  Amperage 9.0-10.5 / 4.3-5.0 (120V/230V) ,  Cabinet Material Epoxy Powder Coated Cold Rolled Steel ,Chamber Material Stainless Steel ,  Display Monochrome LCD , 15L Shaking Water Bath ,Certifications/Compliance UL, CE ,Dimensions (L x W x H) Exterior 15.5 x 24.9 x 9.8 in. (394 x 632 x 249mm) ,Electrical Requirements Global Voltage 100-115V/200-230V, 50/60Hz ,Controller Type Digital ,Temperature Stability ±0.1 °C ,Temperature Presets 4,Includes Stainless Steel Gable Cover, Shaking Tray, and Rubber Duck. | **3** |  |  |
| **AW&WQCL/EQ/17** | **Photon Meter** | portable handheld multifunctional digital device used to measure sound, light, humidity, temperature, AC / DC current, electrical resistance, capacitance and frequency.- Light: 4,000 ..40,000 lux,Humidity: 33 ... 99% RH,Temperature: 0 ... 50°C / 32 ... 122ºF Indoor, -20 ... 1300ºC / -4 .2372ºF Type K.- Auto-ranging electrical multimeter. | **1** |  |  |
| **AW&WQCL/EQ/18** | **Thermo-Mixer** | Adjustable mixing speed from 300 to 1,400 rpm,Digital display of all parameters, Autoclavable and freezer-safe numbered racks, Racks with 24 numbered positions make processing and transporting samples quick and easy. | **2** |  |  |
| **AW&WQCL/EQ/19** | **Dry Heat Block** | Digital dry baths, interchangeable modular blocks. max temperature 130°C, a timer in 1, 2 and 4 block sizes, Temperature Range Ambient +5° to 130°C (Ambient at 25°C),  Temperature Uniformity < ± 1°C,  Temperature Accuracy < ± 0.5°C,  Heating Rate < 20 min.  30° to 130°C, Controller Type PID digital, Max. Relative Humidity < 80%, Timer Range 0 to 99:59 min or continuous, Fuse 250V 2.5A. | **2** |  |  |
| **AW&WQCL/EQ/20** | **LCD Digital See-Saw Rocker** | See-saw rocking Speed range: 10-70 RPM  Timer:1 to 1199 minutes,  Maximum rocking angle:9°  Maximum load: 7.5/Kg/16.5Lbs  Operating temperature range: +4 - 40°C  Maximum humidity: 80% Plate  dimensions: 12 x 12 inches ,Overall dimensions: 17W x 15D x 12H inches Weight: 30Lbs  Voltage: 100-220V, 50/60Hz, 30W. | **2** |  |  |
| **AW&WQCL/EQ/21** | **Centrifuge with Temperature Control below 00C** | Centrifuges spin rotors for tubes and PCR strips. 15 ml and 50 ml conical tubes. compressor at the back of the centrifuge,  8 different rotors for tubes from 0.2 ml to 50 ml and micro plates allow centrifugation of all common vessel formats High centrifugation speed of up to 30,130 x g (17,500 rpm), Menu-driven operation with large backlit LCD display for ultra-easy operation, Saves up to 50 programs with program names, Automatic rotor recognition with speed limitation, Automatic rotor imbalance detection ,  a rotary knob version that provides quick parameter changes, or a keypad version for easy cleaning. | **2** |  |  |
| **AW&WQCL/EQ/22** | **Table Centrifuges** | Temperature range is –10°C to +40°C, with a guaranteed +4°C at the maximum speed o 21,130 x g (15,000 rpm) , Additional rotor options include a special Kit rotor or 18 x spin columns, designed with an extra high rim to support open tube lids during centrifugation, as well as a special PTFE-coated rotor for increased chemical resistance and easy cleaning. approximately 21°C to 4°C in only 8 minutes. | **5** |  |  |
| **AW&WQCL/EQ/23** | **Sets of pipettes** | (10µl), white, can be used in autoclave ,(100 µl)-yellow, can be used in autoclave ,(1000 µl)-blue, can be used in autoclave  Range: 1-10 µl, 20-200 µl, 100-1000 µl. | **10 pack of each** |  |  |
| **AW&WQCL/EQ/24** | **Portable Fluorometer Kit** | Size 26.5mm dia x 105mm (140mm including connector), Weight in air 100g, Pressure housing Acetal C, Depth rating 600 meters, Connector , Input Voltage 11 to 25V ,Data Output Digital and analogue 0 to 5Vdc, Power Requirements <1Watt @ 12 volt. | **1** |  |  |
| **AW&WQCL/EQ/25** | **Advance Microscope** | Head Standard monocular head, Bearing mounted, rotates 360°,10X/18 wide field eyepiece, Locked-in eyepiece with pointer installed, Four position nosepiece, DIN Achromatic 4X, 10X, 40XR (retractable) Optional 100x oil objective, Par focal and par centric Color coded Stage, Pre-drilled and tapped for optional mechanical stage, Spring-loaded slide clips included, Stage size: 110mm x 110mm, Illumination, condenser, Iris Diaphragm 5w fluorescent, Input 110V (220V optional), Rechargeable LED base available Adjustment Controls, Coaxial coarse and fine focus, Adjustable stage stop Includes Blue and green filters , Filter holders, Dust cover, Spare bulb and fuse, Dimensions & Weight Height: 14” (356mm), Length: 7.0” (178mm), Width: 5.25” (134mm), Weight: 6.1 lbs. (2.8kg). | **1** |  |  |
| **AW&WQCL/EQ/26** | **Compound Microscope with Camera** | Viewing Head, Sliding Binocular Head, Inclined at 45°, 360° Rotatable Eyepiece, Wide Field Eyepiece WF10x/18 with diopter adjustment, Quadruple Nosepiece, Achromatic 4x, 10x, 40x(S), Objective 100x, Double Layers Mechanical Stage 110x120mm/ 70x20mm, Focusing Coaxial Coarse and Fine Adjustment, condenser, Iris Diaphragm & Blue Filter, Rack and Pinion Adjustment for Condenser, Spare Parts, Dust cover, Illumination, LED Illumination, Brightness Adjustable Package. | **3** |  |  |
| **AW&WQCL/EQ/27** | **Simple Compound Microscope** | High image quality, LED illumination, 4.4:1 zoom ratio, Eyepiece angle of 60° for comfort, 100 mm working distance, Integrated universal power supply from 100 to 240V. | **10** |  |  |
| **AW&WQCL/EQ/28** | **Mini Centrifuge** | Small centrifuges fo 1.5 & 2 ml tubes made with variable time and speed control. | **3** |  |  |
| **AW&WQCL/EQ/29** | **Autoclave** | Capacity: 60 L, Electric heating with pressure meter, Stainless steel body, Safety valve. | **2** |  |  |
| **AW&WQCL/EQ/30** | **Vertical laminar Flow Hoods** | Airflow pattern: vertical down flow  Airflow : 0.45 m/s (90 fpm)  Lighting: compact fluorescence bulb, removed from air stream. | **3** |  |  |
| **AW&WQCL/EQ/31** | **Incubators** | Ambient temperature +5 °C to 75 °C,  Spatial temperature deviation at 37 °C ± 0.6 °C, Temperature deviation over time at 37 °C ± 0.2 °C, Footprint m2 / sqft 0.3 / 3.,  2 Chamber volume L / cuft 75 / 2.6,  Dimensions chamber mm / in (W x H x D) exterior1, mm / in (W x H x D) ,354 x 508 x 414 / 13.9 x 20.0 x 16.3 ,530 x 720 x 565 / 20.9 x 28.3 x 22.2,  Number of shelves supplied / max  2 / 13, Max.  Shelf load kg / lb, 25 / 55, Rated voltage / frequency V / Hz 120 / 60 Rated power / max. Current W / A 300 / 2.5, Weight kg / lb 40 / 88, Energy consumption at 37 °C W 21. | **4** |  |  |
| **AW&WQCL/EQ/32** | **Incubator with Shaker Bench Top** | Temperature Range (°C / °F) Amb. +5 to 80 /Amb. +9 to 176, Amb. -15 (Min. +15) to 80 / Amb. -27 (Min. +27) to 176, Amb. +5 to 80 /Amb.+9 to 176,Fluctuation at 37°C in flask (±°C / °F) 0.1 / 0.18,Variation at 37°C in flask (±°C / °F) 0.5 / 0.90,Refrigerator, Motion Type Orbital ,  Amplitude Size (mm / inch, dia.)19.1 / 0.75,  Speed Range (RPM) 10 to 500,  Accuracy ±1% of set speed (>100rpm) / ±1 (<100rpm), Timer min. to 999 hr 59 min, Max. Load (kg / lbs) 10 / 22.0 at 500 rpm 18 / 39.7 at 400 rpm ,10 / 22.0 at 500 rpm 18 / 39.7 at 400 rpm. Volume (L / cu ft) 53 / 1.9, 83 / 2.9,Platform (WxD) (inch)13.8x13.8,17.7x17.7,Internal (WxDxH) (inch) 16.1x16.1x12.6,20.1x20.1x12.6,Overall (WxDxH) (inch) 17.3x30.9x20.1,21.3x35x20.1,Net Weight (Kg / lbs)65 / 143.3,73 / 160.9,81 / 178.6. | **4** |  |  |
| **AW&WQCL/EQ/33** | **Climate Chamber** | Temperature range: 0°C to 70°C,  Temperature range with light: 10°C to 60°C,  Humidity range: 10 % to 80 % RH,  Positionable illumination cassettes( each with 5 fluorescent tubes),  preheating chamber,  Adjustable fan speed,  Humidity regulation with capacitative humidity sensor and vapor,  Intuitive touch screen controller with time-segment and real-time programming with internal data recording,  Display via color LCD monitor,  Stainless steel racks,  Access port with silicone plug ( 30 mm left) independent temperature safety device with visual and audible temperature alarm,  Computer interface: Ethernet, Door heating. | **3** |  |  |
| **AW&WQCL/EQ/34** | **Electrophoresis Assembly with Power Pack (Horizontal)** | Small, medium, and large  Gel sizes: 20x20 cm or more,  Maximum sample loading,  lowest buffer use,  Combs of different thicknesses,  Output range: 10-300 V,  fully adjustable in 1V steps, 4-400 mA, fully adjustable in 1 mA steps 75W (max.)  Type of output: Constant voltage or constant current with automatic crossover,  Output terminals: 4 pair recessed banana jacks in parallel, Timer: 1-999 min,  Display: 3-digit LED;  operating conditions:  temperature 0-40 C;  0-95% humidity with safety features and input protection.  Dimensions: 21x24.5x6.5 cm.  With all accessories. | **2 of each** |  |  |
| **AW&WQCL/EQ/35** | **Electrophoresis Assembly with Power Pack (Vertical)** | borosilicate Glass plates and spacers height 22cm, 32cm and 42cm,  precision-machined combs,  Compressible, long-lasting silicone gasket on face of unit,  easy gel thicknesses of 0.75mm, 1.0mm, 1.5mm, 2.0mm and 3.0mm,  removable upper and lower reservoirs,  safety covers with power leads,  Leak proof silicone gasket on upper, Platinum electrodes, Leveling base with bubble level.  Small, medium and large. | **1 of each** |  |  |
| **AW&WQCL/EQ/36** | **Fine Test Sieves** | Sizes: 2 mm, 1 mm, 500µm, 250µm, 100µm, 63 µm and 38µm,  2 in height and 8 in diameter. | **2 of each** |  |  |
| **AW&WQCL/EQ/37** | **Genetic Analyzers** | single-line 505 nm,  solid-state laser excitation source,  Electrophoresis Voltage: Up to 20 kV,  Oven Temperature from 18°C to 70°C,  Operating Temperature: 15°C–30°C,  Humidity: 20–80% (non-condensing) Dimensions: Width (closed-door): 61 cm,  Width (open-door): 122 cm,  Depth: 61 cm, Height: 72 cm, Weight: 82 kg (approximately). | **1** |  |  |
| **AW&WQCL/EQ/38** | **Glass House** | Type: Aluminum glass House, single walled.  Chamber Size: (20 x 30 ft. internal),  Doors: 02 Nos. wooden flush water proof with M.S. sheet frame for nine inch wall (3,5 x 7.0ft),  Glass sheet (imported):4.75 mm thick (min) for front and sides 7.50 mm thick (min.) for top.  Frame structure: M.S. channel 100 x 48 x 6 mm, bolted with reinforcement corners, 10 Nos. vertical pillars grouted in walls to foundation, 04 Nos. sloping beams 22.5 ft each,03 Nos. top beams 63ft each (One in center and two in sides).  Glass structure: 75 x 30 x2mm aluminum curtain wall and 2mm wall thickness square, rectangular section for support of top glass.  Glass panel size: Front 3.25 x 4.5ft (max), Sides 3.50 x 4.5ft (max), Top 3.25 x 12ft (max).  Exhaust Fans: 04 No., double action, minimum dia. 15 inches, heavy duty industrial fans with shutter.  Ventilators: Minimum 07 Nos. manually operated, with glass panels and wire gauze screen, air tight, aluminum.  Humidifier: 02 Nos. (Output 2.3 liter/hr, complete with 02 No. humidistat and control switch.  Electric Heater: 07 No. Portable oil bath radiant with caster wheels, 2000 W capacity, temperature control (with analog/digital display), timer 24 h, with fan/blower.  Electrical: 80 Nos. Tube lights with fitting , with 4 tubes of 40W each per panel complete with choke ,06 Nos. distribution board, 03 Nos. power plug 15 Amp with switches, 02 Nos. two pin plug at each board.  Main panel board power: 440 VAC 50/60 Hz with earth fitting.  Main circuit breaker: 01 No. 60-65 Amp.  Circuit Breakers: 12 Nos. for power plugs and lights.  Volt Meter: 01 No. 500 V.  Ampere Meter: 01 No 50 Amp.  Light Indicator: 03 No.,  Distribution Board: Bacolyte Sheet.  Wiring Media: PVC Pipe.  Wiring Electric Cable: 7/44, 7/29, 3/29 carrying PSI Certificate Mark.  Electric Switches etc: 5 Amp,  Electric Supply: 03 Distribution Boards (02 Nos. in chambers and 01 No. in corridor),  Power Plugs with boards: 04 Power plugs in chamber each 10 Amp.  Water Supply: Water supply pipe 25mm dia.  G.I.Water supply points: 02 No. in chamber, with medium size bib cock and same Nos. lab. Type sink with drain pipe and fitting coupling.  Drain: 03 No. in chamber.  Gas: Gas connection in the chamber with valves and complete fitting.  Miscellaneous: Water Tank 01 No. synthetic, 1000 lit. capacity,  Connections: Gas (pipe), Water (pipe) and Electrical connection (Cable) from nearest source to greenhouse connections. | **1** |  |  |
| **AW&WQCL/EQ/39** | **Growth Chamber Room** | Size :12’(Length) x 8’(Width) x 8’ (Height),  Wall Paneling and Partitioning : All the four sides with laminated chipboard minimum width 18mm,  Ceiling: False ceiling made of aluminum structure and coated plaster of Paris sheets, maximum panel size 5.0 sq.ft.  Temperature control system: Automatic thermostat temperature control system with range of 10-40°C (with digital display of temperature) connected to AC’s to maintain required temperature, with probe. AC: 02 No. each 1.5 ton split AC,  Door: 01 No. door made of aluminum structure and glass with locks etc complete.  Racks: 08 No. racks made of squares pipe structure (50mm x 50mm) and glass panel (minimum thickness 5mm). Each rack size 12ft x 2ft.,  Lights: On each rack 6 energy savers (minimum 40watt each), Total 50 energy savers (48 on the racks and 2 on ceiling), complete with switches and wiring. Floor : Venial sheet on all the floor inside the growth  Chamber.  Electric board: Steel sheet electric board with breakers, 03 two pin sockets, 01 main switch/breaker. | **1** |  |  |
| **AW&WQCL/EQ/40** | **Algae**  **Photo-Reactor** | 0.5-m2 cultivation area per pond,  100-liter volume Per Pond,  0.2-m max operating depth,  0.6-m elevation from pond bottom,  Automatic Paired raceways with single paddle wheel motor,  Plastic raceway tanks: constructed of rotational-molded food-grade HDPE with UV stabilizer which creates a seamless tank that is extremely durable and light weight.  Transparent Paddle Wheels: shading from opaque paddle wheels, center dividers, turning vanes. Shading from opaque paddle wheels, center dividers, turning vanes.  Durable plastics: Pillow blocks are made of Ultra High Molecular Weight Polyethylene and never require any grease or maintenance.  Floor drains: Two 2-inch (5-cm) diameter NPT threaded bulkhead fittings per raceway; metric adapter bushings, One drain for flush with the pond floor for complete draining, and the second slightly elevated to allow for stand pipe attachment.  Wash down Gear Motor: 3-phase inverter-duty gear motor, IP-65 rating with all gearing enclosed for complete wash down.  Plastic Rack: Recycled UV-resistant HDPE rack.  CO2 Distribution: centralized CO2 manifold with solenoid valves automatically doses CO2 into algae raceways to control pH.  Magnetic Probe Rack: magnetic probe rack allows for easy installation and level adjustment. | **1** |  |  |
| **AW&WQCL/EQ/41** | **Pulsed-Field Gel Electrophoresis** | Power Module: Dimensions : (W x D x H), 55.9 x 34.5 x 30 cm.,  Weight: 16 kg (35.3 lb).  Power supply: 350 V maximum, to allow maximum gradient of 9 V/cm, continuously adjustable; built in Maximum current 0.5 A.,  Allowable voltage gradients: 0.6–9 V/cm, in 0.1 V/cm increments Battery back-up., parameters in memory up to 3 hr of interruption Delayed start Up to 72 hr., Electrode potentials: Dynamically regulated (feedback adjustment) +/- 0.5% F.S.,  Program storage: 20 average size protocols Display Fluorescent.  Operating temperature: 50°F (10°C) to 90°F (32°C); humidity :30–80%  Storage temperature : 32°F (0°C) to 140°F (60°C);  Humidity: 10–90%  Switching Functions: Switching range 50 ms to 18 hr , Switch angle variable 0–360° (all electronic switching).  Electrophoresis Cell: Dimensions (W x D x H) 44.2 x 50.3 x 11.4 cm, horizontal format  Construction Cover: vacuum-formed polycarbonate, injection-molded polycarbonate Lid Safety interlocked, Weight 10.2 kg (22.5 lb) , Electrodes 24, platinum (0.02" diameter), with all Accessories.  Cooling Module (optional) : Weight 14 kg (30.9 lb). Construction: Aluminum Dimensions (W x L x H) 23 x 42 x 24 cm , Cooling capacity 75 W of input power at 14°C Operating range 5–25°C Total system weight 41.7 kg (91.9 lb). | **1** |  |  |
| **AW&WQCL/EQ/42** | **Electrophoresis Chamber/ Assembly (Horizontal)** | Compact S: 8.2 cm × 10.5 cm, Max. Sample number: 48 with 3 combs.  Compact M: 12.4 cm × 14.5 cm, Max. Sample number: 100 with 4 combs.  Compact L: 23.9 cm × 20.0 cm, Max. Sample number: 312 with 6 combs.  Compact XL: 23.9 cm × 25.0 cm,  Max. Sample number: 416 with 8 combs. | **1 of each** |  |  |
| **AW&WQCL/EQ/43** | **SDS-PAGE Assembly (Vertical)** | Gel Size: 8x7cm Spacers of 0.75 & 1.0mm thickness fused with glass plates, sample loading guides. Two gel running capacity Ridged combs 10&15 well Optional preparative combs Gel casting stand, no tapes or grease. | **1** |  |  |
| **AW&WQCL/EQ/44** | **Gravity-Glass Chromatography Columns** | Volume: 1-22 ml,(high performance system)  Volume: 1-1374 ml (low pressure and gravity) | **2** |  |  |
| **AW&WQCL/EQ/45** | **Western Blotting Transfer Blotting System** | Blotting instrument, includes base, 2 cassettes to hold 1–2 midi or up to 4 mini blotting sandwiches, blot roller | **1** |  |  |
| **AW&WQCL/EQ/46** | **Digital Rocking Bench Top Shaker for Western Blotting** | Programmable mixing modes Up to 4 different mixing behaviors combined in one program. Soft run stepper motor for top performance Digital timer High-precision, operational controls Sound notification when operation complete Onboard memory for storing settings Technical Data  Size of platform 257 x 307in Rocking angle 1-12 degrees Time controller 1-999 min Type of rotation Rocking Speed of rotation 1-50 RPM Environmental temperature +4°C to +45°C Relative moisture of atmosphere 80% Power supply adapter DC 12V; 1.5V Device size (L x W x H) 275 x 310 x 115 Weight 7.7lbs. | **2** |  |  |
| **AW&WQCL/EQ/47** | **Micro Plate Washer** | Micro plate types 96- and 384-well Low profile and standard height  Solid and filter bottom (option) Onboard software Create, edit or run multiple protocols Software (computer control),  Separation Biomagnetic separation, vacuum filtration (optional) Shaking Programmable up to 60 minutes Slow, medium, fast or variable Soaking Programmable up to 60 minutes  WASHING: Manifold types 96-well washing: 96-tube manifold - straight dispense tubes 96- and 384-well washing: 96-tube Dual-Action manifold - 20° angled dispense tubes 384-well washing (fast): 192-tube Dual-Action manifold - 7° angled dispense tubes Volume range 25 - 3,000 µL/well, in 1 µL increments Wash cycles 1 - 250 Buffer/reagent selection Auto switching (internal) for up to 4 buffers (option) Supply bottle 4 L or 10 L (optional) Dispense precision <3% CV: 300 µL/well (96-well washing) <4% CV: 80 µL/well (384-well washing) Residual volume < 2 µL/well (96- & 384-well plates) 96-tube manifold for 96 wells; 192-tube for 384 wells Wash speed 96-wells, 300 µL/well, 3 cycles; <30 seconds 384-wells,100 µL/well, 3 cycles: <80 seconds  384-wells, 400 µL/well, 1 cycle: <20 seconds Flow rates High flow to low flow  Optimized rates for cell assays Sterilization Chemical  Vacuum filtration Selectable: Approximate final at 30 seconds: Lowest: -38 mmHg Low: -113 mmHg Medium: -200 mmHg High: -390 mmHg Highest: -506 mmHg  Vacuum filtration time range: 5 to 999 seconds  PHYSICAL CHARACTERISTICS: Power 100 - 240 Volts AC. 50/60 Hz Dimensions 14" W x 17" D x 10" H (35.6 x 43.2 x 25.4 cm) Weight With internal buffer switching - 36 lbs (16.5 kg) Without - 30 lbs (13.5 kg). | **1** |  |  |
| **AW&WQCL/EQ/48** | **Micro Plate Absorbance Reader** | Wavelength range 400–750 nm Photometric range 0.0–3.5 OD Linearity ≤1.0% from 0.0–2.0 OD; ≤2.0% from 0.0–3.0 OD Accuracy ≤1.0% or 0.010 from 0.000–3.000 OD at 490 nm Precision 1.0% or 0.005 OD from 0.0–2.0 OD; 1.5% from 2.0–3.0 OD Resolution 0.001 OD Filter wheel capacity 8 Plate shaking (3 speeds) Low, mid, high Duration, sec 0–999 Read time 6 sec at single wavelength, 10 sec at dual wavelengths Data output Onboard graphical thermal printer and USB2 interface with PC or Mac data stations Data storage Calendar /clock functions; 64 assay protocols Multilanguage support 4 languages, LCD indication supported; printout report supported Dimensions (W x D x H), cm (in) 34.6 x 37.7 x 16.4 (13.6 x 14.8 x 6.5) Weight, kg (lb) 5.5 (12). | **1** |  |  |
| **AW&WQCL/EQ/49** | **Hybrid Multi-Mode Reader** | Detection modes UV-Vis absorbance  Fluorescence intensity Luminescence Fluorescence polarization Time-resolved fluorescence Read methods Endpoint, kinetic, spectral scanning, well area scanning Micro plate types 6- to 384-well plates Other lab ware supported Petri and cell culture dishes Take3 Micro-Volume Plates Temperature control : incubation to 45 °C with Condensation Control:+0.2 °C at 37 °C Shaking Linear, orbital, double orbital Data Analysis Software  Automated Incubator compatible CO2 and O2 control (option) Range: 0 - 20% (CO2); 1 - 19% (O2) Control Resolution: +0.1% (CO2 and O2) Stability: +0.2% at 5% CO2; +0.2% at 1% O2  ABSORBANCE: Light source Xenon flash Detector photodiode Wavelength selection monochromatic Wavelength range 230 - 999 nm, 1 nm increments Monochromatic bandwidth 4 nm (230-285 nm), 8 nm (>285 nm) Dynamic range 0 - 4.0 OD Resolution 0.0001 OD Path length correction yes Monochromatic wavelength accuracy ±2 nm Monochromatic wavelength repeatability ±0.2 nm OD accuracy <1% at 2.0 OD <3% at 3.0 OD OD linearity <1% from 0 to 3.0 OD OD repeatability <0.5% at 2.0 OD Stray light 0.03% at 230 nm Reading speed (kinetic) 96 wells: 11 seconds 384 wells: 22 seconds  FLUORESCENCE INTENSITY: Light source Xenon flash Detector PMT for monochromatic system PMT for filter system Wavelength selection monochromators (top/bottom) Filters (top) Wavelength range Monochromators: 250 - 700 nm (850 nm option) Filters: 200 - 700 nm (850 nm option) Monochromator bandwidth Fixed, 16 nm Dynamic range 7 decades Sensitivity Filters: Fluorescent 0.25 pM (0.025 fmol/well, 384-well plate)  Monochromator: Fluorescent 2.5 pM (0.25 fmol/well, 384-well plate) - top Fluorescent 4 pM (0.4 fmol/well, 384-well plate) - bottom Reading speed (kinetic) 96 wells: 11 seconds 384 wells: 22 seconds  LUMINESCENCE: Wavelength range 300 - 700 nm Dynamic range >6 decades Sensitivity Monos: 20 amol ATP (flash) Filters: 10 amol ATP (flash), 100 amol (glow)  FLUORESCENCE POLARIZATION: Light source Xenon flash Detector PMT Wavelength selection Filters Wavelength range 280 - 700 nm (850 nm option) Sensitivity 1.2 mP standard deviation at 1 nm fluorescent  TIME-RESOLVED FLUORESCENCE: Light source Xenon flash Detector PMT  WAVELENGTH: Wavelength range Filters: 200 - 700 nm (850 nm option) Sensitivity Filters: Europium 40 fM (4 amol/well, 384-well plate) Monos: (120 amol/well, 384-well plate)  REAGENT DISPENSERS: Supported detection modes All modes Number 2 syringe pumps Supported labware 6- to 384-well microplates, Petri dishes Dead volume 1.1 mL with back flush Dispense volume 5 - 1000 µL in 1 µL increment Dispense accuracy ±1 µL or 2% Dispense precision <2% at 50-200 µL  Power: 130 Watts max  PHYSICAL CHARACTERISTICS: Dimensions 15.4"W 18.6"D 12.9"H (39.1 x 47.2 x 32.8 cm), Weight 50 lbs (22.5 kg) | **1** |  |  |
| **AW&WQCL/EQ/50** | **Cell Analyzer**  **(flow cytometer)** | Fluorescence sensitivity <100 MESF for FITC, PE, and APC Scatter sensitivity <0.3 μm FSC resolution with small-particle detection module Sample loading Standard microplates (127.75 x 85.5 mm): up to 384-well 5 ml tubes (12 x 75 mm): stat tube position for single tube, 40-tube rack Sample throughput <15 min for 96-well plate in high-throughput mode Excitation sources Up to five spatially separated lasers.  Standard options include: 355 nm, 50 mW 488 nm, 100 mW 640 nm, 100 mW 405 nm, 100 mW 561 nm, 50 mW Detection Up to 30 detectors, including FSC and SSC; optional second FSC detector Cuvette Fused silica with 145 x 265 μm channel Speed >100,000 events per second with all parameters enabled Data processing Simultaneous measured peak, area, and width for every channel 24-bit data for peak and area 17-bit data for width with high-resolution linear interpolation at the half height Fluidics Bulk fluids: 4 x 4 L bulk fluid tanks on board for sheath and waste Onboard additive concentrate and cleaner Operational flow rates 0.0025–3.5 μl/sec Dimensions (W x D x H) 74 x 69 x 66 cm (29 x 27 x 26 in) Weight 110 kg (240 lb) maximum Data format Flow Cytometry Standard (FCS) 3.1. | **1** |  |  |
| **AW&WQCL/EQ/51** | **Portable Refractometer** | Size: 28/30x40x175mm  Weight:245g  Measurement Accuracy: +/-0.2%  Min. Div.:0.2%  Brix Range: 0-32%  Brix Min. Div.: 0.2%  Measurement Range: 0-32% brix;1.000-1.120sg  Material:aluminium alloy  Lens:Refraction prism | **5** |  |  |
| **AW&WQCL/EQ/52** | **Refrigerated, High-Speed Micro Centrifuge** | Max. RPM/RCF 17,000 / 27,237 xg  Max. capacity 30 x 1.5/2.0 ml, 8 x 8-tube PCR strips  Temp. range (oC) -20 to +40  FAST cool button Yes  Time control Pulse, timed < 100 min or continuous  Time counting modes Selectable, at set speed or from starting  RPM/RCF conversion Yes  Noise level (dB) ≤ 56  ACC/DEC (step or time) 9/10 steps (17/17 sec)  Program memory 100  Parameters on display , Oper Status, Lid Open/Close,  Min: Sec, Temp, ACC, DEC  Display Blue LCD Automatic rotor identification Yes Imbalance cut-off Yes Safety lid lock Yes Lid drop protection Yes Power supply (V/Hz) 220/50~60 (110V optional) Power requirement (kVA) 2.0 Dimension (W x D x H, mm) 310 x 620 x 265 Weight without rotor (kg) 43. | **1** |  |  |
| **AW&WQCL/EQ/53** | **Manual Micropipette (Single Channel Pipettes)** | 0.1-2 µL, 0.5-10 µL,2-200 µL,10-100 µL,20-200 µL,100-1000 µL,1000-5000 µL | **2 of each** |  |  |
| **AW&WQCL/EQ/54** | **Manual Micropipette (Multichannel Pipettes)** | 0.1-2 µL,2-20 µL,20-200 µL | **2 of each** |  |  |
| **AW&WQCL/EQ/55** | **PCR 96**  **Well Plate** | Color: Clear  For Use With (Equipment):Real-Time PCR Systems or Thermal Cyclers  Format: 96-well plate, Low profile, Skirted  Product Size:150 plates  Reaction Speed: Low profile. | **200** |  |  |
| **AW&WQCL/EQ/56** | **Adhesive PCR Plate Seal** | Color: Clear  For Use With (Equipment):Thermal Cyclers  Plate Compatibility:384-Well Plates, 96-Well Plate, Fast (0.1 ml), 96-Well Plates  Product Size:100 sheets  Type: Film, Seal, or Applicator. | **200** |  |  |
| **AW&WQCL/EQ/57** | **Tintometer** | Multifunctional for test, color and odor, Visual units, transmittance, reflectance.  Range: 0.1-79.9 Red, 0.1-49.9 yellow, 0.1-3.9 blue, 0.1-3.0 neutral.  Resolution: 0.1 unit.  Optical system: 11 glass-filled nylon racks containing a graduated range.  Light source: 2x12 volt, 10 watt tungsten halogen lamp.  Path length: up to 153 mm (6”)  Power: 12 volt AC, switchable to suit 220 /110 volt supply.  Dimension: width 330 mm, depth 410 mm, height 230 mm. | **2** |  |  |
| **AW&WQCL/EQ/58** | **Water Distillation Unit** | Output: 4L/hr, single distilled.  pH: 5.0-6.5  Conductivity: 3.0-4.0 µS/cm  Resistivity: 0.25-3.0 mOhm-cm  Temperature :25-30 oC  Water supply:1 liter/min,3-100 psi,(20-700 kPa)  Electricity supply: 220 or 240V, 50-60Hz, single phase  Power requirements: 3 KW  Dimension: WxDxH 500x150x450 mm. | **1** |  |  |
| **AW&WQCL/EQ/59** | **Portable Spectrophotometer** | Data Logger:500 measured values (Result, Date, Time, Sample ID, User ID)  Detector: Silicon photodiode  Dimensions (H x W x D):98 mm x 178 mm x 267 mm  Display: Graphical display 240 x 160 pixel (LCD, b/w, backlit)  Interface: USB type Mini  Mains Connection 2:110 - 240 V / 50/60 Hz Operating Conditions: 10 - 40 °C (50 - 104 °F), max.  Relative humidity: 80 % (non-condensing)  Operating Humidity: max. 80 % relative humidity (non-condensing)  Operating Mode: Transmittance (%), Absorbance and Concentration  Operating Temperature: 10 - 40 °C  Optical System: Reference beam, spectral  Photometric Accuracy: ± 0.003 Abs @ 0.0 - 0.5 Abs  Photometric Linearity:< 0.5 % (0.5 - 2.0 Abs)  Photometric Measuring Range: 0 - 3 Abs (wavelength range 340 - 800 nm)  Power Supply: 4 x AA size Alkaline rechargeable Battery Power supply: 110 - 240 V; 50/60 Hz  Reproducibility: ± 0.005 Abs (0 - 1 A)  Cuvette Compatibility 2:10 mm square / 1 inch square and 13 mm / 16 mm / 1 inch round  Sample Cell Compatibility: 13 / 16 mm and 1 inch round adapter, 10 x 10 mm 1 inch square and 10x10mm  Storage Conditions: -30 to 60 °C (-22 to 140 °F), max.  Stray Light:< 0.5 %T at 340 nm with NaNO2  Temperature Range:0 - 50 °C (32 - 122 °F)  With multiple User Interface Languages  User Programs:50  Wavelength Accuracy:± 2 nm (range 340 - 800nm)  Wavelength Calibration: Automatic  Wavelength Range:340 - 800 nm  Wavelength Reproducibility:± 0.1 nm  Wavelength Selection: Automatic  Weight:1.5 kg  Printed Basic Manual, CD with procedure manual (English). Set of vial adapter, Alkaline Battery, Dust Cover.  Equivalent to Hach , DR1900 | **1** |  |  |
| **AW&WQCL/EQ/60** | **Portable Colorimeter** | Data Logger:500 measured values (Result, Date, Time, Sample ID, User ID) Detector: Silicon photodiode  Dimensions (H x W x D):231 mm x 96 mm x 48 mm  Display: Graphical display 240 x 160 pixels (Backlit)  Includes: two 1-inch glass sample cells marked at 10, 20 and 25 mL, two 1 cm plastic sample cells, 1 x 16-mm COD/Test Tube adapter, alkaline batteries, printed multilingual instrument manual, instrument and procedure manuals on CD, USB Mini to USB Cable.  Interface: USB type Mini  Operating Conditions: 10 - 40 °C (50 - 104 °F), max. relative humidity : 80 % (non- condensing)  Operating Humidity: max 90 % relative humidity (non-condensing)  Operating Mode: Transmittance (%), Absorbance and Concentration  Operating Temperature: 10 - 40 °C  Optical System: 0 / 180 deg transmittance  Photometric Accuracy:± 0.005 Abs @1.0 ABS Nominal  Photometric Linearity:± 0.002 Abs (0 - 1 Abs)  Photometric Measuring Range:0 - 2 Abs  Power Supply: 4 x AA size alkaline cells 4x rechargeable Battery and also with External charger.  Reproducibility:± 0.005 Abs (0 - 1 A)  Sample Cell Compatibility: 1 inch round or 16 mm round (with adapter)  Spectral Bandwidth: 15 nm filter bandwidth  Storage Conditions: -30 to 60 °C (-30 - 140 °F), max.  Supported Chemistry: tests  Temperature Range:0 - 50 °C (32 - 122 °F)  User Programs: Custom programming 10  Wavelength Accuracy:± 1 nm (fixed, varies with model)  Wavelength Range:420 nm, 520 nm, 560 nm, 610 nm  Wavelength Selection: Automatic  Weight:0.6 kg with battery, Equivalent to HACH, DR900. | **1** |  |  |
| **AW&WQCL/EQ/61** | **Multiparameter DO/BOD, pH, ORP, and Conductivity Measurement (Bench Top & Portable)** | Input for pH, ORP, DO/BOD, or conductivity sensors  Data storage - 500 data sets in manual mode and 5,000 or 10,000 data sets in automatic logging mode  Large, easy to read graphic display  Color screen and antibacterial keypad on instruments , digital sensors - plug and play connectivity  sensors store serial # and calibration data  USB connectivity to manage data; USB cable included  PC software included for easy data transfer  Durable electrode stand.  Ph, conductivity and DO/BOD sensors automatically store their unique serial number and calibration data.  BOD Analyst desktop software to automatically calculate BOD values  Ph: - 0.000 to 14.000 (+/-0.004),  Conductivity: - 10 µS/cm to 2,000 mS/cm +0.5% of value .01µS/cm to 200 µS/cm +0.5% of value ,  TDS: - 0 to 100 oC (32 to 212 oF),  Dissolved Oxygen: - 0 to 50 mgL; 0 to 500% air saturation,  Salinity: - 0.0 to 70.0 ppt +0.5% of value  Temperature, Conductivity, Resistivity, Salinity, TDS (Total Dissolved Solids), pH/mV, Oxidation Reduction Potential (ORP), Partial Pressure, Dissolved Oxygen (% and mg/L\* (BOD).  -With nitrate selective electrode.  -Ammonia selective electrode.  - chloride selective electrode. | **2** |  |  |
| **AW&WQCL/EQ/62** | **PH Meter**  **(Bench Top and Portable)** | Single measurement of pH, ORP (mV) and temperature.  Large, high-contrast, LCD display; displays pH/mV and temperature simultaneously.  Simple 1, 2, or 3 point calibration  AUTOLOCK mode holds stable readings on the display.  buffer sets: (7.00, 4.01, 10.01) or (6.86, 4.00, 9.18)  Automatic or manual temperature compensation of all pH measurements.  Battery or AC power, included with the instrument  Range: pH: -2.0 to 16.0 pH units mV: -1999.9 to 1999.9 mV Temp: 0.0 to 100°C (32.0 to 212°F)  Resolution: pH: 0.01 pH units mV: 0.1 mV Temp: 0.1°C  Accuracy: pH: ±0.01 pH units mV: ±0.05% FS ±1 digit Temp: +0.2°C System Accuracy (instrument, sensor, cable): 0.2°C +1 LSD  Temperature Sensor:Thermistor, 10 k Ω at 25°C  Slope: ±30% at pH 4.00, 4.01, 9.18 and 10.01  Display: Graphic LCD display, 93 mm wide x 58 mm high  Ph Buffer Recoganition: (pH 4.00, 6.86, 9.18), user selectable  Audio Feedback: All touch keys  WEIGHT: 590 grams (1.3 lbs) with batteries installed; 450 grams (0.99 lbs) without batteries installed  Operating Temperature Range: From 0 to 50°C  Relative humidity: up to 90%  Power: 6 x 1.5 Volt AA batteries or the included power supply.  Dimension: 155 L x 195 W x 52 H mm (6.10 x 7.68 x 2.05 in).  -With nitrate selective electrode.  -Ammonia selective electrode.  - chloride selective electrode. | **2** |  |  |
| **AW&WQCL/EQ/63** | **Teledyne Stream Pro ADCP with 3.0m Depth Range** | For Integrated Measurement of flow rate in large canals and streams. | **02** |  |  |

**List of General Lab Supplies:**

| **Item Code** | **Name of Item** | **Specification** | **Qty** | **Rate** | **Amount** |
| --- | --- | --- | --- | --- | --- |
| **AW&WQCL/GLS/01** | **Staining Dish Outfit** | Staining dish outfit, with rack for 50 slides, stainless-steel rack for 50 micro slides, Dish dimensions including lid 114 x 213 x 83 mm high overall; min. depth approx. 67 mm, Rack handle hinged to fit inside dish. Rack and dish with cover. | **5** |  |  |
| **AW&WQCL/GLS/02** | **Optic Wipes** | Non-woven cloth, Cleans lenses, non-woven cloth, soft and lint-free. | **10 pack** |  |  |
| **AW&WQCL/GLS/03** | **Lab Ice Pans** | Small, medium and large pans,  Superior insulating properties combined with high chemical resistance with Magic Touch Ice Pans compatible not only with wet ice, but also with ultra-low temperature materials including dry ice, salt slurries, dry ice solvent slurries, or liquid nitrogen. Their lightly textured non-slip finish and raised edge provides secure transport and a stylish look. Magic Touch Ice Pans are available in 1.0L Mini, 4.0L Midi and 9.0L Maxi sizes. Durable and non-sweating Impervious to moisture and odors. temperature range: -196°C (-320°F) to 100°C (212°F) Features convenient pour spout, drip-proof rims and fill line indicator, Snug-fitting, keyed lid and base make stacking easy and secure. | **10 of each** |  |  |
| **AW&WQCL/GLS/04** | **Digital Camera** | 24.1 megapixel DX-format image sensor Shoot up to 6 frames per second for up to 100 continuous shots Wireless sharing and control with adapter ISO range from 100 to 6400 1080p videos with full-time autofocus and built-in stereo mic. | **4** |  |  |

**Note:**

1. Vendors are required to submit the hard, soft copies of technical proposals along with duplicate copy.
2. Instructions to tenderers (IT) & Condition of Contract (CC) in the tender document should be read, signed & stamped by the vendors.

Signature with Stamp Signature

Contractor Procurement Manager

USPCAS-W, MUET, Jamshoro