



PROCUREMENT MANAGER
U.S.-Pakistan Center for Advanced Studies in Water

No. PM/USPCAS-W/MUET/JAM/-05
Dated: 18-Jan-18

Assistant Manager (A&F)
Sindh Public Procurement Regulatory Authority (SPPRA),
Services General Administration &
Coordination Department Government of Sindh,
Barrack No. 8, Sindh Secretariat No.04-A, Court Road
KARACHI
Ph. NO. 021-9205356-69

Subject: - **UPLOADING OF NIT & TENDER DOCUMENT.**

Dear Sir,

Kindly find enclosed herewith the copies of the Tender Documents (Hard & Soft) for the Procurement of Equipment, Chemical, Glassware and General Laboratory Supplies for Soil & Water Analysis Lab and Advanced Water & Waste Water Quality Control Lab at USPCAS-W, Mehran University Engineering & Technology Jamshoro:

You are therefore, requested to kindly upload the Tender Documents of above said work prior 24-Jan-2018.

Procurement Manager
USPCAS-

Enclosed:

1. Notice Inviting Tender
2. Notification of Procurement Committee
3. Notification of Complaint Redressal Committee
4. Bidding Documents Soft and Hard Copies
5. Annual Procurement Plan

C. f.w to:

1. Project Director, USPCAS-W, MUET, Jamshoro
2. The Additional Director, ICPC, MUET, Jamshoro.
(He is requested to kindly upload the NIT & tender document on MUET, website)
3. Mr. Shahzad Bashir Asstt. System Admin, USPCAS-W, MUET, Jamshoro
(He is requested to kindly upload the NIT & tender document on website)
4. Mr. Sahib Khan Bhund, Com, Media Outreach Expert
(He is requested to kindly published the NIT in three leading newspapers, English, Sindhi & Urdu)
5. Secretary to the Vice Chancellor, MUET Jamshoro

Tel: +92-22-2771226, Tel: +92-22-2772250-72 (Ext. 2100) Fax: +92-22-2771382
E-mail: ag.kandhir@admin.mueta.edu.pk, URL: water.mueta.edu.pk

SPPRA INWARD DIARY

No: 4823

DATED: 22-01-2018



“SAY NO TO CORRUPTION”

No. PM/USPCAS-W/ MUET/JAM/-04

Dated: 18-Jan-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 Equipment, Chemical and Glassware of Soil & Water Analysis Laboratory	2,000/-	02 Months	2%	25-01-2018 to 13-02-2018	14-02-2018	Procurement Manager USPCAS-W
2	Procurement of Equipment, Chemical, Glassware and General Laboratory Supplies of Advanced Water & Waste Water Quality Control Laboratory	2,000/-	02 Months	2%	25-01-2018 to 13-02-2018	14-02-2018	Procurement Manager USPCAS-W

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 & www.mueta.edu.com.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 deposited in the above office by (14-02-2018) up to (12.30 PM) and same will be opened on the same day, @ (01.00 PM) in 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 unaccompanied of the earnest money, tender will not be considered in the competition.
2. The Method of Procurement is Single Stage - Two Envelope Procedure. (Technical & Financial)
3. The bidders should have at least 10 years successful experience of same services of any University or large reputed organization in addition to instruction above.
4. 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,
Phone No. 022-2109148
Email: po.uspcasw@admin.mueta.edu.pk



USAID
FROM THE AMERICAN PEOPLE

U.S.-Pakistan
Centers for Advanced Studies in Water



NOTIFICATION

No. MUET/USPCAS-W/- 627 of Dated 22-11-2016 It is notified for the general information of all concerned that the Vice Chancellor, Mehran University of Engineering & Technology, Jamshoro/Chairman BoG has been pleased to re-constitute a separate Bid Opening Committee/ Procurement Committee consisting of following members for Procurement Cell in the Project Director USPCAS-W, Mehran University of Engineering & Technology, Jamshoro with immediate effect:

- | | |
|--|------------------|
| 1) Dr. Bakhshal Khan Lashari
Project Director
USPCAS-W, MUET, Jamshoro | Convener |
| 2) Engr. Muhammad Mashooque Siddiqui
Director Procurements
University of Sindh, Jamshoro | Member |
| 3) Mr. Abdul Ghafoor Kandhir
Procurement Manager
USPCAS-W, MUET, Jamshoro | Member/Secretary |

The following terms of refernece/ functions of above procurement cimmittee are as under:

1. Shortlisting of contractor/firms/suppliers responding to the Notice Inviting Tenders (NIT).
2. Evaluation of Bids.
3. Finalization and recommendation of successful bidders.
4. To cancel the bidding process at any time prior to the acceptance of a bid.
5. Upon request by any of the bidders, communicate to such bidder, grounds for the cancelation of bidding process, but is not required to justify such grounds.
6. To recommend the competant authority for inviting fresh tenders in case an infirmity has surfaced in the bidding documents.
7. To recommend to the competant authority for awarding the contract to the bidder with the lowest evaluuated cost, but not necessarily the lowest submitted price.

Project Director
USPCAS-W
MUET, Jamshoro

Copy f.w.cs to:

1. All committee members
2. The Secretary to Vice Chancellor, MUET, Jamshoro

Partnering Universities:

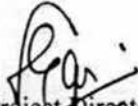


NOTIFICATION

No. MUET/USPCAS-W/- 70 of 2017 It is notified for the general information of all concerned that the Vice Chancellor, Mehran University of Engineering & Technology, Jamshoro/Chairman BoG has been pleased to re-constitute Complaint Redressal Committee (CRC) consisting of the following members with immediate effect:

- | | |
|---|----------|
| 1. Prof. B. S. Chowdhry,
Dean Faculty of Electric, Electronic, Computer Engineering,
MUET, Jamshoro | Convener |
| 2. The Divisional Accounts Officer,
Provincial Coastal Highway Division,
Govt. of Sindh, Hyderabad. | Member |
| 3. The Executive Engineer,
Education Works Department,
Govt. of Sindh, Matiari. | Member |

The terms of references of the above committee is to address the complaints of bidders / contractors that may occur during the procurement proceedings in USPCAS-W, as per Sindh Public Procurement Regulatory Authority, (SPPRA) Rules 2010 (Amended 2013), Government of Sindh.


Project Director
USPCAS-W
MUET, Jamshoro

Copy f.w.cs to:

1. All committee members
2. The Secretary to Vice Chancellor, MUET, Jamshoro

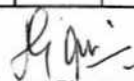
Partnering Universities:

 THE UNIVERSITY OF UTAH



**U.S. PAKISTAN CENTRE FOR ADVANCED STUDIES IN WATER (USPCAS-W)
MEHRAN UNIVERSITY OF ENGINEERING & TECHNOLOGY (MUET), JAMSHORO
Annual Procurement Plan 2017-2018**

Sr. No	Description of Procurement	Quantity (where applicable)	Cost (where applicable)	Estimated Total Cost	Funds Allocated	Source of funds (ADP/ Non ADP)	Proposed Procurement Method	Timing of Procurements				Remarks
								1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	
1	Laboratory Equipment	As per requirement	\$ 1,600,000.00	\$ 1,600,000.00	\$ 1,600,000.00	USAID Funded	As Per SPPRA Rule 46/ II	-	Oct-17	-	-	-
2	Procurement of Servers/IT Equipments	As per requirement	\$ 20,000.00	\$ 20,000.00	\$ 20,000.00	USAID Funded	As Per SPPRA Rule 46/ II	-	Oct-17	-	-	-
3	Supply Of Split Air Conditioners, Fridge, Deep Freezers, Coffee Vending Machine, Vending Machine, Floor Dust Cleaning Machine, UPS & Stabilizer	As per requirement	\$ 35,000.00	\$ 35,000.00	\$ 35,000.00	USAID Funded	As Per SPPRA Rule 46/ II	-	Oct-17	-	-	-
4	Furniture & Fixtures	As per requirement	\$ 150,000.00	\$ 150,000.00	\$ 150,000.00	USAID Funded	As Per SPPRA Rule 46/ II	-	Oct-17	-	-	-
5	Chemical And Glassware	As per requirement	\$ 100,000.00	\$ 100,000.00	\$ 100,000.00	USAID Funded	As Per SPPRA Rule 46/ II	-	Oct-17	-	-	-
6	Consultancy Services for feasibility study of Water Treatment Plant and Distribution Network & its design of Water Supply System of MUET, Jamshoro	As per requirement	\$ 25,000.00	\$ 25,000.00	\$ 25,000.00	USAID Funded	As Per SPPRA Rule 72	-	-	Jan-18	-	-
7	Consultancy Services for Assessing Relevance of CAS-W Program Outputs to Sector / Industry Needs.	As per requirement	\$ 20,000.00	\$ 20,000.00	\$ 20,000.00	USAID Funded	As Per SPPRA Rule 72	-	-	Jan-18	-	-
8	Procurement of Chemicals, Plasticware and Glassware for HEC Research Project	As per requirement	Rs 700,000.00	Rs 700,000.00	Rs 700,000.00	Higher Education Commission	As Per SPPRA Rule 72	-	Nov-17	-	-	-


 Project Director
 USPCAS-W
 MUET, Jamshoro



TENDER DOCUMENT

FOR

**Procurement of Laboratory Equipment,
Chemical, Glassware and General Laboratory
Supplies of:**

- **Soil and Water Analysis Laboratory**
- **Advanced Water & Waste Water Quality
Control Laboratory**

AT

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

MEHRAN UNIVERSITY

OF

ENGINEERING AND TECHNOLOGY

JAMSHORO,

SINDH- PAKISTAN

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01.	(i) B.O.Q. OF THE LABORATORY EQUIPMENT CHEMICAL, GLASSWARE & GENERAL SUPPLIES FOR:	COLOR
a	➤ Soil and Water Analysis Laboratory	Yellow
b	➤ Advanced Water & Waste Water Quality Control Laboratory	Blue



MEHRAN UNIVERSITY OF ENGINEERING & TECHNOLOGY
JAMSHORO 76062, SINDH, PAKISTAN



"SAY NO TO CORRUPTION"

No. PM/USPCAS-W/ MUET/JAM/-04

Dated: 18-Jan-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 Equipment, Chemical and Glassware of Soil & Water Analysis Laboratory	2,000/-	02 Months	2%	25-01-2018 to 13-02-2018	14-02-2018	Procurement Manager USPCAS-W
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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 & www.mueta.edu.com.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 deposited in the above office by (14-02-2018) up to (12.30 PM) and same will be opened on the same day, @ (01.00 PM) in 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.
3. The bidders should have at least 10 years successful experience of same services of any University or large reputed organization in addition to instruction above.
4. 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,
Phone No. 022-2109148
Email: po.uspcasw@admin.mueta.edu.pk

ARTICLES OF AGREEMENT

This Agreement made this _____ day of _____ 2017, 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 _____ (name and designation of the authorized person), located at _____, hereinafter called the "**Supplier / Contractor**" which expression shall include their successors, legal representatives of the second part.

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.:

- a) Articles of Agreement;
- b) Instructions to Tenderers;
- c) Conditions of Contract;
- d) Supplier / Contractor's Offer including the relevant correspondence prior to signing of this Agreement with all Annexures duly filled in;
- e) The specifications of the equipment; and
- f) Bill of Quantity with prices.

- 3. 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 Laboratory Equipment/Chemical/Glassware/General Laboratory Supplies in conformity in all respects of the Contract & the order form No. _____.
- 4. 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 Laboratory 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: _____

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 for

under the USPCAS-W project. This tender is issued for the supply, installation, putting into operation and demonstration of the working of the Laboratory 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

- a) 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 title of the Tender, number of invitation to the Tender and the date of opening of the Tender, and **must be sealed**.
- b) 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.
- c) The **erasing and/or alterations**, if any, in the Tender shall be authenticated by the authorized person by his full signature.
- d) 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.
- e) **Ambiguous and incorrect answers** and/or incorrect filling of Tender Documents will render the tender liable to rejection.
- f) **Quotations** through cable, telegraph, telex, fax, or e-mail will not be considered.

- g) 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**

- a) 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 Laboratory Equipment/Chemical/Glassware/General Laboratory 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.
- b) As soon as an award is made, the provisions in paragraphs **c), d) and e)**, hereunder, shall **operate**.
- c) If the Tender is **rejected**, the Bid Bond will be returned to the tenderer as soon as possible after rejection.
- d) 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.

4. **Quality of Equipment.**

- a) The Laboratory 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.
- b) In Tenderers must also warrant the use of best material in the making of the, Chemical 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".

- c) 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.
- d) The Hardware for operation of the Equipment will be made available by the University.
- e) 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.
- f) The Equipment offered shall be complete with their standard accessories and must be accompanied by their normal instructions book/manual.
- g) 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.
- h) Unless stipulated otherwise in the specifications for any item, the Equipment conforming to ASA, SAE, SSI or DIN will be acceptable.
- i) The successful bidders may be asked to supply list of spares for 10 years satisfactory operation of any item of the Equipment prior to award of the contract.

5. **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.

6. **Principals Name, Certificate and Invoice.**

- a) The tenderers are required 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 University 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.

- b) 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".

9. **Prices.**

- a) **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:

- i. All charges for packing, marking, handling, insurance, inspection, guarantees, freight/transportation, agent's commission; and all duties, taxes, levies, octrois etc; and.
- ii. 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.

- (v) 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 out going 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.

10. Validity of Prices/Tender

- a) The prices quoted shall be valid for a period of at least 90 days from the date of opening of the tender.
- b) Until the final Contract is executed, the successful bidder shall be bound by the terms and conditions of this Tender Document.

11. Acceptance of the Terms

- a) 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.

- b) 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.

12. Delivery Period.

i. Shipment of Imported Items.

- a) 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.
- b) The tenderer must indicate in his/her offer the port from where the Equipment will be shipped.

ii. Delivery Period.

- a) 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.
- b) 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.

iii. Delay in the Delivery of the Equipment/Chemical/Glassware/General Lab Supplies.

- a) 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.
- b) 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. If it 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.

- 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.
- c) The USPCAS-W / University reserves the right to award the contract to one bidder or divide it among several bidders.
- d) The USPCAS-W / University reserves the right to increase or decrease the quantity of the Equipment at its discretion without assigning any reason whatsoever.
- e) 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.

- a) In comparing bids the USPCAS-W / University will consider, besides the prices quoted, such other factors as compliance with specifications, relative quality of Equipment/Chemical/Glassware/General Laboratory Supplies, past experience of the tenderer, after-sales services facilities available in Pakistan and the tenderer's capacity to perform.
- b) The evaluation criteria specifically mentioned in the specifications will also be considered for evaluation of the bids.
- c) 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.

16. Errors in the Bids.

- (i) Any arithmetic errors found during evaluation of bids will be rectified on the following basis:
 - a) If there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total price shall be corrected by the USPCAS-W / University.
 - b) If there is a discrepancy between the words and figures, the amount in figures shall prevail.

- c) 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.

17. 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.

CONDITIONS OF CONTRACT

1. Scope of the Contract

- a) 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.
- b) 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:

- i. **The University** shall mean the Mehran University of Engineering and Technology, Jamshoro, Sindh.
- ii. **USPCAS-W / University** shall mean the U.S.Pakistan Center for Advanced Studies in Water, Mehran University of Engineering and Technology, Jamshoro, Sindh.
- iii. **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.
- iv. **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.
- v. **The Equipment** shall mean and include all the Laboratory Equipment/Chemical/Glassware/General Supplies, literature, materials and articles to be provided by the Supplier / Contractor under the Contract.
- vi. **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.
- vii. **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.

- viii. **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.
- ix. **Month** shall mean the Calendar month.
- x. **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:
 - i. Articles of Agreement;
 - ii. Instructions to Tenderers;
 - iii. Conditions of Contract;
 - iv. Supplier / Contractor's Proposal / Offer including the relevant correspondences prior to signing of the agreement with all Annexures duly filled in;
 - v. The Specifications of the Equipment; and
 - vi. 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/Chemical/Glassware/General Laboratory 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.

- 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**.

- 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 / Contractor at 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.

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 Laboratory Equipment, Chemical, Glassware & General Laboratory 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/Chemical/Glassware/General Lab 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 coordinate 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.

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 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
- 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.

- 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:

- i. 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.
- ii. 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/repared, 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.

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.



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:

- a) **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
- b) 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

- a) 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.
- b) 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.
- c) 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

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.

22. Delay in Delivery - Liquidated Damages

- a) 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.
- b) 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

- a) 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.
- b) 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.
- c) 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

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.

FORM OF TENDER
(LETTER OF OFFER)

Tender Reference No. _____ Dated _____

Name of Contract: **Supply, Installation, and successful Commission/ Operation and Demonstration required for**

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 severally 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 _____ 2015

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: _____

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
- (ii) 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.

**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

It is certifies 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.

(signature of the authorized person)

SEAL

(name of the authorized person)

(name of the Tenderer)

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

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

(Continued on the next page)

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 I (Rs.)	Total Price for Part II (Rs.)	Total Cost (Rs.)
1	2	3	4	5	6	7	8	9

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)

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 Laboratory 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;

- a) the Principal (Tenderer) withdraws his Tender during the period of validity of the Tender;
- b) the Principal (Tenderer) does not accept the correction of his Tender Price, pursuant to Clause 16 of "Instructions to Tenderers"; or
- c) failure of the successful Tenderer to:
 - i) furnish the required Contract Performance Bond, in accordance with Clause 3 of "Instructions to Tenderers"; or
 - ii) 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)

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 severally, 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)

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

(signature of the authorized person)

SEAL

(name of the authorized person)

On behalf of

(name and address of the Tenderer)

➤ **Procurement of Equipment, Chemical &
Glassware of Soil and Water Analysis
Laboratory at USPCAS-W, MUET,
JAMSHORO**

ITEM CODE

S&WAL/EQ

S&WAL/CH

S&WAL/GW

Lab Equipment:

ITEM CODE #	Item	Specifications	Qty	Rate	Amount
S&WAL/ EQ/01	Atomic Absorption Spectropho meter	<p>Atomic Absorption Spectrophotometer with Flame, Hydrite and graphite furnace technology in one single device. • Dual Atomizer. Can analyze liquid as well solid samples in a single instrument. •Fast and unproblematic change from flame mode to graphite technology, completely without readjustment or complicated change of autosampler – one click in the software does it all.</p> <p>• Easy and simple handling for the user. 8/Eight coded-lamp turret suited for coded lamps. •Transverse heated graphite tube furnace. •Furnace camera to monitor and control sample introduction and combustion in the graphite tube.</p> <p>•Deuterium and Zeeman background correction. •Automatic optimization routines for flame composition and burner height. •Atomization and pyrolysis temperature, magnetic field strength, two-field and three-field correction mode.</p> <p>•Superior aspherical optical system with components, like a quartz coated toric mirror, provides excellent light throughput. •Magnetic field technology, 3-field mode for extension of the linear concentration range. •Two atomizers combined in a single instrument allow switching between flame, hydride and graphite furnace techniques without any mechanical movement. High sample throughput: •Variable sample introduction technique capable of easily processing both liquids and direct solids making it unique. •High performance autosampler, with dilution and enrichment makes over-night processing routine and guarantees the highest dosing precision.</p> <p>Solid AA® — Direct analysis of solid samples: The transversely heated graphite furnace facilitates the introduction of liquid samples as well as direct solid sample feed. The combination of the furnace with powerful background correction forms the basis for optimal results.</p> <p style="text-align: right;">With Necessary</p> <p>Softwares: Software package ASpect® LS, offers both routine operation and multifarious development and optimization facilities. It allows comprehensive control, monitoring and recording of all processes run in the spectrometer and its accessories.</p> <p>Advanced user-friendliness. Automated optimization. Data postprocessing the easy way. Quality control and GLP. FDA 21 CFR Part 11•Comprehensive user management,</p> <p>Impotent Acessories: solid AA® — Direct solid AAS. solid AA®. •SSA 600</p>	1		

ITEM CODE #	Item	Specifications	Qty	Rate	Amount
		— fully automatic solid sampling system with integrated microbalance. • SSA 600L — fully automatic solid sampling system with integrated microbalance and liquid dosing accessory. Auto-sampler systems for flame, hydride and atomic fluorescence technique. " Segmented Flow Star SFS 6 ". Scraper etc.			
S&WAL/ EQ/02	ET. Gauge	ET-gage 255-700 with Different permeable membranes for different plant species also with a Holding stand. Accessories 1. Canvas #C2, #30 and #54 Three quantity of each with each unit. 2. Rubber Retaining Rings 3 in Quantity with each unit. Disposable wafer assembly 10 in quantity with each. 3. Ceramic Cups two with each. 4. Three stands for holding ET-Gauge with Height of 3, 4 and 6 feet.	3		
S&WAL/ EQ/03	Autoclave	For agricultural Soil and Water Research. Vertical Narrow design Having dimensions 720mm x 1180mm x 1365mm. Mobility easy to move from one place to another Capacity 60-80 liters, compact and hard. Easy to handle. Having booth systems Water Saving System - use only 5 liters of water a day. Sleep Mode - allows user to set time to switch sterilizer to minimum energy consumption Low Rate Cycle - you can run your sterilizer when electrical power costs are low, like after work hours, by setting a delayed start time. Automatic off when cycle completes.	1		
S&WAL/ EQ/04	Plant sample Grinding Mill	Mill for plant sample grinding. Mesh size: 2 to 4 mm. Power 220- 230V, 50Hz. With all necessary Accessories.	2		
S&WAL/ EQ/05	Ultra Centrifuge machine	Centrifuge machine a state of the art bench top ultracentrifuge complete with the necessary hardware and software along with the necessary consumable and spares parts with the following features 1. Max. Speed (RPM) 100,000 rpm or more 2. Speed holding accuracy: + 50 rpm 3. Maximum R. C. F. 1,000,000 g or more 4. Capacity: 150 ml (in fixed-angle), 20ml (in swing-out) 5. Rotor Temperature control range 0-40°C (1 degree increments). 6. Rotor to be provided Two Fixed Angle rotors of tube capacity: (a) 2 ml (RCF more than 899,000 x g) (b) 25 ml (RCF more than 209,000 x g). 7. Rotor cooling 0-40°C. 8. User defined programs RPM or RCF user selectable. 9. Programmability Upto 20 programs with atleast 5 steps in each. 10. Acceleration! Deceleration Profile: 9/9 brake off. The ultracentrifuge must accelerate the rotor to the top speed of 100,000 rpm in less than 90 seconds and must decelerate the rotor from 100,000 rpm to Orpm in less than 80 seconds 11. Timer 1 min to 99 hours,	1		

ITEM CODE #	Item	Specifications	Qty	Rate	Amount
		<p>with HOLD function. 12. Rotor setting method Self-locking system. 13. Balancing: Imbalance-tolerant drive allowing up to +/- 5% opposing load imbalance. 14. Safety: (1) Safety lid interlock to prevent cover opening during centrifugation. 2) Provision for preventing motion of system during operation. 15.Speed indicator: A digital speed indicator should be provided to demonstrate the exact speed. 16. Display: High contrast color LCD touch panel control interface 17. Power requirements: 220/230V AC +/-10% (SO/60Hz) Single phase 18. Regulatory Standards: IEC61010-2-020, EN61326, CE Marking. 19. Standard Accessories qualified: 'I'001 box, tool set and instruction manual. 20. Spares and Consumables: Atleast 100 nos thick walled PC tube compatible for each type of rotor. 21. Data Acquisition: USB port for output of GMP/GLP compatible run data. 22. User Interface Should offer speed and g-force operation, actual run timer, Real Time Clock function, step mode operation, pulse mode, at least 50 case operating history, rotor catalog, and rotor life management, dual display of, Run' & 'Set' parameters etc.</p>			
S&WAL/ EQ/06	Soil Temperature Meters	Soil Temperature Meters Operating Temp. -20 to +60 C. Plate thickness: 5 to 10mm. Plate diameter: 80 to 100 diameter. Measuring Range: ± 2000 to 3000 W m ⁻² .	4		
S&WAL/ EQ/07	Water Sampling Pump	Water Sampling Pump Water sampling: Physical Dimension: Lift capacity: 50 meters. Flow Rate Range: 200-500 ml/mint to 20 ml/mint. Power Requirement: Standard detachable power source Either Battery or Fuel kit. No effect on sample Chemistry.	1		
S&WAL/ EQ/08	Fume Hood	A fume hood designed to limit exposure to hazardous or toxic fumes, vapors or dusts. Having 2.5" width, 3" Length, 3" feet height. Constructed from primarily stress relieved, fully seam-welded, and reinforced white polypropylene for demanding high corrosive applications. All fume hoods are independently test to ISO Standard 14644-1, ASHRAE Standard 110-1995, SEFA-1-2006, and/or NSF/ANSI Standard 49.	2		
S&WAL/ EQ/09	Constant Head Apparatus	Cell = Plated seamless tube 100 mm diameter x 130 mm height, Base = Porous plate with three tie rods, Top plate = Machined to accept smaller	1		

ITEM CODE #	Item	Specifications	Qty	Rate	Amount
		tubes, Tamping rod 8 mm dia. x 300 mm. with tank and stand.			
S&WAL/ EQ/10	Soil Bulk Density Measuring Kit.	The Soil Sample Rings are made from .062w SST tubing, having capacity of volume of each 2" x 2" SST ring is 90.59 cubic centimeters. Samplers have a 1"+ gap between the tip of the core sampler and where the sample liner internal shelf begins. The samplers should has a much shorter 5/16" gap. Core Sampler Cap has a built in waste barrel which provides a full 2" of relief. Kit includes: Core sampler cup, core sampler cap, hammer head cross handle or compact slide hammer attachment, 2-1/2" open face auger, 2-3/4" regular soil bucket auger, 2-3/4" planer auger, 2ft. extension rod, 18" rubber coated cross handle, 2" x 2" stainless steel rings (25) with their own aluminum carrying case w/ foam inserts, 2" plastic end caps (50), adjustable wrenches (2), auger cleanout tool, nylon cleaning brush, impact absorbing hammer, AMS deluxe carrying case with handles and wheels for added portability.	1		
S&WAL/ EQ/11	Soil Sample Grinding Mill	Mortar grinders/grinding mill for processing of soil samples, for subsequent analysis within the framework of quality assurance. Feed 10-8mm sized soil sample and reproduce 0.002 to 2mm sized material. Power 120-240.	2		
S&WAL/ EQ/12	High Air Pressure compressor of 15 Bar	High Air Pressure compressor for 15 Bar pressure plate apparatus. Maximum Pressure 18 Bars. Slowly Produce and release Pressure, automated controlling system. Maximum Pressure continuous 5-8 Bars. Power 220-240V.	1		
S&WAL/ EQ/13	Incubator	Temperature Range: -20°C to +100°C. Heat-up time: -40°C ~+100°C ,within 45 min. Pull down time: +20°C ~-40°C , within 60 min. Size Height 800mm, Width: 600mm, Depth: 460mm. Safety Device builtin: NFB, over pressure, over heat and over current protection for compressor, Over temp. Protect, over load protect of blower, dry heat protection. Power: 220-230 VAC	1		
S&WAL/ EQ/14	Muffle Furnace	Temperature Range: 1500-1600 Centigrade, Min Temperature °C: 100. Max. Temperature °C: 1600 Capacity: 40-50 liters. Reach at maximum within 25 mints. Auto tune feature helps eliminate Temperature overshoot. Energy efficient insulation keeps exterior safe to touch. Power: 220-230 VAC	1		
S&WAL/ EQ/15	Analytical Balance	Measure a Mass at high degree of precision, Weighing Capacity 500g to 0.0001g. Protected by draft shield OR enclosure.	One		

ITEM CODE #	Item	Specifications	Qty	Rate	Amount
S&WAL/ EQ/16	Electronic Digital Micrometer	Electronic Digital Micrometer for measuring Diameter with High accuracy. Count in both millimeters and inches. Least Count: 0.001mm/0.0005 inches. With field kit.	Three		
S&WAL/ EQ/17	Screw Gauge	For measuring diameter with high accuracy. Count in both millimeter and inches. Least count: 0.01mm. Made of Stainless steel. In kit or Box.	Three		
S&WAL/ EQ/18	Microwave Oven	Capacity: 23 Litters, microwave power 950W, made of Stainless steel, Body with water color, with inverter, Display LCD, Control panel popup buttons. Inclusive turn table. Reheat Auto.	01 One		
S&WAL/ EQ/19	DO-Probes	Pro-ODO- YSI Probe, with DO- Cable, DO-sensor, Sensor Cap. For the Item 626279. Rev C). Bag for DO-meter for field.	02 Two		
S&WAL/ EQ/20	Sieve	For sieving soil samples, Having Mesh No. 10 and 18 accord to ASTM and 2 & 1 mm size accord to I.S. Made of Stainless Steel material.	03 Of ea		

Chemicals:

ITEM CODE #	Item	Specifications	Qty	Rate	Amount
S&WAL/CH/01	Nitric Acid (HNO ₃)	Nitric fuming 70% + 30% Water For the Ionic Analysis of Soil, Water and Plant	5 ltrs		
S&WAL/CH/02	Silver Nitrate (AgNO ₃)	99% Pure, Shelf life 5 Years. Dry Powder or crystal form. For the Ionic Analysis of Soil, Water and Plant	1kg		
S&WAL/CH/03	Ammonium Bi Carbonate (NH ₄ HCO ₃)	Purity 98.5%, pH value 7-8.5, Shelf life 5Years. For the Ionic Analysis of Soil, Water and Plant	8 pkt		
S&WAL/CH/04	Ferrous Sulphate (FeSO ₄)	Dry Powder, Shelf life 5Years. For the Ionic Analysis of Soil, Water and Plant	8 pkt		
S&WAL/CH/05	Ethanol (CH ₃ CH ₂ OH)	99% Pure. For the Ionic Analysis of Soil, Water and Plant	5 ltrs		
S&WAL/CH/06	Ferrous Ammonium Sulphate ((NH ₄) ₂ Fe(SO ₄) ₂ ·6H ₂ O)	Soluble in water, Dry Powder, Shelf life 5Years. For the Ionic Analysis of Soil, Water and Plant	5 pkt		
S&WAL/CH/07	Ammonium Molybdate ((NH ₄) ₂ MoO ₄)	98% extra pure, Dry powder, Shelf life 5 Years. For the Ionic Analysis of Soil, Water and Plant	2.0 kg		
S&WAL/CH/08	Potassium Chloride (KCl)	99% Pure, Powder form, Shelf life 5 Years. For the Ionic Analysis of Soil, Water and Plant	3,kg		
S&WAL/CH/09	Sodium Chloride (NaCl)	99.5% Pure, Powder form. 100% Soluble in water. Shelf life 5 Years. For the Ionic Analysis of Soil, Water and Plant	4 pkt		
S&WAL/CH/10	HCL (pure Concentrated)	Concentrated grade 37.5 or 38%. For the Ionic Analysis of Soil, Water and Plant	5 ltrs		
S&WAL/CH/11	HCL (Commercial 20% concentrated)	Commercial grade 20%. For the Ionic Analysis of Soil, Water and Plant	35 ltrs		
S&WAL/CH/12	Ammonium Acetate (C ₂ H ₇ NO ₂)	Dry powder 99% pure, shelf life 5 Years. For the Ionic Analysis of Soil, Water and Plant	5 kg		
S&WAL/CH/13	Boric Acid (H ₃ BO ₃)	Extra Pure, Concentrated Grade, 5 Years shelf life. For the Ionic Analysis of Soil, Water and Plant	5 ltrs		
S&WAL/CH/14	Potassium Chromate (K ₂ CrO ₄)	High purity for analytical use, Shelf life 3 Years. For the Ionic Analysis of Soil, Water and Plant	2 kg		
S&WAL/CH/15	Methyl Orange (C ₁₄ H ₁₄ N ₃ NaO ₃ S)	Extra pure grade for analytical use. Shelf life 5 Years. For the Ionic Analysis of Soil, Water and Plant	500 g		

ITEM CODE #	Item	Specifications	Qty	Rate	Amount
S&WAL/CH/16	Potassium Di Chromate (K ₂ Cr ₂ O ₇)	Dry powder, Extra pure grade for analytical use, Shelf life 5 Years. For the Ionic Analysis of Soil, Water and Plant	5 kg		
S&WAL/CH/17	Magnesium Chloride (MgCl ₂)	Purity 98% extra pure, dry Shelf life 5 Years. For the Ionic Analysis of Soil, Water and Plant	2 kg		
S&WAL/CH/18	Acetic Acid (CH ₃ COOH)	Purity 80%, Shelf life 5 Years. For the Ionic Analysis of Soil, Water and Plant	5 ltrs		
S&WAL/CH/19	Per chloride Acid (Pure strong acid) (HClO)	Purity 70%, extra pure, Shelf life 5 Years. For the Ionic Analysis of Soil, Water and Plant	5 ltrs		
S&WAL/CH/20	Sulphuric Acid (Pure Strong acid) (H ₂ SO ₄)	Purity 98%, Shelf life 5 Years. For the Ionic Analysis of Soil, Water and Plant	10 ltrs		
S&WAL/CH/21	Sulphuric Acid (H ₂ SO ₄) (commercial grade)	Purity 25%, shelf life 5 years. For the Ionic Analysis of Soil, Water and Plant	35 ltrs		
S&WAL/CH/22	HEDTA (Salt) (C ₁₀ H ₁₈ N ₂ O ₇)	Dry salt, powdered form, 5 years shelf life. For the Ionic Analysis of Soil, Water and Plant	2.5 kg		
S&WAL/CH/23	EDTA -Na (Salt) (C ₁₀ H ₁₆ N ₂ O ₈)	Dry salt, powdered form, 5 years shelf life. For the Ionic Analysis of Soil, Water and Plant	2.5 kg		
S&WAL/CH/24	DTPA (Salt) (C ₁₄ H ₂₃ N ₃ O ₁₀)	Dry salt, powdered form, 5 years shelf life. For the Ionic Analysis of Soil, Water and Plant.	2.5 kg		
S&WAL/CH/25	Magnesium Sulphate (MgSO ₄)	95.5% Pure, shelf life 5 years. For the Analysis of Soil, Water and Plant	5 kg		
S&WAL/CH/26	Pure Metal (Fe)	99.5% pure, Metal powder. For the Analysis of Soil, Water and Plant	2 kg		
S&WAL/CH/27	Pure Metal (Zn)	99.5% pure, Metal powder. For the Analysis of Soil, Water and Plant	2 kg		
S&WAL/CH/28	Pure Metal (B)	For the Analysis of Soil, Water and Plant	2 kg		
S&WAL/CH/29	Pure Metal (Mn)	99.5% pure, Metal powder. For the Analysis of Soil, Water and Plant	2 kg		
S&WAL/CH/30	Pure Metal (Mg)	99.5% pure, Metal powder. For the Analysis of Soil, Water and Plant	2 kg		
S&WAL/CH/31	Acetone (C ₃ H ₆ O)	High purity for analytical use. For the Analysis of Soil, Water and Plant	5 ltrs		
S&WAL/CH/32	Phenolphthalein (C ₂₀ H ₁₄ O ₄)	High purity for analytical use. For the Analysis of Soil, Water and Plant	500g.		
S&WAL/CH/33	Aqua check Water quality test Strips (5 in 1) i. free chlorine,	HACH company of (USA) For the Analysis of Water	500 Strips		

ITEM CODE #	Item	Specifications	Qty	Rate	Amount
	ii. Total chlorine. Iii. Hardness iv. Total alkalinity and pH.				
S&WAL/CH/34	Aqua check Strips for free chlorine	For the Analysis of Water	500 Strips		
S&WAL/CH/35	Aqua check Strips for Nitrate Nitrogen	HACH company of (USA) For the Analysis of Water	500 Strips		
S&WAL/CH/36	Aqua check Strips for Total Phosphorus.	HACH company of (USA) For the Analysis of Water	500 Strips		
S&WAL/CH/37	Aqua check Strips for Available Phosphorus	HACH company of (USA) For the Analysis of Water	500 Strips		
S&WAL/CH/38	Aqua check Strips for Arsenic	HACH company of (USA) For the Analysis of Water	1000 Strips		
S&WAL/CH/39	Aqua check Strips for fluoride	HACH company of (USA) For the Analysis of Water	1000 Strips		
S&WAL/CH/40	Aqua check Strips for Hardness	HACH company of (USA) For the Analysis Of Water	1000 Strips		
S&WAL/CH/41	Aqua check Strips for pH	HACH company of (USA) For the Analysis Of Water	1000		
S&WAL/CH/42	Sodium Bi-Carbonate Salt	Pure Salt for Analytical Purpose.	1 kg		
S&WAL/CH/43	Calcium Carbide CaC ₂	Granular form 1-2mm, high purity, used for lab purpose.	20 kg		
S&WAL/CH/43	NaCO ₃ Sodium Carbonate	99% Pure Salt	2 kg		
S&WAL/CH/44	Igepal CA-630 (C ₂ H ₄ O) _n C ₁₄ H ₂₂ O	Non-ionic, for molecular biology/chemistry. In liquid form. Foreign Activity: DNase and RNase, none detected,	5 liters		
S&WAL/CH/45	Copper sulfate (CuSO ₄)	Pure salt	2 Kg		

Glassware:

ITEM CODE #	Item	Specifications	Qty	Rate	Amount
S&WAL/ GW/01	Beakers	Made of borosilicate, Pyrex. Having sizes of 10, 20, 50, 100, 250, 500 and 1000 ml.	5 dozen of each, Except 10 & 20ml needed in 2 dozen quantity.		
S&WAL/ GW/02	Conical flask (Long Neck)	Made of borosilicate, Pyrex. Having sizes of 10, 20, 50, 100, 250, 500 and Note: 1000 ml conical flasks need only Two dozen. Flat bottom.	3 dozen of each. While Five dozen of 500ml.		
S&WAL/ GW/03	Petri dishes	Small, medium and large. i.e: 100x15mm & 200x30mm with cover.	5 dozen of each.		
S&WAL/ GW/04	Pipettes	Having sizes of 0.1 ml, 0.5, 1, 2, 5 and 10 ml.	1 dozen of each.		
S&WAL/ GW/05	Pipette suckers	For the following size pipettes i.e. 0.1, 0.5, 1, 2, 5 and 10 ml.	1 dozen of each.		
S&WAL/ GW/06	Graduated measuring cylinders	Made of borosilicate, Pyrex. Having sizes of 10, 25, 50, 100, 500 and 1000 ml.	5 dozen of each,		
S&WAL/ GW/07	Test tubes with caps and Caps.	Made of borosilicate, Pyrex. Having sizes of 5, 10, 20 and 50 ml. for handling chemicals and samples	20 Dozen of each		
S&WAL/ GW/08	Plastic washing bottles	250 and 500ml.	2 dozen of each		
S&WAL/ GW/09	Reagent bottles	Of 100, 250, 500ml with lids. White in color, made of borosilicate (Pyrex)	5 dozen of each.		
S&WAL/ GW/10	Spatula	Made of stainless steel and galvanized of small, medium and large size. 9, 10 and 15 inches in Length.	1 dozen of each. Half of each quantity Should be in Amber.		
S&WAL/ GW/11	Filter papers	Whatman 40 and 42 micron, pore size: 8 μ m, thickness 210 μ m, flow rate and porosity medium, format circle.	10 dozen of each.		
S&WAL/ GW/12	Aspirator bottle	Borosilicate glass aspirator bottle with bottom hose connection, in brown color. For Stock solution, 1000 & 2500ml.	5 dozen of each. Half of both each Should be in Amber Color		
S&WAL/ GW/13	Burette support stand	1. Iron or steel Burette stand. 2. Wooden burette stand.	3 of each		
S&WAL/ GW/14	Titration burettes	Made of borosilicate, Pyrex. With glass knob (Made in Germany). Having sizes of 50, &100.	2 dozen of each		

ITEM CODE #	Item	Specifications	Qty	Rate	Amount
S&WAL/ GW/15	Cylindrical (Holders) for tubes.	Cylindrical of different sizes for the holding of tubes and vials of different sizes i.e: 10, 15, 20, 25, 50 and 100 and 250ml.	3 of each Size		
S&WAL/ GW/16	Lab spoon	Lab Spoons of different sizes i.e: 0.5, 1, 2, 3, 5, 10 and 25grams made of stainless steel.	2 dozen of each		
S&WAL/ GW/17	Porcelain crucibles with lid	Of large, medium and small size i.e: 10, 20, 30, 50, 100 & 250 ml. Can bear Temperature up to 1000 to 3000 centigrade.	4 dozen of each		
S&WAL/ GW/18	Crucible tongs	For the holding of crucibles of different sizes i.e: Large, Medium and Small.	6 of each		
S&WAL/ GW/19	Mortar with spout pestles glazed	Of Large, Medium and small size. i.e. 100mm, 250 & 500mm. Made of ceramics.	3 of each		
S&WAL/ GW/20	Laboratory porcelain ignition dishes pectangular glazed	Can bear temperature up to 1000 °C, made of porcelain, in different Sizes i.e: Large 150*250*50mm. W*L*H, medium 125*200*50mm. W*L*H, and Small: 120*120*50mm.W*L*H	2 dozen of each		
S&WAL/ GW/21	Masks	Dust and fume masks (Blue and Green color)	1 dozen boxes of each.		
S&WAL/ GW/22	Hand gloves	Disposable Blue in color and Rubber gloves	1 dozen boxes (Disposable) and 2 dozen rubber gloves (Anti strong Acids Alkalis).		
S&WAL/ GW/23	Aprons	Medium and large size.	2 dozen of each		
S&WAL/ GW/24	Lab goggles	Use in lab for safety measures, made of good quality Plastic material long lasting.	6 pairs		
S&WAL/ GW/25	First aid box	For laboratory. Medicine OR Material Should be as mentioned in Safety Data Sheet.	01		
S&WAL/ GW/26	Funnels	Made of borosilicate, having different sizes i.e: 25, 50 & 75ml.	2 dozen of each		
S&WAL/ GW/27	Distillation assembly	For sample extraction. Made of Glass and Plastic.	3 in quantity		

ITEM CODE #	Item	Specifications	Qty	Rate	Amount
S&WAL/ GW/28	Bottle Wash brushes	For washing Laboratory glass wares of different sizes. Small, medium and large.	1 dozen		
S&WAL/ GW/29	Hot plate with magnetic Stirrer	For dissolution of chemicals having dimensions	2		
S&WAL/ GW/30	Plastic jug	500, 1000 and 2000 ml. Graduated	6 of each		
S&WAL/ GW/31	Dust bins	Partitioned for Broken glass, Plastic, Papers and for dust.	06 in quantity		
S&WAL/ GW/32	Aluminum file	Rolls	02 dozen.		
S&WAL/ GW/33	Zip locks polyethylene bags	Of small medium and large size, ¼, ½, 1 and 2kg plastic bags with zip locks.	5 kg of each		
S&WAL/ GW/34	Indicators bottle with droppers	50 and 100 & 500ml.	5 dozen of each		
S&WAL/ GW/35	Micro pipettes/Micro syringes	2ml to 20µl, 5ml to 50 µl, 10ml to 100 µl and 100ml to 1000 µl.	3 of each		
S&WAL/ GW/36	Tissue rolls	White & Pink	10 dozen		
S&WAL/ GW/37	Plastic Vials (Sterilized)	Of 25, 50, 100, 250, 500ml for Extract or sample storage or handling.	10 dozen of each		
S&WAL/ GW/38	Vacuum forceps	For handling test tube and Beaker at hotplate or digester, of two sizes Medium & large.	6 of each		
S&WAL/ GW/39	Graduated Bucket	For measuring water volume, of 5, 10, 20, 40 and of 50 liters. Made of good quality, plastic.	3 of each.		
S&WAL/ GW/40	Inoculating Needles	Needles with 5 and 10mm wire loop, wire loop made of platinum or nichrome.	6 of each		
S&WAL/ GW/41	Colony counter	For counting bacterial cells	2 in quantity		
S&WAL/ GW/42	Droppers	Graduated droppers 1, 2, 5, 10 and 25ml	6 of each		
S&WAL/ GW/43	Glass vials	Made of good quality glass of different sizes i.e: 5 ml, 10, 20, 50 and 100 ml with caps.	5 dozen		
S&WAL/ GW/44	Pipette Filler	Made of non-reactive plastic material. (Non-reactive with Acid & Alkali)	5 dozen		
S&WAL/ GW/45	Aluminum weigh boat	Made of Aluminum 2,4 & 6 inch dia	10 dozen		
S&WAL/ GW/46	Stirring rod	Rod made of glass	2 dozens		
S&WAL/ GW/47	Stirrer	Use to stir soil suspension, in 100, 500 and 1000ml Graduated Cylinders and for beakers. Note: Made of Stainless steel.	3 of each		
S&WAL/ GW/48	Buchner funnels	Made of porcelain, having sizes 50, 70 and 100mm.	3 dozens of each.		
S&WAL/ GW/49	Watch glass	For covering 250, 500 and 1000 ml beakers, having dia sizes of 50mm,75, 100 and 125mm dia.	5 dozens of each		

ITEM CODE #	Item	Specifications	Qty	Rate	Amount
S&WAL/ GW/50	Spade	Made of stainless steel, size 200mm width, 280mm height.	02		
S&WAL/ GW/51	Shovel	Made of stainless steel, size 200mm width, 280mm height.	02		
S&WAL/ GW/52	Measuring Tape	100 meters	02		
S&WAL/ GW/53	Pycno-meter	Useful to determine specific gravity of clays, sand and gravel of size smaller than 10 mm Comprises a 1 kg glass jar with brass cone, locking ring and rubber seal. Spare: Rubber seal	06		
S&WAL/ GW/54	Conical flask	Made of borosilicate, Pyrex. Having sizes of 50, 100, 250, 500 and Note: 1000 ml conical flasks need only Two dozen. Flat bottom.	5 dozens of Each. While 50 and 1000 ml conical flasks need only 2 dozens.		
S&WAL/ GW/55	Ash less Filter Paper	Circle, Diam. 70 and 100mm. (Whatman-US)	5 dozens Pack of 100		
S&WAL/ GW/56	Crucibles	Made of Aluminum Ceramic, with the Capacity of 5, 10, 25, 50, 75 and 100ml.	5 dozens of each		
S&WAL/ GW/57	Thermometers	For Measuring Water Extract Temp. In Lab. Size 18 inches. (filled with red color mercury)	2 dozens		
S&WAL/ GW/58	Soil Hydrometer	Specific Gravity 68°/68°, ASTM Soil Hydrometer-151H.	2 dozen		
S&WAL/ GW/59	Full Face Respirator	Protect against multiple contaminants, Reuse able, Long lasting, A twin gas and vapors filter fitted directly onto the respirator, very low breathing resistance.	1 Dozen		
S&WAL/ GW/60	Eye Shields	Safety Eye shields, anti-scratch and anti-mist coated clear lenses.	5 five dozens		
S&WAL/ GW/61	Hand Gloves (Reusable)	Rough gloves with superb chemical Resistance.	10 dozens		
S&WAL/ GW/62	Narrow Neck Aspirator Bottles	Made of plastic, with cap and Handle on the top. Having 3, 5 and 10L capacity.	6 of each		
S&WAL/ GW/63	Glassware Drying Rack	Drying Rack at least 60-70 glassware holding points.	3 in quantity		
S&WAL/ GW/64	Mechanical Pipette controller	For holding pipette and for measuring accurate amount of solution	6 in quantity		
S&WAL/ GW/65	Bottle Top Dispensers	A Graduated Manual bottle top dispensers for glass bottles, which can pipette 10, 25, 50 and 100ml Acid Or base solution from 1, 2, 5 liter glass bottle, B. Graduated Automated bottle top for glass bottles, which can pipette 10, 25, 50 and 100ml Acid Or base solution from 1, 2, 5 liter glass bottle	6 of each quantity		

**➤ Procurement of Equipment, Chemical,
Glassware & General Laboratory Supplies of
Advanced Water & Waste Water Quality
Control Laboratory at USPCAS-W, MUET,
JAMSHORO**

ITEM CODE

AW&WQCL/EQ

AW&WQCL/CH

AW&WQCL/GW

AW&WQCL/GLS

Lab Equipment:

ITEM CODE #	Item	Specifications	Quantity	Rate	Amount
AW&WQ CL/EQ/01	Blender	Capacity: 1 Liter/1.2 Liter, Switch Settings: Two Speed, 60 Second Mechanical Timer Base: Epoxy Coated Motor Housing Container: Stainless steel with handle and two piece vinyl and styrene lid. Heat resistant glass with handle and two piece vinyl and styrene lid. Overall Height: 15 inches/16 inches.	4		
AW&WQ CL/EQ/02	Block heater dry with temperature control	Holds interchangeable modular blocks Uniform temperature control. heating range ambient + 5°C to 130°C (all three QBD models) or ambient + 5°C to 200°C (QBH2), rapid heat-up time, stability and uniformity $\pm 0.1^{\circ}\text{C}$, integral timer function optional external probe for in-sample or in-block temperature control robust, compact, contemporary design, block extraction tool included as standard, for easy and safe removal of blocks.	2		
AW&WQ CL/EQ/03	Digital Thermometer	With digital display.	10		
AW&WQ CL/EQ/04	Desiccator	Cabinet type with trays inside (medium & large size)	1 of each		
AW&WQ CL/EQ/05	Magnetic Hot plate with stirrer	Excellent temperature uniformity with consistent stirring at all speeds. Separate digital display.chemically resistant housing.includes external RTD temperature probe kit. Max string capacity 2500-6000 H2O. Speed range: 60-1600 /min, speed stability $\pm 2\%$, temperature range: ambient + 5-400, temperature stability : $\pm 1\%$. Accessories: spare temperature probe, 200 mm stain less steel. Replacement probe kit, 200 mm, and stainless steel.	10		
AW&WQ CL/EQ/06	Microwave	Capacity: 42 liters, dimensions: 553 Wx 470 Dx 326 H, unit with programmable power (minimum 545 W) to within ± 10 W of required power, having a corrosion-resistant, well-ventilated cavity and having all electronics protected against corrosion for safe operation. With a minimum speed of 3 rpm to insure homogeneous distribution of microwave radiation.	1		
AW&WQ CL/EQ/07	Quartz hemispherical heating mantle	Digital Display Temperature constant Heating Mantle, 1 L ,5 L	5		
AW&WQ CL/EQ/08	Vacuum pump	34 L/min pumping speed, pressure guage reads from 0-100 psig. Vacuum guage reads from 0-25" Hg . separate pressure regulating valves. two serrated hose connections for 3/8" I. (9.5 mm) tubing , handle, 3-wire cord with nline switch and plug . pump is mounted on four rubber feet. Dimensions, 10 1/2 Lx5 7/8 W, 11 1/4 " H.	5		

ITEM CODE #	Item	Specifications	Quantity	Rate	Amount
AW&WQ CL/EQ/09	Filtration Apparatus	Complete Assembly and extra glassware for TSS analysis	5		
AW&WQ CL/EQ/10	Ampule sealer machine	Automatically seals 20 ampules in 5 minutes. Each ampule rotated into flame to form a perfect hemispherical seal. with flame sealing torch. Fuel requirement: bottled propane or natural gas. Commercial grade with regulator to deliver 0-50 psi (0-0.34 MPa) . Includes one carousel rack (racks hold twenty 2,5,10,50 ml ampoules) with stainless-steel base plate and two tiered polypropylene plates with ampule openings. Dimension: 1/6 1/2 Lx8Wx16" H. 100 V 50/60Hz,200 w. With trimmed stem and short stem ampules of size (1,2,5,10 & 20 ml). with disposable ampule opener (1-4 ml & 5-10 ml).	2		
AW&WQ CL/EQ/11	Multi-purpose vortexing unit Vortexer	ABS body with vibration-dampering feet, Continuous mixing or by pressure, Mix several types of tubes simultaneously without swapping mixing heads.	1		
AW&WQ CL/EQ/12	PCR Thermal cycler with 96 wells	Capacity: 1 x 96-well plate, 96 x 0.1 ml tubes Comments: Fast 0.1 ml format and sample block enabled to run fast chemistry, Blocks: 25 °C (5 °C Zone-to-Zone) Dimensions: Height: 24.5cm (9.6 in.), Width: 23.7 cm (9.3 in.), Depth: 48.5 cm (19.1 in.) Display Interface: 6.5 in. VGA 32k color with touch screen Format: 0.1 ml tubes, 96-well plate High Throughput Compatibility: High Throughput-Compatible Instrument Memory: USB and On-board Peak Block Ramp Rate: 5.0°C/sec Product Size: 1 instrument Program Features: Auto re-start (after power outages), Program overwrite protection Reaction Speed: Fast, Standard Reaction Volume Range: 10-30 µl Sample Ramp Rate: ± 4.25°C/sec Temperature Accuracy: ±0.25°C (35°C to 99.9°C) Temperature Range (Metric): 4.0-99.9 °C Temperature Uniformity: <0.5 °C (20 sec after reaching 95 °C) Tm Calculator: Menu driven through touch screen, Weight: 11.4 kg (25 lb).	1		
AW&WQ CL/EQ/13	Automated Colony Counter with CPU	Specifications Camera specifications Megapixels: 17.9 Interface: USB System specifications Lighting:Epi white, Trans-illumination white, Epi blue, Darkfield	1		

ITEM CODE #	Item	Specifications	Quantity	Rate	Amount
		Filter: Two positions Dimensions: Physical: 13W x 12.5D x 17.5H in. (343 x 318 x 445mm) Shipping: 22.5W x 12.25D x 19.75 in. Weight:Actual: 20 lbs. Shipping: 27 lbs Software: UVP's software requires Microsoft Windows 8, Windows 7 or Vista (32-bit or 64-bit).			
AW&WQ CL/EQ/14	UV VIS Spectrophotometer with RFID Technology	Data Logger:5000 data points (result, date, time, sample-ID, user-ID) Dimensions (HxWxD):215 mm x 500 mm x 460 mm Display:TFT 7 inch WVGA color touch Enclosure Rating: IP20 with closed lid Includes:1 x Power Cord (US, EU) 1x Universal-Adapter 1x Dust Cover Matched pair of 1 inch glass sample cells(2) Interfaces:USB type A (2), USB type B, Ethernet, RFID module Length:460 mm Operating Conditions:10 - 40 °C, max. 80% relative humidity (non-condensing) Operating Mode: Transmittance (%), absorbance and concentration (wavelength, time) Optical System: Reference beam, spectral Photometric Accuracy:5 mAbs @ 0.0 - 0.5 Abs <1% @ 0.5 - 2.0 Abs @ 546 nm Photometric Linearity:0.005 - 2 Abs ≤ 0.01 at > 2 Abs with neutral glass at 546 nm Photometric Measuring Range: ± 3 Abs Power Requirements:100 - 240 V; 50/60 Hz Preprogrammed Methods:> 240 Sample Cell Compatibility: Rectangular: 10, 20, 30, 50 mm, 1 inch; round: 13 mm, 16 mm, 1 inch Optional 100 mm rectangular cell with additional adapter Scanning Speed:900 nm/min (in 1 nm steps) Specific Technology: RFID for easy method update, sample ID and Certificate of Analysis Spectral Bandwidth:2 nm Storage Conditions: -25 to 60 °C / max. 80% relative humidity (non-condensing) Stray Light:KI-solution at 220 nm < 3.3 Abs/ < 0.05% User Programs:200 Warranty:1 year Wavelength Accuracy: ± 1 nm Wavelength Range:190 - 1100 nm Wavelength Reproducibility:< 0.1 nm Wavelength Resolution:0.1 nm	1		

ITEM CODE #	Item	Specifications	Quantity	Rate	Amount
		Wavelength Selection: Automatic, based on method selection Weight: 11 kg			
AW&WQ CL/EQ/15	Chlorine Comparator (DPD Method)	Chlorine Comparator, DPD Method with reagent for 100 tests.	2		

Chemical:

ITEM CODE #	Item	Specifications	Quantity	Rate	Amount
AW&W QCL/CH /01	ATU Allylthiourea (C ₄ H ₈ N ₂ S)	Density: 1.11 g/mL at 25 °C (lit.). Assay: 98%	250 g		
AW&W QCL/CH /02	Anhydrous Potassium Borate (BK ₃ O ₃)	Assay: 99%	250 g		
AW&W QCL/CH /03	Ammonium ferrous sulphate (NH ₄)Fe(SO ₄) ₂ ·6H ₂ O	Grade: ACS reagent, Assay: 99 %	1 Kg		
AW&W QCL/CH /04	Ammonium hydroxide (NH ₄ OH)	Grade: Analytical Grade Assay: 99%	2.5 L		
AW&W QCL/CH /05	4-Aminoantipyrine (C ₁₁ H ₁₃ N ₃ O)	Grade: Analytical Grade Assay: ≥98.0%	500 g		
AW&W QCL/CH /06	Aluminum potassium sulfate (AlK(SO ₄) ₂ ·12H ₂ O)	Grade: ACS Reagent Assay: ≥98%	1 Kg		
AW&W QCL/CH /07	Aluminum ammonium sulfate (AlNH ₄ (SO ₄) ₂ ·12H ₂ O)	Grade : Reagent Grade Assay: ≥99%	1 kg		
AW&W QCL/CH /08	Anhydrous Sodium Fluoride (NaF)	Grade: ACS reagent Assay: ≥99%	1kg		
AW&W QCL/CH /09	Aluminum chloride (AlCl ₃ ·6H ₂ O)	Grade: reagent grade Assay: 98%	1kg		
AW&W QCL/CH /10	Acetone (CH ₃ COCH ₃)	Grade: analytical Assay:99% pure	2.5 L		
AW&W QCL/CH /11	Anhydrous DPD sulfate ((C ₂ H ₅) ₂ NC ₆ H ₄ N H ₂ · H ₂ SO ₄)	Assay: ≥98.0% (T)	1 Kg		
AW&W QCL/CH /12	Anhydrous Sodium Acetate (NaC ₂ H ₃ O ₂)	Grade: Analytical grade Assay: >99%	1 Kg		
AW&W QCL/CH /13	Ammonium Acetate (NH ₄ C ₂ H ₃ O ₂)	Grade: Reagent grade Assay: 99%	1 Kg		
AW&W QCL/CH /14	Ammonium Persulfate ((NH ₄) ₂ S ₂ O ₈)	Grade : Reagent Grade Assay : 98%	1 Kg		
AW&W QCL/CH /15	Acetic acid 100%	pH 2.5 (50 g/l, H ₂ O, 20 °C)	2.5 L		
AW&W QCL/CH /16	Ammonium Chloride	Grade:analytical grade Assay : 99%	1 kg		
AW&W QCL/CH /17	Barium diphenylamine sulfonate (C ₁₂ H ₁₀ NO ₃ S) ₂ Ba	Assay: 95%-99%	50 g		
AW&W QCL/CH /18	Boric acid (H ₃ BO ₃)	Grade: Analytical Grade Assay: 99% pure	2.5 L		

ITEM CODE #	Item	Specifications	Quantity	Rate	Amount
AW&W QCL/CH /19	Barium chloride (BaCl ₂ .2H ₂ O)	Assay: 99.9% trace metals basis Form: powder	1 kg		
AW&W QCL/CH /20	Brucine sulphate hydrate (C ₄₆ H ₅₄ N ₄ O ₁₂ S)	Grade: Analytical Grade Assay: 99%	25 g		
AW&W QCL/CH /21	Bromphenol blue (C ₁₉ H ₁₀ Br ₄ O ₅ S)	Grade: Analytical Grade Assay: 99%	25 g		
AW&W QCL/CH /22	Cadmium sulphate (CdO ₄ S)	Grade: Analytical Reagent Grade Form: solid form Assay: 99.9%	100 g x2		
AW&W QCL/CH /23	Calcium Chloride Dehydrate (CaCl ₂ . 2H ₂ O)	Grade: ACS reagent Assay: 99%	1 Kg		
AW&W QCL/CH /24	CDTA(Cyclohexyle nediaminetetraaceti c acid) C ₁₄ H ₂₂ N ₂ O ₈	Grade: ACS reagent Assay: 98 %	500g		
AW&W QCL/CH /25	Cupferron (C ₆ H ₅ N(NO)ONH ₄)	Grade: reagent grade Assay: 97%	100 g		
AW&W QCL/CH /26	Cyclohexane (C ₆ H ₁₂)	Grade: anhydrous Assay: 99.5 %	1 L		
AW&W QCL/CH /27	Diaminonaphthalen e (DAN) C ₁₀ H ₆ (NH ₂) ₂	Assay : 97%	500 g		
AW&W QCL/CH /28	Di-isopropyl (C ₆ H ₁₄ O)	Grade: puriss, p.a Assay: ≥98.5%	1 L		
AW&W QCL/CH /29	DPD oxalate (CH ₃) ₂ NC ₆ H ₄ NH ₂]2·H ₂ C ₂ O ₄	Assay: 98%	25 g		
AW&W QCL/CH /30	Diphenylcarbazine (1,5- diphenylcarbohydr azide) C ₁₃ H ₁₄ N ₄ O	Grade: reagent grade Assay: ≥99%	100 g		
AW&W QCL/CH /31	Diammonium hydrogen phosphate ((NH ₄) ₂ HPO ₄)	Grade: Analytical Reagent grade Assay: 98-99.0%	1 Kg		
AW&W QCL/CH /32	Di-Sodium hydrogen phosphate heptahydrate	Grade: Analytical grade Assay 99%	1 Kg		
AW&W QCL/CH /33	Dextrin white	Grade: Analytical grade Assay 99%	1 Kg		
AW&W QCL/CH /34	DPD tablets	Grade: Analytical reagent Assay: 99.0%	100 g		
AW&W QCL/CH /35	Ethyl alcohol (C ₂ H ₆ O)	Assay: 98-99%	2 L x 3		
AW&W QCL/CH /36	Ethylene diamine tatra acetic acid (EDTA)	Grade: Anhydrous Assay: ≥98%	1 Kg		
AW&W QCL/CH /37	EMB Agar	Grade: for microbiology	2x500 g		
AW&W QCL/CH /38	Erichrome black-T (EBT)	Grade: Analytical grade Assay: 99%	25 g		

ITEM CODE #	Item	Specifications	Quantity	Rate	Amount
AW&W QCL/CH /39	Ferric sulphate Hexahydrate (FeSO ₄ ·6H ₂ O)	Assay: 97%	500 g		
AW&W QCL/CH /40	Glacial acetic acid (CH ₃ COOH)	Grade: Analytical Reagent Grade Assay: 99.9 %	3X1.5ML		
AW&W QCL/CH /41	Glucose monohydrate	Grade: analytical grade Assay: 99.9 %	1 Kg x 10		
AW&W QCL/CH /42	Hydrochloric acid (HCl)	Grade: reagent grade Assay: 99% Concentration: 37%	2.5 L x 3		
AW&W QCL/CH /43	Hydrogen peroxide (H ₂ O ₂)	Grade: ACS reagent Assay: 99%	1 L		
AW&W QCL/CH /44	Hydroxylamine hydrochloride (NH ₂ OH·HCl)	Grade: ACS reagent Assay: 98.0%	1 Kg		
AW&W QCL/CH /45	Iron (II) sulphate anhydrous (FeSO ₄)	Grade: Analytical Grade Assay: 99.0%	1 Kg		
AW&W QCL/CH /46	Iron(III) Chloride Hexahydrate (FeCl ₂ ·6H ₂ O)	Grade :ACS reagent Assay: 97%	1 Kg		
AW&W QCL/CH /47	Isopropyl alcohol (C ₃ H ₈ O)	Grade: Analytical Grade Assay: ≥ 98%	1 Kg		
AW&W QCL/CH /48	Isopropyl Ether (C ₆ H ₁₄ O)	Grade: analytical standard Assay: ≥99.7% (GC)	1 L		
AW&W QCL/CH /49	Lead carbonate, (PbCO ₃)	Grade: analytical standard Assay: ≥99.99%	1 Kg		
AW&W QCL/CH /50	Lead (II) nitrate	Grade: ACS reagent Assay: ≥99.0%	500 g		
AW&W QCL/CH /51	L-Glutamic acid	Grade: reagent plus Assay: ≥99% (HPLC)	25 g		
AW&W QCL/CH /52	Magnesium Sulfate Hepta Hydrate (H ₁₄ MgO ₁₁ S)	Grade: ACS grade Assay : ≥98%	1 Kg		
AW&W QCL/CH /53	Magnesium sulfate (MgSO ₄)	Grade: anhydrous reagent grade Assay: ≥97%	1 Kg		
AW&W QCL/CH /54	Methyl-tert-butyl ether (MTBE) C ₅ H ₁₂ O	Grade: anhydrous Assay: 99.8%	10 g x 3		
AW&W QCL/CH /55	Methylene chloride (CH ₂ Cl ₂)	Grade: Analytical Reagent Grade Assay: 99%	2.5 L		
AW&W QCL/CH /56	3-Methyl, 2- benzothiazolone hydrazone Hydrochloride (C ₈ H ₉ N ₃ S · HCl · H ₂ O)	Grade: Analytical grade Assay: ≥99.0%	1 L		
AW&W QCL/CH /57	Magnesium chloride (MgCl ₂ · 6H ₂ O)	Grade: anhydrous Assay: ≥98%	1 Kg		

ITEM CODE #	Item	Specifications	Quantity	Rate	Amount
AW&W QCL/CH /58	Methylene blue (C ₁₆ H ₁₈ ClN ₃ S · xH ₂ O)	Grade: Analytical grade Assay: ≥99.0%	1 Kg		
AW&W QCL/CH /59	Methanol (CH ₃ OH)	Grade: HPLC grade Assay: ≥99.9%	2.5 L *3		
AW&W QCL/CH /60	Methyl red indicator (C ₁₅ H ₁₅ N ₃ O ₂)	Grade: ACS, Reag. Assay: 99 %	500 g		
AW&W QCL/CH /61	Methyl red sodium salt (C ₁₅ H ₁₄ N ₃ NaO ₂)	Grade: ACS reagent Assay: 99 %	25 g		
AW&W QCL/CH /62	Mercuric sulphate (HgO ₄ S)	Grade: ACS reagent Assay: ≥99%	100 g		
AW&W QCL/CH /63	Mercury (III) Chloride (HgCl ₂)	Grade: ACS reagent Assay: ≥99.5%	500 g		
AW&W QCL/CH /64	Murexide (C ₈ H ₁₀ N ₆ O ₇)	Grade: ACS reagent Assay: 99 %	500 g		
AW&W QCL/CH /65	Manganese (Mn)	Grade: Analytical standards Assay: ≥99.9%	100 g		
AW&W QCL/CH /66	Methyl orange	Grade: ACS reagent Assay: 99 %	25 g		
AW&W QCL/CH /67	N,N-dimethyl-p- phenylenediamine oxalate ((CH ₃) ₂ NC ₆ H ₄ NH ₂) ₂ ·H ₂ C ₂ O ₄)	Grade: Analytical grade Assay: 98%	25 g		
AW&W QCL/CH /68	6-Naphthalene disulfonate (C ₁₀ H ₈ O ₆ S ₂)	Grade: Analytical grade Assay :97%	500 g		
AW&W QCL/CH /69	n-Hexane (C ₆ H ₁₄)	Grade: Analytical Grade Assay:99%	2.5 L		
AW&W QCL/CH /70	Nitric acid 65%	Grade: Reagent Grade Assay: 65 %	1 L		
AW&W QCL/CH /71	Oxalic Acid Sodium Salt (Na ₂ C ₂ O ₄)	Grade: Analytical Grade Assay: 99 %	500 g		
AW&W QCL/CH /72	Potassium Hydrogen Phosphate (K ₂ HPO ₄)	Grade: Analytical Grade Assay :≥ 99.0 %	1 kg		
AW&W QCL/CH /73	Phosphoric acid (H ₃ PO ₄)	Grade: Analytical Grade Assay: 99.0%	1 kg		
AW&W QCL/CH /74	Phenol (C ₆ H ₆ O)	Grade: ACS reagent Assay: 99.%	500 g		
AW&W QCL/CH /75	Potassium Ferricyanide (K ₃ Fe(CN) ₆)	Grade: Analytical Grade Assay: 99%	250 g		
AW&W QCL/CH /76	p- dimethylaminobenz alrhodanine (C ₁₂ H ₁₂ N ₂ OS ₂)	Grade: Analytical Grade Assay: 97%	10 g		

ITEM CODE #	Item	Specifications	Quantity	Rate	Amount
AW&W QCL/CH /77	Potassium nitrate (KNO ₃)	Grade: Analytical Grade Assay: ≥99.0%	1 Kg		
AW&W QCL/CH /78	Potassium Permanganate (KMnO ₄)	Grade: ACS reagent Assay: ≥99.0%	1 Kg		
AW&W QCL/CH /79	Potassium iodide (KI)	Grade: ACS reagent, anhydrous Assay: ≥99%	1 Kg		
AW&W QCL/CH /80	Potassium Iodate (KIO ₃)	Grade: reagent grade Assay: ≥98%	500 g		
AW&W QCL/CH /81	Potassium Cyanide (KCN)	Grade: ACS reagent Assay: ≥97.0%	1 Kg		
AW&W QCL/CH /82	Potassium dihydrogen phosphate	Grade: analytical grade Assay: ≥99.0%	1 kg		
AW&W QCL/CH /83	Potassium dichromate	Grade: ACS grade Assay: ≥99.0%	1 kg		
AW&W QCL/CH /84	Potassium Sulphate	Grade: Analytical Grade Assay: ≥99.0%	1 kg		
AW&W QCL/CH /85	Potassium hydrogen phthalate C ₈ H ₅ KO ₄	Grade: reagent grade Assay: ≥ 99.5 %	1 kg		
AW&W QCL/CH /86	Potassium hydroxide	Grade: analytical grade Assay: ≥99.0%	500 g		
AW&W QCL/CH /87	Potassium chromate	Grade: ACS reagent Assay: ≥99.0%	500 g		
AW&W QCL/CH /88	Phenolphthalein	Grade: indicator Assay: ≥ 99.0 %	100 g		
AW&W QCL/CH /89	1-10 phenathrolin mono hydrate	Grade: Analytical Grade Assay: ≥ 99.0 %	25 g		
AW&W QCL/CH /90	Sodium Monohydrate Phosphate Heptahydrate (Na ₂ HPO ₄ .7H ₂ O)	Grade: ACS reagent Assay: ≥98%	1 kg		
AW&W QCL/CH /91	Sodium Sulfito (Na ₂ SO ₃)	Grade: Analytical Grade Assay: ≥98%	1 kg		
AW&W QCL/CH /92	Mercuric Nitrate (Hg(NO ₃) ₂)	Grade: ACS reagent Assay: ≥98.0%	1 kg		
AW&W QCL/CH /93	SPADNS) C ₁₆ H ₉ N ₂ Na ₃ O ₁₁ S 3)	Grade: Analytical Grade Assay: ≥80%	50g *4		
AW&W QCL/CH /94	Sodium arsenite, (NaAsO ₂)	Grade: Analytical Grade Assay: ≥90%	1 kg		
AW&W QCL/CH /95	Sodium phosphate (NaH ₂ PO ₄ .H ₂ O)	Grade: Analytical Grade Assay: 96%	2.5 Kg		
AW&W QCL/CH /96	Sodium acetate (CH ₃ COONa.3H ₂ O)	Grade: Analytical Grade Assay: >99%	1 kg x20		

ITEM CODE #	Item	Specifications	Quantity	Rate	Amount
AW&W QCL/CH /97	Sodium tetraborate (Na ₂ B ₄ O ₇)	Grade: Analytical Grade Assay: >99%	500 g		
AW&W QCL/CH /98	Sodium Nitrite (NaNO ₂)	Grade: ACS reagent Assay: ≥97.0%	1 kg		
AW&W QCL/CH /99	Sodium carbonate (Na ₂ CO ₃)	Grade: Analytical Grade Assay: >99%	1 kg x5		
AW&W QCL/CH /100	Sodium Citrate Dihydrate (Na ₃ C ₆ H ₅ O ₇ ·2H ₂ O)	Grade: Analytical Grade Assay: ≥99%	1 Kg x2		
AW&W QCL/CH /101	Sodium Selenite (Na ₂ SeO ₃)	Grade: Analytical Grade Assay: >99%	1 kg		
AW&W QCL/CH /102	Silver Sulphate (Ag ₂ O ₄ S)	Grade: Analytical Grade Assay: >99%	50 g x2		
AW&W QCL/CH /103	Sodium Ascorbate (C ₆ H ₇ NaO ₆)	Grade: Analytical Grade Assay: 99.5%	1 Kg		
AW&W QCL/CH /104	Starch	Grade: ACS reagent Assay: 99%	500 g x2		
AW&W QCL/CH /105	Sodium hydroxide pellets	Grade: analytical grade Assay: ≥99%	1 kg		
AW&W QCL/CH /106	Salicylic acid	Grade: ACS reagent Assay: ≥99.0%	1 kg		
AW&W QCL/CH /107	Sodium azide	Grade: Analytical Grade Assay: ≥99.5%	500 g		
AW&W QCL/CH /108	Sodium chloride	Grade: ACS reagent Assay: ≥99%	1 kg x3		
AW&W QCL/CH /109	Sodium sulfate Anhydrous	Grade: analytical grade Assay: 99%	1 kg x3		
AW&W QCL/CH /110	Sodium thio sulfate 5-hydrate Na ₂ S ₂ O ₃ ·5H ₂ O	Grade: analytical grade Assay: 97%	1 kg x2		
AW&W QCL/CH /111	Sulphamic acid	Grade: ACS reagent Assay: 99.3	1 kg		
AW&W QCL/CH /112	Sulphuric acid	Grade: analytical grade Assay: 99 %	2 L x 2		
AW&W QCL/CH /113	Sodium thio sulfate extra pure	Grade: analytical grade Assay: 97%	1 kg x 3		
AW&W QCL/CH /114	Sodium tetrahydridoborate	Grade: analytical grade Assay: ≥98.0%	100 g		
AW&W QCL/CH /115	Thioacetamide (CH ₃ CSNH ₂)	Grade: analytical grade Assay: 98%	500 g		

ITEM CODE #	Item	Specifications	Quantity	Rate	Amount
AW&W QCL/CH /116	Toluene (C ₆ H ₅ CH ₃)	Grade: anhydrous Assay: 99.8%	2.5 L x3		
AW&W QCL/CH /117	Xylene cyanol FF (C ₂₅ H ₂₇ N ₂ NaO ₆ S ₂)	Grade: analytical grade Assay: 98%	10 g		
AW&W QCL/CH /118	Zirconyl chloride octahydrate (ZrOCl ₂ ·8H ₂ O)	Grade: analytical grade Assay: 98%	500 g		
AW&W QCL/CH /119	Zinc acetate (Zn(C ₂ H ₃ O ₂) ₂ ·2H ₂ O)	Grade: analytical grade Assay: 99.99%	50 mg		
AW&W QCL/CH /120	Zincon (2-carboxy- 2'-hydroxy-5'- sulfoformazyl benzene) C ₂₀ H ₁₆ N ₄ NaO ₆ S · xNa	Grade: analytical grade Assay: 99 %	500 g		
AW&W QCL/CH /121	Tryptose	Grade: Analytical Grade Assay 99%,	500g		
AW&W QCL/CH /122	Dipotassium hydrogen phosphate	Grade: Analytical Grade Assay 99%,	500g x3		
AW&W QCL/CH /123	Potassium dihydrogen phosphate	Grade: Analytical Grade Assay :99 %	500g x3		
AW&W QCL/CH /124	Peptone	solubility H ₂ O: 2% clear, yellow Assay:99%	500g		
AW&W QCL/CH /125	Lactose	Grade: Analytical Grade Assay:99%	500g x2		
AW&W QCL/CH /126	Oxgall	Base Ingredients for Media, dried, Assay:99%	500g x 2		
AW&W QCL/CH /127	Brilliant green	Grade: Analytical Grade certified by the Biological Stain Commission, Composition: Dye content, ≥90%	500g		
AW&W QCL/CH /128	Proteose Peptone	Grade: Analytical Grade Assay:99%	500g x 2		
AW&W QCL/CH /129	Neutral red	Grade:Bio reagent, form: powder, composition:Dye content, ≥90%	500g		
AW&W QCL/CH /130	Bile Salts	Grade: Analytical Grade Assay:99%	500g		
AW&W QCL/CH /131	Trypticase	Grade: Analytical Grade Assay:≥99.0%	500 mL		
AW&W QCL/CH /132	4- Methylumbelliferyl- B-D- glucuronide(MUG)	Grade: Analytical Grade Assay:≥99.0%	500g		
AW&W QCL/CH /133	Gulatamic acid	Grade: Analytical Grade Assay:≥99%	1 L		

ITEM CODE #	Item	Specifications	Quantity	Rate	Amount
AW&W QCL/CH /134	Bromcresol green C ₂₁ H ₁₄ Br ₄ O ₅ S	Grade: Analytical Grade Assay:99%	250g		
AW&W QCL/CH /135	polyethylene glyco octylphenyl ether C ₁₈ H ₃₀ O ₃	Grade: Analytical Grade Assay:99%	250ml		
AW&W QCL/CH /136	P- Dimethylaminobenz aldehyde	Grade: ACS reagent Assay: 99%	500mL		
AW&W QCL/CH /137	Amyl alcohol	Grade: Analytical grade Shelf Life 24 month, assay:≥99%	1 L		
AW&W QCL/CH /138	yeast extract	Grade: Analytical Grade Assay: 99% Form:powder	1 Kg x 3		
AW&W QCL/CH /139	Inosital	Grade:Analytical Grade	500g		
AW&W QCL/CH /140	Aniline Blue	Grade: Analytical Grade Concentration:2.5% in 2% acetic acid	500 mL		
AW&W QCL/CH /141	Carbenicillin	Ready Made Solution, 100 mg/mL in ethanol/water, 0.2 µm filtered	1 L		
AW&W QCL/CH /142	Phenol red agar	BioReagent, form: powder, visual transition interval:6.8 - 8.2, yellow to red ,solubility:1 M NaOH: 1 mg/mL	500g		
AW&W QCL/CH /143	Adonitol	BioReagent, suitable for cell culture, Assay:99%	500g		
AW&W QCL/CH /144	A1 medium	Quality Level: PREMIUM, sterility: sterile-filtered, form: liquid ,suitability :suitable for cell culture, impurities :endotoxin, tested	1kg		
AW&W QCL/CH /145	Beaf extract	Powder for bacterial culture.	500 g		
AW&W QCL/CH /146	Glycerol solution	Grade: Analytical grade Assay: 89%	500 ml		
AW&W QCL/CH /147	CTAB (cetyltrimethyl ammonium bromide) C ₁₉ H ₄₂ BrN	Grade: Analytical grade Assay:99%	500 g		
AW&W QCL/CH /148	Isoamyl alcohol	Grade: Analytical grade Assay:≥98%	500 ml		
AW&W QCL/CH /149	Chloroform: Isoamyl alcohol 24:1	suitable for nucleic acid purification, contains: 0.6-1.0% ethanol as stabilizer	500 ml		
AW&W QCL/CH /150	polyvinylpyrrolidone	Average mol wt 40,000, Powder, for DNA extraction	100 g		
AW&W QCL/CH /151	b-mercaptoethanol	Molecular biology grade, Assay= ≥99.0%	10 ml		
AW&W QCL/CH /152	RNase A	10 mg/mL	2 vials		

ITEM CODE #	Item	Specifications	Quantity	Rate	Amount
AW&W QCL/CH /153	Proteinase K	Form: lyophilized powder	100 mg		
AW&W QCL/CH /154	PCR master mix	Cloning, Gene expression, ready-to-use, 2x concentrated master mix	1 kit		
AW&W QCL/CH /155	PCR Clean-up Kit	Removes primers, primer-dimers, nucleotides, salts and polymerase	1 kit		
AW&W QCL/CH /156	PCR grade water (Nuclease free water)	Purified, double-distilled, deionized, and autoclaved.	1 L		
AW&W QCL/CH /157	Absolute Ethanol	Grade: Microbiological grade Assay: $\geq 99.8\%$	2.5 L		
AW&W QCL/CH /158	Tris HCl	Molecular Biology Grade, Purity: $\geq 99.0\%$,	500 mg		
AW&W QCL/CH /159	Glacial acetic acid	Molecular biology grade, Assay $\geq 99.85\%$,	500 ml		
AW&W QCL/CH /160	6X gel loading dye	Label or Dye: Bromophenol Blue, Gel Compatibility: Acrylamide Gels, Agarose Gels	1 vial (1 ml)		
AW&W QCL/CH /161	100 bp DNA ladder (Marker)	Size: 50 μg / 500 μl ,	1 vial (500 μl)		
AW&W QCL/CH /162	Brilliant green bile broth	Selective media for Enterobacter, Selective media for Escherichia coli & Coliforms, grade for microbiology limited shelf life, expiry date on the label,	500g		
AW&W QCL/CH /163	Agar	Base Ingredients for Media, grade for microbiology form powder, transition temp gel point 33-37 $^{\circ}\text{C}$ (1.5% solution, after autoclaving)	500g		
AW&W QCL/CH /164	Macconkey Agar	Identification Tests & Reagents, Media, Microbiology Quality Control solubility 50 g/l pH 6.9 - 7.3 (50 g/l, H ₂ O, 25 $^{\circ}\text{C}$) (after autoclaving)	500g		
AW&W QCL/CH /165	Crystal Violet	Grade: for microscopy (Bact., Bot., Hist., Vit.) indicator (pH 0.1-2.0), Stains & Dyes,	1 ltr		
AW&W QCL/CH /166	Gram Iodine	Staining Solutions for Gram Staining, grade for microscopy shelf life limited shelf life, expiry date on the label refractive index n _{20/D} 1.335	1 ltr		
AW&W QCL/CH /167	Safranin Acetone Alcohol	Staining Solutions for Gram Staining, grade for microscopy, shelf life limited shelf life, expiry date on the label,	1 ltr		
AW&W QCL/CH /168	EC-MUG Medium	Selective & Differential Media for Escherichia coli & Coliforms grade for microbiology	500g		
AW&W QCL/CH /169	Phosphate Buffer	Grade: for microbiology Composition: monopotassium phosphate, 26.22 g/L, sodium carbonate, 7.78 g/L.	1 ltr		

ITEM CODE #	Item	Specifications	Quantity	Rate	Amount
AW&W QCL/CH /170	GAD (Glutamate acid Decarboxylase)	Grade: for microbiology	25 g		
AW&W QCL/CH /171	Mfc Agar	Selective & Differential Media for Escherichia coli & Coliforms, limited shelf life, expiry date on the label	500g		
AW&W QCL/CH /172	Rosolic Acid	Visual Interval Pass pH 8.0 Pink to Red, composition Dye content, 85%, Appearance (Form) Powder	100g		
AW&W QCL/CH /173	Mkleb Agar	Grade: Microbiological Extra pure	500g		
AW&W QCL/CH /174	Nutrient Agar	Bacteria (General) grade for microbiology, suitability nonselective for Escherichia coli and Coliforms, shelf life limited shelf life, expiry date on the label	500g		
AW&W QCL/CH /175	Agrose Powder	Appearance (Color) White to Off-White Appearance (Form) Powder for DNA/RNA Electrophoresis,, Recommended Retest Period 5 years, impurities ≤10% moisture content.	100g		
AW&W QCL/CH /176	Monopotassium phosphate KH ₂ PO ₄	Grade: ACS Reagent Assay: 99% Form: Powder	1 Kg		
AW&W QCL/CH /178	Sodium Dihydrogen phosphate Dodecahydrate Na ₂ HPO ₄ .12H ₂ O	Grade: Analytical Grade Assay: 99% Form: crystallized	1 Kg		
AW&W QCL/CH /179	Calcium Chloride CaCl ₂	Grade: Analytical Grade Assay: 99% Form: powder	1 Kg		
AW&W QCL/CH /180	Iron(II) Chloride Hexahydrate FeCl ₃ .6H ₂ O	Grade: ACS reagent Assay: 97%	500 g		
AW&W QCL/CH /181	Magnesium Sulfate Heptahydrate MgSO ₄ .7H ₂ O	Grade: ACS Reagent Assay: 98%	1 Kg		
AW&W QCL/CH /182	Ammonium sulfate (NH ₄) ₂ SO ₄	Grade: Analytical Reagent Solubility: 754/L	500 g		
AW&W QCL/CH /183	Sodium bicarbonate NaHCO ₃	Grade: : Analytical Reagent Assay: 99%	1 Kg		
AW&W QCL/CH /184	Acetate (Sodium) C ₂ H ₃ NaO ₂	Grade: Analytical Reagent Assay: 98%	1 Kg		
AW&W QCL/CH /185	Disodium phosphate Na ₂ HPO ₄	Grade: ACS Reagent Assay: 99%	1 Kg		
AW&W QCL/CH /186	Potassium nitrate KNO ₃	Grade: ACS Reagent Assay: 99%	1 Kg		
AW&W QCL/CH /187	Ferrous sulfate FeSO ₄ .7H ₂ O	Grade: Analytical Grade Assay: 99%	1 Kg		
AW&W QCL/CH /188	Manganese (II) Chloride Tetrahydrate MnCl ₂ .4H ₂ O	Grade: ACS Reagent Assay: ≥98.0% dry basis	500 g		

ITEM CODE #	Item	Specifications	Quantity	Rate	Amount
AW&W QCL/CH /189	Coper chloride dihydrate $\text{CuCl}_2 \cdot 2\text{H}_2\text{O}$	Grade: ACS Reagent Assay: 98%	500 g		
AW&W QCL/CH /190	Zinc sulfate Heptahydrate $\text{ZnSO}_4 \cdot 7\text{H}_2\text{O}$	Grade: ACS Reagent Assay: 99%	500 g		
AW&W QCL/CH /191	Cobalt (II) Chloride Hexahydrate $\text{CoCl}_2 \cdot 6\text{H}_2\text{O}$	Grade: ACS Reagent Assay: 99%	500 g		
AW&W QCL/CH /192	Nickel (II) Chloride Hexahydrate $\text{NiCl}_2 \cdot 6\text{H}_2\text{O}$	Grade: Analytical Grade Assay: 99%	1 Kg		
AW&W QCL/CH /193	Sodium molybdate dihydrate $\text{Na}_2\text{MoO}_4 \cdot 2\text{H}_2\text{O}$	Grade: ACS Reagent Assay: 99%	500 g		
AW&W QCL/CH /194	Potassium Persulfate H_3BO_4	Grade: ACS Reagent Assay: 99%	500 g		
AW&W QCL/CH /195	Yeast Extract	Grade: Microbiological Impurities: $\geq 10\%$ total nitrogen (N), $\geq 4.5\%$ amino N	1 Kg		
AW&W QCL/CH /196	Ammonium hydrogen carbonate NH_4HCO_3	grade: analytical assay: 99%	500 g		
AW&W QCL/CH /197	Potassium chloride KCl	grade: for molecular biology assay: $\geq 99.0\%$	1 Kg		
AW&W QCL/CH /198	Ferrous chloride tetrahydrate $\text{FeCl}_2 \cdot 4\text{H}_2\text{O}$	grade: analytical assay : $\geq 99\%$	500 g		
AW&W QCL/CH /199	Resazurin $\text{C}_{12}\text{H}_7\text{NO}_4$	grade: analytical form: powder composition : Dye content, $\sim 80\%$ 3.8 - 6.5, orange to violet Absorption: 600 nm	25 g		
AW&W QCL/CH /200	Disodium selenite Na_2SeO_3	grade: analytical assay : 99% mp: $>350^\circ\text{C}$ (lit.)	25 g		
AW&W QCL/CH /201	Ammonium molybdate solution $\text{NH}_4\text{MoO}_7 \cdot 4\text{H}_2\text{O}$	grade : analytical assay : 99.98% trace metals basis form : solid	25 g		
AW&W QCL/CH /202	Zinc chloride	grade : analytical assay : 99.999% trace metals basis form: crystals	500 g		
AW&W QCL/CH /203	Boric Acid H_3BO_3	grade : analytical assay: $\geq 99\%$	500 g		
AW&W QCL/CH /204	Hexane $\text{CH}_3(\text{CH}_2)_4\text{CH}_3$	grade : anhydrous analytical grade Assay : 98 %	1 L		
AW&W QCL/CH /205	tert-Butyl methyl ether $\text{C}_5\text{H}_{12}\text{O}$	grade : anhydrous assay : 99.8% impurities : $<0.003\%$ water	500 g		
AW&W QCL/CH /206	Linoleic acid	grade: analytical assay : $\geq 99\%$	25 g		
AW&W QCL/CH /207	Diethyl Ether $(\text{C}_2\text{H}_5)_2\text{O}$	grade: anhydrous assay : $\geq 99\%$	1 L		
AW&W QCL/CH /208	Mercury(II) sulfate HgSO_4	grade : ACS reagent assay : $\geq 98\%$	500 g		

ITEM CODE #	Item	Specifications	Quantity	Rate	Amount
AW&W QCL/CH /209	Ammonium Iron(II) Sulfate Hexahydrate $\text{Fe}(\text{NH}_4)_2(\text{SO}_4)_2 \cdot 6 \text{H}_2\text{O}$	Grade: ACS reagent Assay: 98.5%	500 g		
AW&W QCL/CH /210	Disodium hydrogen phosphate heptahydrate $\text{Na}_2\text{HPO}_4 \cdot 7\text{H}_2\text{O}$	Grade: ACS reagent Assay: 98.0%	500 g		
AW&W QCL/CH /211	Nitrapyrin 2- Chloro-6- (trichloromethyl)py ridine,	Grade: Analytical grade Assay: 98.0%	500 g		
AW&W QCL/CH /212	Manganese(II) Sulfate Tetrahydrate $\text{MnSO}_4 \cdot 4\text{H}_2\text{O}$,	Grade: Analytical grade Assay: $\geq 98.5\%$	500 g		
AW&W QCL/CH /213	Manganese(II) Sulfate Dihydrate $\text{MnSO}_4 \cdot 2\text{H}_2\text{O}$	Grade: Analytical grade Assay: $\geq 99\%$	500 g		
AW&W QCL/CH /214	Potassium di-iodate $\text{KH}(\text{IO}_3)_2$	Grade: Analytical grade Assay: $\geq 99.8\%$	500 g		
AW&W QCL/CH /215	Cobalt(II) chloride CoCl_2	Grade: Analytical grade Assay: 97%	500 g		
AW&W QCL/CH /216	Granular Activated Carbon (2 mm particle size)	2 mm particle size	1 Kg		
AW&W QCL/CH /217	Dichloromethane CH_2Cl_2	Grade: Anhydrous grade Assay: $\geq 99.8\%$	1 L		
AW&W QCL/CH /218	Malathion $\text{C}_{10}\text{H}_{19}\text{O}_6\text{PS}_2$	Grade: Analytical grade Assay: 99%	1 L		
AW&W QCL/CH /219	Anthracene	Grade: Analytical grade Standard for GC-MS Assay: 99%	1 Kg		
AW&W QCL/CH /220	VisualaNA (DNA Staining Dye)	It replaces Ethidium Bromide (toxic, potential mutagen) for visualization of DNA or RNA in Agarose gel. VisualaNA is non-carcinogenic and causes significantly fewer mutations in the Ames-test and tests negative in both the mouse marrow chromophilous erythrocyte micronucleus test and mouse spermary spermatocyte chromosomal aberration test.	2 vials of 1 ml		
AW&W QCL/CH /221	Sybergreen PCR master mix	PCR master mix with dNTPS, PCR buffer, MgCl_2 , high fidelity polymerase, Sybergreen for qPCR experiments	1 kit for 200 reactions		

Glassware:

ITEM CODE #	Item	Specifications	Qty	Rate	Amount
AW&WQC L/GW/01	Aspirator bottle	Borosilicate glass aspirator bottle with bottom hose connection, in brown color.	20		
AW&WQC L/GW/02	BOD bottles	300 ml	100		
AW&WQC L/GW/03	Beakers	Made of borosilicate, Pyrex. Having sizes of 10,20, 50, 100, 250, 500 and 1000 ml.	100 each		
AW&WQC L/GW/04	Boiling flask	1 L, with inlet tube and provision for water-cooled condenser	5		
AW&WQC L/GW/05	Conical flask	Made of borosilicate, Pyrex. Having sizes of 10, 20, 50, 100, 250, 500 and 1000 ml.	100 each		
AW&WQC L/GW/06	Crucible tongs	For the holding of crucibles of different sizes i.e: Large, Medium and Small.	5 each		
AW&WQC L/GW/07	Centrifuge bottles	60-mL screw-capped fluorocarbon	500		
AW&WQC L/GW/08	Droppers	10ml glass graduated dropper belt rubber suction ball Disposable droppers 3 ml.	50 of each		
AW&WQC L/GW/09	Distillation apparatus	Flat bottom with a side delivery tube, terminating in a joint. Condenser tabulations are 10 mm, capacity 1000 ml, stopper size 27.with all accessories.	5		
AW&WQC L/GW/10	Distilling flask	125-mL,250 ml	10 each		
AW&WQC L/GW/11	Extraction apparatus, Soxhlet	With 125-mL extraction flask.	5		
AW&WQC L/GW/12	Flask Kjeldahl/ Erlenmeyer flask.	10, 20, 50, 100, 250, 500 and 1000ml	25 each		
AW&WQC L/GW/13	Filter holders	Holder for 0.45 μ m .Borosilicate glass filter holder assemblies for the microanalysis of liquids for biological or particulate contamination under vacuum. 13 mm	5		
AW&WQC L/GW/14	Glass Petri dishes	Made of glass, Small, medium and large.	500 each		
AW&WQC L/GW/15	Graduated measuring cylinders	Made of borosilicate, Pyrex. Having sizes of 10, 25, 50, 100, 500,1000 and 2000 ml.	100 each		
AW&WQC L/GW/16	Graduated round-bottom tubes with caps	17 \times 100 mm	1 packet		
AW&WQC L/GW/17	Glass Funnels	Made of borosilicate, having different sizes i.e: 25, 50, 100, 250, 500ml	50 each		
AW&WQC L/GW/18	Indicators bottle with droppers	50 and 100 ml	15 each		
AW&WQC L/GW/19	Ice pads	For maintaining 4 oC in ice box while collecting samples in field.	10		
AW&WQC L/GW/20	Imhoff cone	A clear, cone-shaped container marked with graduations.Plastic, ring mark at 1000 mL, graduated to 1000 mL	10		
AW&WQC L/GW/21	Micro pipettes with stand/Digital with tips	2 to 20 μ l, 5 to 50 μ l, 10 to 100 μ l, 100 to 1000, 100 to 5000 μ l.	5 each		
AW&WQC L/GW/22	Mortar with spout pestles glazed	Large,Medium and small size.	5 each		

ITEM CODE #	Item	Specifications	Qty	Rate	Amount
AW&WQC L/GW/23	Petri dishes (disposable)	Made of plastic, 100 mm diameter, working volume 12.5 mL, No. of pack=10, no. per case=240, sterile	500 cases		
AW&WQC L/GW/24	Pipette	Made of borosilicate, Pyrex. Having sizes of 0.1, 1, 2, 5, 10, 25ml, 50 ml.	50 each		
AW&WQC L/GW/25	Pipette suckers	For the following size pipettes i.e: 0.1, 1, 2, 5 and 10ml.	50 each		
AW&WQC L/GW/26	Pipette Stands	Accommodates up to six pipetters	10		
AW&WQC L/GW/27	Plastic washing bottles	250 and 500ml	100 each		
AW&WQC L/GW/28	Porcelain crucibles with lid	Large, medium and small size. Can bear Temperature up to 1000 to 3000 centigrade.	25 each		
AW&WQC L/GW/29	Reagent bottles (with pipettes)	100, 300 and 500 & 1000 ml with lids and pipettes	100 each		
AW&WQC L/GW/30	Reagent Dark Bottles	100, 300 and 500 & 1000 ml with lids and pipettes	100 each		
AW&WQC L/GW/31	Reflux apparatus	Consisting of 250 ml erlenmeyer flasks with ground glass 24/40 neck and 300 mm jacket liebig, west, or equivalent condenser with 24/40 ground-glass joint, and a hot plate having sufficient power to produce at least 1.4 W/cm ² of heating surface, or equivalent.	5		
AW&WQC L/GW/32	Suction flasks	1000 ml with tubing nozzle, vacuum filtration apparatus accessories	10		
AW&WQC L/GW/33	Separatory funnel	2-L, 125-mL, Squibb form stopcock. 1000-mL, Squibb form, with ground-glass stoppers and TFE, 500-mL, preferably with inert TFE stopcocks and stoppers.	20 of each		
AW&WQC L/GW/34	Test tubes with stoppers	Made of borosilicate. Having sizes of 10, 15 and 20 ml.	500 each		
AW&WQC L/GW/35	Titration burettes	Made of borosilicate. Having sizes of 50, and 100 ml.	25 each		
AW&WQC L/GW/36	Test tubes/Glass tubes	5, 10, 15, 20 and 25 with caps/lids.	2 dozen of each		
AW&WQC L/GW/37	Volumetric flask	volumetric flask Class A Polyethylene stopper, capacity: 1, 2, 5, 10, 50, 100, 250, 500, & 1000 mL	Case of 24		
AW&WQC L/GW/38	Fermentation bottles	500 ml, 1000 ml	10 of each		
AW&WQC L/GW/39	Media bottles	50 ml, 100 ml, 250 ml, 1000 ml	10 of each		
AW&WQC L/GW/40	wide tipped pipette	Transfer Pipet, Wide Bore, Large Bulb, 125mm, 5.5mm Tip Inner Diameter, 500/Dispenser Box	2 pkts		
AW&WQC L/GW/41	cotton-plugged bottles	1-2 liters, borosilicate glass Suitable for storage of distilled water and solutions, where glass stability is important For all procedures involving	10 of each		

ITEM CODE #	Item	Specifications	Qty	Rate	Amount
		either hot air or steam pressure sterilization Not suitable for direct application of flame,Necks are 35 mm i.d., smoothly finished to take cotton plug, cork or size 8 rubber stopper			
AW&WQC L/GW/42	Digestion vessels; Borosilicate culture tubes	16-100-mm, 20-150-mm, or 25-mm, with TFE lined screw caps,	30 of each		

General Laboratory Supplies:

ITEM CODE #	Item	Specifications	Quantity	Rate	Amount
AW&WQCL /GLS/01	Aluminum foil	Rolls (W × L :12 in. × 1,000 ft)	10		
AW&WQCL /GLS/02	Adjustable Angle Clamps	Grips rods up to 0.75 in. (19mm) dia.; Locked w/wingnut; Jaw type: Three- prong; For irregular shapes; Max. grip size: 2.25 in. (57mm); 0.62 in. (16mm)	10		
AW&WQCL /GLS/03	American Educational Products C-Clamps	Firmly secure instruments or apparatus onto workbench or table.,6 inch	3		
AW&WQCL /GLS/04	Burette support stand	Made of Iron Or steel.	20		
AW&WQCL /GLS/05	Boiling chips	Approximately 10/40 mesh	1 Kg		
AW&WQCL /GLS/06	Buchner funnel	Capacity 320, 550, 700, 1,060, 1860 mL	5 each		
AW&WQCL /GLS/07	Bottle-top dispenser	Analog-adjustable volume, 0.2-2 mL, 1-10 mL, 25-25 mL with SafetyPrime	5 each		
AW&WQCL /GLS/08	Bench-top biohazard bags	Autoclavable bags have one long flap to facilitate easy opening. When picking up individual pieces of waste that need to be discarded, the bag is turned inside out, over the hand, then turned right side out with waste safely inside the bag. Feature one long flap for ease in opening , Provide a convenient, space saving, disposal unit for use in fume hoods. Bright orange-red bags ,Made of High Molecular Weight, High-Density (HMHD) Polyethylene, Printed with the biohazard symbol and a sterilization indicator patch that darkens when exposed to steam sterilization	pack of 100 ea x 2		
AW&WQCL /GLS/09	Clamp Retort Combined	Diecast alloy clamp retort, PVC coated jaws with boss head which accommodates rods up to 15mm in diameter. Length 30 cm.	10		
AW&WQCL /GLS/10	Clamp Holder	For rods up to 19mm in diameter; Made of cast iron body w/brass thumb screws.	10		
AW&WQCL /GLS/11	Cast-Iron L-Shaped Base Support Stands	Stand, Support; Cast-iron; Nickel-plated steel rod; L-shaped base; With 3-mounting holes; Includes one 24L x 0.5 in. (610 x 13mm) diameter, Jackson support,Three mounting holes tapped for 0.5 in. (13mm) diameter support rods, Heavy cast-iron base has two 6.75 in. (17cm) legs that impart stability Bases can be nested for easy storage, with 610 x 13mm nickel-plated steel rod	10		
AW&WQCL /GLS/12	Cast Iron Support Ring Stand	Stand made from cast iron, Acid resistant, Plated steel support rod, Rod threaded to fit base, with Zinc plated steel rod that screws into the base support	10		
AW&WQCL /GLS/13	Cooler/ Ice box	Field Work ,small, medium, large	3 of each		

ITEM CODE #	Item	Specifications	Quantity	Rate	Amount
AW&WQCL /GLS/14	Centrifuge Tube	Polypropylene, capacity 10, 25, 50 ,60 mL	100 each		
AW&WQCL /GLS/15	Drying racks	non-electrical, benchtop or wall mounted, single sided, made of 20 gauge, type 304 stainless steel, polished to a #4 finish, includes pegs and mounting bracket	2		
AW&WQCL /GLS/16	Dressing tissue forcep	L 6 in., 8in., 12 in.	5 each		
AW&WQCL /GLS/17	Double Burette Clamp	High strength alloy, to hold two burettes up to 100mL, length 29cm	10		
AW&WQCL /GLS/18	Evaporating dishes	Dishes of 100-mL capacity made of one of the following materials: 1) Porcelain, 90-mm diam. 2) Platinum—Generally satisfactory for all purposes. 3) High-silica glass.	3 pkts		
AW&WQCL /GLS/19	Extraction thimble	Cellulose,dia:22-33 mm, length:65-118 mm, Wall thickness of standard thimbles 1mm .	1 pkt		
AW&WQCL /GLS/20	Extension Clamps	Steel, Plasticsol, length = 10 in., Plastic-covered jaws hold beakers and flasks firmly at any angle at a variable distance from their support	10		
AW&WQCL /GLS/21	Economy Support Stand	Stands; support; Economy; Rustproof; Wide polycarbonate chemical-resistant base; Autoclavable; Offset stainless-steel support rod secures mounting. Sturdy and stable support stand features polycarbonate plastic base with stainless-steel support rod secured to the base with two hex nuts. Length (Metric) Rod 46 cm, Diameter (Metric) Rod =0.9 cm	20		
AW&WQCL /GLS/22	Fixed Position Medium Two-Prong Clamp	For holding apparatus near lab frame where no adjustment is required after set-up, Clamp, Fixed position;Medium; Two prong; Built-in holder grips rods up to 19mm (0.75 in.) in diameter; w/Non-slip vinyl sleeves; Grip: 0 to 77mm (0 to 3 in.); 133mm L (5.24 in.)	10		
AW&WQCL /GLS/23	First Safety Gas Cylinder Stands and Brackets	Straps rate 1138psi, primary means of support as they enable cylinders to be held tight and secure against brackets, Edges protected with steel reinforced vinyl guarding to help maintain cylinders and provide extra grip, Steel parts sealed with powder paint to assure long service life and chemical resistance, Support straps = 3.81 × 137.16cm (1.5 × 54 in.) polypropylene with steel cinch buckle, All steel, finishing, packaging and labor made 100 percent in the USA and Canada, Hold 10.16 to 25.40 (4 to 10 in.) diameter cylinders.	1		
AW&WQCL /GLS/24	Filter papers	Wattman 40 and 42 micron, pore size: 8µm, thickness 210µm, flow rate and porosity medium, format circle. 0.22µm ,0.45µm, 47 mm	40 pkts.		
AW&WQCL /GLS/25	Fritted-glass filter	Fine ("F") porosity, with a maximum pore size of 5 µm.without organic binder	5		

ITEM CODE #	Item	Specifications	Quantity	Rate	Amount
AW&WQCL /GLS/26	Filter paper	Acid-washed, ashless hard-finish, sufficiently retentive for fine precipitates. Whatman, 1703-050	2 pkts		
AW&WQCL /GLS/27	Filter funnels	Buchner type with fritted disk	5		
AW&WQCL /GLS/28	Faceshield	Lightweight, flexible headbands adjust to accommodate head sizes 6 1/2 to 8 , Effective against most flying fragments, particles, splashes, and similar hazards , Optional nitrometer chin guard protects against upsweep of particles and splash ,Use with approved spectacles or goggles , Assemblies comply with ANSI Z87.1	3		
AW&WQCL /GLS/29	Glass-fiber filter disks	whatman grade 934AH;Gelman type A/E.practical filters diameter are 2.2-12.5 cm. without organic binder	2 packets		
AW&WQCL /GLS/30	Glass beads	Acid-washed, 710-1,180 μ m (16-25 U.S. sieve), 212-300 μ m (50-70 U.S. sieve)	1kg in poly bottles,		
AW&WQCL /GLS/31	Glass Fiber Filter,	Pore Size 1.5 μ m, Diameter 47 mm,	100/pk x30		
AW&WQCL /GLS/32	Heavy Duty Holder	Type clamp, Accommodates all shafts 1/4in. (6.4mm) to 1in. (25.4mm) diameter, Oversized, easy to grip knobs for precise tightening, Supports rods on a 4in. (10.2cm) long surface to prevent vibrations	10		
AW&WQCL /GLS/33	Heavy-Duty Support Stand	Stand, Support; Polypropylene; 21.5 x 4.5cm (8.5 x 16 in.) x 5cm (1.75 in.) thick; 12.5mm (0.5 in.) x 76cm (30 in.) long rod screws; Deep thread; With rod at center, A rod with a deep thread and sturdy tightening knob can be screwed to stand in three ways: into the center of the base, or at either end, The base has a smooth surface for easy cleaning and weighs 2.5kg (5.5 lbs.) for stability. Diameter Rod=1.2 cm, Length Rod =76.2 cm	5		
AW&WQCL /GLS/34	Inoculating Loop	loop size 1 μ L, metallic	10		
AW&WQCL /GLS/35	Kimwipes	L x W : 4 1/2 in. x 8 1/2 in	30 Pkts		
AW&WQCL /GLS/36	Lab spoon	Lab Spoons of different sizes i.e: 0.5, 1, 2, 3, 4, 5, 10 and 25grams made of stainless steel.	20 each		
AW&WQCL /GLS/37	Label tape	White, green, red, w= 3/4 in. (1.91 cm), core size= 3 in. (7.62 cm), roll size= 2160 in. (55 m)	5 each		
AW&WQCL /GLS/38	Lead free filter paper	7 cm dia, whatman no.42 or equivalent	1 packet		
AW&WQCL /GLS/39	Magnetic bar for stirrer	Small, medium and large	50 each		
AW&WQCL /GLS/40	Microcentrifuge tube	Polypropylene, capacity 1.5 mL, 2.5 mL	Pack of 500 x2 each		
AW&WQCL /GLS/41	Multi-Purpose Extension Clamps	to securely hold every type of laboratory glassware and apparatus, Length (Metric) Arm=12.7cm, Size (Metric) Grip =7.11 size medium	10		

ITEM CODE #	Item	Specifications	Quantity	Rate	Amount
AW&WQCL /GLS/42	Polythene rolls	Thin sheets for covering beakers and petridishes.	10		
AW&WQCL /GLS/43	Plastic jug	Of 100, 500, 1000 and 2000ml.	20 each		
AW&WQCL /GLS/44	Porcelain crucible	Capacity 10,30 50, 100 mL, with cap	10 each		
AW&WQCL /GLS/45	Polyester filters	13mm diam 0.2µm	10 pkts		
AW&WQCL /GLS/46	Plastic reagent bottles	500 and 1000ml	10 ea		
AW&WQCL /GLS/47	Polypropylene tubes	Graduated, round-bottom tubes with caps, 17 × 100 mm	100		
AW&WQCL /GLS/48	Pipette tips	Colorless tips, volume range volume range 100-5000 µL	5 Pkts		
AW&WQCL /GLS/49	Polypropylene Burette Clamps with standard rod	Polypropylene, Includes Adapter to fit to narrower 0.37 in. rod, 0.49 and 0.37 in. bushing	10		
AW&WQCL /GLS/50	Printer	General type	2		
AW&WQCL /GLS/51	pH-strips	pH indicating strips, 0 to 14 range, with color development. plastic container with a snug fitting top,	2 pkts		
AW&WQCL /GLS/52	3-Prong Dual Adjust Nickel-Plated Zinc Clamp	3-Prong, Clamp;nonChemical; Talboys; 3-Prong Dual Adjust; Nickel-Plated Zinc Clamp, Large grip adjustment range, 3-prong construction, Single or dual adjust, Nickel-plated zinc	10		
AW&WQCL /GLS/53	Quantitative filter paper,	ashless, Grade 40 circles, diam. 42.5 mm, diam. 55 mm, 90 mm, 110 mm, 125 mm, 150 mm, 185 mm, 240 mm	pack of 100 x5		
AW&WQCL /GLS/54	Rubber stopper	Rubber, white, different size to be fit with medium and large volumetric, storage flasks	10		
AW&WQCL /GLS/55	Round Jaw Burette Clamp	For holding any burette during titration experiments. Round jaw; w/PVC dipped steel jaws which open from 15 to 45mm; Clamp attaches to rods up to 13mm in diameter; Threaded rod/wing nut for adjustment	10		
AW&WQCL /GLS/56	Round Buret Clamps	Round jaws open from 0.5 to 1.75 in. (15 to 45mm), Attaches to rods up to 0.5 in. O.D. (13mm), Coated jaws can be rotated and locked at any angle	10		
AW&WQCL /GLS/57	Sampling bottles	120ml., (1-L/glass TFE-lined screw cap)	100		
AW&WQCL /GLS/58	Serum-vial support	no. of holes, 72, for tubes, 10 × 13 mm no. of holes, 40, for tubes, 16 × 20 mm	5		
AW&WQCL /GLS/59	Silanized glasswool	Pesticide Grade (Silanized), pkg of 100 g (Supelco)	2 pkts		
AW&WQCL /GLS/60	Support for Imhoff Cones	Support, Cone; For Imhoff cones; Sturdy wooden stand; For Wheaton, Pyrex, Kontes, or Nalgene cones; Holds up to three cones	4		
AW&WQCL /GLS/61	Syringe filter	Corning syringe filters are 100% integrity tested and are certified nonpyrogenic and noncytotoxic 0.45 µm .	3 pkts		
AW&WQCL /GLS/62	Stainless steel pan	500ml.	5		

ITEM CODE #	Item	Specifications	Quantity	Rate	Amount
AW&WQCL /GLS/63	Support Stand with Rings	Stand; support; 4 in.; 6 in.; Support Stand with Rings; 2 ring, Stand made from cast iron, Acid resistant, Plated steel support rod, Rod threaded to fit base	5		
AW&WQCL /GLS/64	Safety goggles	Resist mild acids, caustics, aromatics, hydrocarbons, and methylene chloride (excludes hydrofluoric acid). Coated with chemically resistant Silicote-6. Meets ANSI Z87.1-1989 requirements.	5		
AW&WQCL /GLS/65	Spatula	Made of stainless steel and galvanized of small, medium and large size.	10 each		
AW&WQCL /GLS/66	Stopcocks	used with seperatory 2L funnel	5		
AW&WQCL /GLS/67	Soft Glass Beads	Solid Borosilicate Glass	2 pkts of each		
AW&WQCL /GLS/68	Test tube stand	For tubes, 10 - 13 mm, 13-16 mm, 16-20 mm, 20-25mm, 25-30 mm	20		
AW&WQCL /GLS/69	Temperature guage	With digital display	6		
AW&WQCL /GLS/70	Timer	Timing capacity: 99 Minute:59 Second, digital	5		
AW&WQCL /GLS/71	TFE sealed screw cap vial	7 and 14- mL amber glass	200		
AW&WQCL /GLS/72	Tweezer	Sharp, stainless steel	5		
AW&WQCL /GLS/73	Transfer pipets	14.6- and 23-cm (5.75- and 9-in.) disposable glass pasteur pipets. with built-in pipette bulb .	2 Pkts		
AW&WQCL /GLS/74	Three-Prong Dual Adjust Swivel Clamp	Swivel Clamp, Swivel Clamp, Vinyl and Fiberglass sleeves prong covers, length= 178mm, size grip= 0 to 69mm	10		
AW&WQCL /GLS/75	Tubing clamps	Mohr Pinchcock Clamp, made of steel wire, nickel plated	10		
AW&WQCL /GLS/76	Tong	crucible and flask tongs, stainless steel, L 9 in. (229 mm)	5		
AW&WQCL /GLS/77	Tripod Base Support Stands	Tripod Base Support Stand, Cast iron. Diameter (Metric) Rod=1.3cm , 0.8cm. Length (Metric) Rod=91.4cm, 48.3cm	3 each		
AW&WQCL /GLS/78	Universal Swivel Clamp for Overhead Stirrers	Clamp, Swivel; For overhead stirrers; Universal; 3 knobs: lower and raising stirrer, locking on support rod and controlling swivel setting; Precision machined aluminum; Fits stirring stands from 1/2 in. to 3/4 in. (12mm to 19mm) diameter	10		
AW&WQCL /GLS/79	volumetric pipet	3-mL and a 5-mL graduated pipet with manual pipet bulbs.	10 each		
AW&WQCL /GLS/80	Wooden holding block (20 vial capacity)	Made from laminated plywood with drilled holes to accept vials, dimensioned to fit snugly onto the shaker table.	5		
AW&WQCL /GLS/81	wrap-around safety spectacles	ANSI compliant	20		
AW&WQCL /GLS/82	Weight measuring plastic	Small, medium & Large (disposable)	20 Pkts		
AW&WQCL /GLS/83	Watch glass	Medium, large	20 each		

ITEM CODE #	Item	Specifications	Quantity	Rate	Amount
AW&WQCL /GLS/84	Stand-up thio bag	Water and waste water sampling sterilized bags, 100 and 300 ml capacity	10 pkts		
AW&WQCL /GLS/85	Bio-hazard autoclave gloves	Excellent for handling hot objects out of an autoclave or oven, with wrist and forearm protection, powder-free, latex free, reusable, Soft, pliant, all-cotton terry cloth gloves, Heat-resistant up to 232°C (450°F). medium and large size.	20 pkts		
AW&WQCL /GLS/86	Tape autoclave indicator	Impregnated to show words Autoclaved after 15 minutes of exposure at 250°F (121°C) in a steam autoclave.	5 pkts		
AW&WQCL /GLS/87	Carton sealing tape	Strong, water-resistant, clear PP tape meets postal regulations.	5 Pkts		
AW&WQCL /GLS/88	Bio-hazard bags	Suitable for temperatures up to 135°C, complete with black warning symbol on yellow background and safety use instructions..	3 pkts		
AW&WQCL /GLS/89	Glass slides with cover slips	Slide specs: Thickness 1.0 to 1.2mm, L×W= 75mm × 25mm, Cover slip thickness 0.13 to 0.17mm, L×W=22 x 22mm	5 pack		
AW&WQCL /GLS/90	Wooden applicator stick	Applicator Sticks, Cotton Tipped, 15.2cm (6"), sterile.	1 pack ea		
AW&WQCL /GLS/91	Wooden applicator stick	Applicator Sticks, Cotton Tipped, 7.6cm (3"), Sterile	1 pack ea		
AW&WQCL /GLS/92	Wire loop	Nichrome Inoculating Loop with Double Twisted Wire, 2 mm (i.d.)	5		
AW&WQCL /GLS/93	Wire loop	Medium Loop / 2.91mm ID, Mfr. No. L1103	5		
AW&WQCL /GLS/94	Cellulose Filters 0.45 micron	filter media; cellulose acetate+CN, pore size 0.45µm, size 47mm, cat# MFGWS047045MCE, LOT# MF1550/MS, Micropore filtration products	1 pack of 100		
AW&WQCL /GLS/95	Cellulose Filters 0.22 micron	Filter media; cellulose acetate+CN, pore size 0.22µm, size 47mm, cat# MFGWS047022MCE, LOT# MF202, Micropore filtration products	1 pack of 100		
AW&WQCL /GLS/96	Sprite lamp	Capacities 60 mL With metal wick holder screw-on type and glass top cover, superior quality.	4		
AW&WQCL /GLS/97	Centrifuge tubes	Micro centrifuge Tube, 1.5mL, Attached Locking Snap Cap, Rnase, Dnase, Pryogen, ATP and Human DNA Free, Sterile	500		
AW&WQCL /GLS/98	Tips boxes	10 µl, 100 µl, 1000 µl, Sterilized, volume range 0.1-10µl (1000/bag), 10-100µl (1000/bag), 100-1000µl (1000/bag).	1 bag of each		
AW&WQCL /GLS/99	PCR tubes	0.2 ml thin-walled tubes with flat cap, Order number=844-70016-20D, 20 pieces, clear	5 pkts		
AW&WQCL /GLS/100	Ice block	Aluminum Cooling Block for 0.2mL Tubes, Strips or 96-Well Plates.	1		
AW&WQCL /GLS/101	Tube racks	Kicute Excellent 80 Place 0.2ml, 1.5ml, and 2ml Micro Centrifuge Polypropylene Test Tube Rack Holder	4		
AW&WQCL /GLS/102	Cryopreservati on box	1.5 ml , Water-repellant, fiberboard cryo box (2-inch) for 1-8ml tubes,	5		

ITEM CODE #	Item	Specifications	Quantity	Rate	Amount
		Dimensions (L x W x H) 5 x 5 x 2 in. (12.7 x 12.7 x 5cm)			
AW&WQCL /GLS/103	Falcon tubes	15 ml & 50mL, Sterile Conical Centrifuge Tubes (polystyrene), with screw caps, Length (Metric) 115mm, with 33mm polyethylene flat-top screw caps	500 tubes		
AW&WQCL /GLS/104	Fermentation tube	White ceramic enamel graduations start at 0.3ml, vertical tube O.D.XI: 13 x 100mm, Approx. O.D of Bulb: 30mm, with heat resistant plastic caps.	5		
AW&WQCL /GLS/105	Parafilm	roll size 4 in x 125 feet	10		
AW&WQCL /GLS/106	Acids, Flammable, Corrosive material storage cabinet	45 gal, two shelves, sliding-door, H x W x D , 65 in. x 43 in. x 18 in. Constructed of 18 gauge cold-rolled steel sides, top and bottom; double-walled with 1 1/2 in. air space between walls and doors. Vents are equipped with flame arresters and removable 2 in. NPT steel plugs; grounding connector is built-in. Equipped with 3-point key lock and 2 in., raised, leak-proof door sill and high-gloss enamel door with red warning legend. For all cabinets, unless otherwise specified, subtract 3 in. from each dimension to get inside dimensions. Door latches open by an FM-approved fusible link that melts and automatically closes once the fusible link reaches a temperature of 165°F.	2		
AW&WQCL /GLS/107	silver membrane filters	A 25 mm Hydrophilic Pure Silver membrane filter with a 0.45 um (0.45 micron filter) pore size. Used for air monitoring of carbon black, coal tar products, coke oven emissions & silica.	5 pkts		
AW&WQCL /GLS/108	peroxides test strips	1-100 mg/L range of application	2 pkts		
AW&WQCL /GLS/109	Glass Wool	Glass wool is an insulating material made from fibres of glass arranged using a binder into a texture similar to wool.	2 pkts		
AW&WQCL /GLS/110	Peristaltic Pump	flow control, flow range should be less than 50 ml/min	3		
AW&WQCL /GLS/111	Solid Phase Extraction Cartridge (SPE)	With Solid Phase Extraction Manifold Total column length= 20.4 cm Internal diameter= 1.1 cm	1 pkts		
AW&WQCL /GLS/112	Ultra-tuff Waste Bags	11" X 14" 1-6 Gallon 1.5 Mil - Model 50-42	5 pkts		
AW&WQCL /GLS/113	Biohazard Waste Disposable Bag,	7-10 gallon Capacity, 24" Length x 24" Width, Medium, Red	5 pkts		
AW&WQCL /GLS/114	Sharps Disposal Container	Slide access opening (2"x1.5") with built in cap holder for single handed re-capping and the needle unwinder port.	2		

ITEM CODE #	Item	Specifications	Quantity	Rate	Amount
AW&WQCL /GLS/115	Glass Disposal Boxes	Floor Model dimensions: 12L x 12W x 27 in.H (30.5 x 30.5 x 68.6cm) and Benchtap Model dimensions: 12L x 12W x 10 in.H (30.5 x 30.5 x 25.4cm), Polybag liner, Separate broken and contaminated glassware from other waste	2		
AW&WQCL /GLS/116	Safety Shower	Provides full-body shower and eye wash while protecting lab against water and chemical splashes. Immediate-response operation handles are easy to activate.	2		
AW&WQCL /GLS/117	Cupboard for chemical storage	1.0mm thickness high quality cold rolled steel plates and painted by epoxy resin powder in gray color with good corrosive resistance performance., Doors are double wall structure , Each cabinet is equipped adjustable shelves for maximum storage. Windows are made by 5mm tempered glass which can prevent the dangerous when glass broken.	2		
AW&WQCL /GLS/118	Cupboard with lab coat hanging	Double wall door, along hanging compartment, adjustable racks.	2		
AW&WQCL /GLS/119	Drum For Waste	For disposing of laboratory waste. Medium size.	4		
AW&WQCL /GLS/120	Cover Spectacles	Anti-UV, Anti-scratch, Chemical resistant, Antifog, Lenses(Clear PC), Color(Blue).	20 spectacles		
AW&WQCL /GLS/121	Surgical gloves	Latex, sterile, powder-free, textured finish, size(small & medium).	500 pairs of each		
AW&WQCL /GLS/122	Chemical Resistant gloves	latex, nitrile, PVC, Chemstop Neoprene, cryogenic, Chemstop butyl and viton-butyl, 9 & 10 size.	2 pairs of each		
AW&WQCL /GLS/123	Cold resistant gloves	Cryogenic Gloves Low Temperature Resistant LN2 Cold proof Nitrogen Protective Gloves Mid-Arm, Low temperature resistant: (-200°C)~(-360°C), Soft and flexible; Delivering cylinders of cryogenic liquids Attaching metal mesh-Cold resistant , waterproof and keep warm.	2 pairs		
AW&WQCL /GLS/124	Laboratory coats with tags	White color, Medium & large size, type(cotton), with USPCASW, MUET, logo with number code.	20 pieces of each		
AW&WQCL /GLS/125	Surgical masks, with hand band	Color(Blue and white)	2x 500 masks		
AW&WQCL /GLS/126	Boufant Caps	Closure Type Elastic Color Green, Blue, White, Pink, Red Fabric Type Single Ply Polypropylene, Medium Weight Polypropylene HPIS Code 760_110_50_0 Latex, Size Medium, and Regular/Large.	2000 caps of each		

ITEM CODE #	Item	Specifications	Quantity	Rate	Amount
AW&WQCL /GLS/127	Shoe covers	Disposable Polypropylene Shoe Covers, L, Disposable polypropylene shoe covers protect carpets and floors Economical and disposable Made of polypropylene nonwoven fabric, 50-pairs of blue shoe covers Fit shoes up to size 7,8,10.	10 pkts of each		
AW&WQCL /GLS/128	Safety shoes	Size(7& 8), Water resistant microfiber upper Padded collar Elastic under tongue, to aid fitting Anti-bacterial moisture wicking textile lining Clean design for clean liquid run off Replaceable, full length cushioned EVA footbed. Perforated to aid airflow Internal steel toe cap - 200 joules impact resistance Single density, slip resistant polyurethane sole Anti static Oil resistant Shock absorbing heel	3 pairs of each		
AW&WQCL /GLS/129	Eye wash station with one bottle	1*500ml bottle, PLUM OPEN EYE WASH STATION; 1 BOTTLE, 500ML STERILE SALINE	2		
AW&WQCL /GLS/130	Disposable bags	polypropylene, 40 uM thick, clear, with biohazard printing, Autoclave able, 12 litre capacity.	500 bags		
AW&WQCL /GLS/131	Boxes for broken glassware	Material Polybag liner For Use With (Application) Separate broken and contaminated glassware from other waste, the lid and flap to seal, Benchtop Model dimensions: 12L x 12W x 10 in.H (30.5 x 30.5 x 25.4cm)	6		
AW&WQCL /GLS/132	Pouches and Bag rolls for sterilization	Environmentally friendly printing Assured sterility/ Outstanding moisture resistance / Superior tear and puncture resistance Suitable for Hydrogen Peroxide (Plasma), EtO, Gamma, and E-beam sterilization.	1000 pouches		
AW&WQCL /GLS/133	Steam Sterilization Bag	Made for steam sterilization under controlled conditions (250°F to 260°F [121°C to 127°C] at 30 psi for 30 minutes), size(LxW)400mm x 500mm, 50mm x 200mm and 120mm x 250mm	500 pieces		
AW&WQCL /GLS/134	Laboratory glassware washer	400w of drying power gently circulates heated air into and around items, Heat selector knob with three temperature settings: high, medium and low Power button, 8 Amp at 120V, circuit breaker and independent thermo-fuse, replaceable polyurethane foam filter air flow by inserting plugs instead of pegs into unused peg holes Sturdy bases with excellent balance;	1		

ITEM CODE #	Item	Specifications	Quantity	Rate	Amount
		placed on any flat surface Removable polypropylene baskets for storage of small labware and extra pegs 120V, Two or three tier option Baskets hold small glassware including test tubes, pipets			
AW&WQCL /GLS/135	Congo red paper or other pH test paper	Size: 20 mm × 70 mm Dye content: ≥35 %	4 pkts		
AW&WQCL /GLS/136	Arsenic Kit	Range: 4, 6, 8, 10, 12, 14, 16, 20, 30, 40, 50, 60, 80, 100, 140, 160 ppb # of tests: 50 Method: Test strip (color) Weight: 8 lbs (3.6 kg)	5 kits		

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
Contractor

Signature
Procurement Manager
USPCAS-W, MUET, Jamshoro