

## TENDER DOCUMENT

For Supply, Installation of Lab Equipments, under project  
“Establishment of Women Campus University of Swat”

For the following Departments

1. Department of Zoology
2. Department of Psychology
3. Department of Botany
4. Department of Home Economics

(Single Stage Two envelope procedure)



**Issued by**

**Procurement Section / Office of the Treasurer**

**At Main Campus Charbagh, District Swat**

**University of Swat**

**Khyber Pakhtunkhwa, Pakistan**

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## Table of Contents

### Table of Contents

|   |    |
|---|----|
| Tender Notice.....  | 3  |
| Tender Application Form.....  | 4  |
| Terms & Conditions.....   | 5  |
| Tender Specification.....   | 9  |
| Method of Procurement .....   | 10 |
| Technical Evaluation Criteria of the Bid .....                      | 11 |
| BID Evaluation Criteria .....                                       | 11 |
| Price Schedules .....   | 12 |
| Fair Price Certificate.....   | 13 |
| Warranty/Guarantee Certificate.....                                 | 14 |
| Contract Agreement.....   | 15 |
| Non-Black Listing Certificate .....                                 | 16 |
| Manufacturer's Authorization Form.....                              | 17 |
| Department of Zoology, Women Campus.....                            | 18 |
| Lab Equipments for Zoology .....                                    | 18 |
| Chemicals for Zoology.....  | 25 |
| Animals models and preserved specimens for Zoology .....            | 27 |
| Department of Psychology .....                                      | 28 |
| Lab Equipment .....   | 28 |
| Department of Botany Women Campus.....                              | 32 |
| Laboratory Equipment .....  | 32 |
| Chemicals and Glasswares for department of Botany women campus..... | 42 |
| HOME ECONOMICS, WOMEN CAMPUS .....                                  | 45 |
| Lab Equipments .....  | 45 |



Main Campus, Charbagh  
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*Store/Procurement Section*  
**OFFICE OF THE TREASURER**  
University of Swat

## Tender Notice

For Supply, Installation of Lab Equipments, under project “Establishment of Women Campus University of Swat” **(Single Stage Two envelope procedure)**

Sealed bids are invited for the supply & installation of the Lab Equipments for the following Departments

| Sr.No | Department                          | Items  |
|-------|-------------------------------------|--|
| 1     | <u>Department of Zoology</u>        | Lab Equipments, as per specifications and quantity at annexure A,B,C,D,E |
| 2     | <u>Department of Psychology</u>     |  |
| 3     | <u>Department of Botany</u>         |  |
| 4     | <u>Department of Home Economics</u> |  |

under single stage two envelope procedure from Manufacturers, Authorized Dealers registered with Sales Tax and Income Tax Department.

1. Bid Cost shall comprise of **item Cost** and **applicable taxes** (Federal and Provincial) **separately**. ( as per the price schedule given at page No: 12 of the bidding document)
2. Financial proposal for each Department shall be prepared separately.
3. Supply Orders shall be subject to availability of funds.
4. All bids shall be prepared by mentioning all applicable taxes including GST as per Govt Rules, after award the applicable taxes will be deducted from the bidders except those who present tax exemption certificate.
5. Any addition, deletion, disfiguring /Over writing, Manipulation in the tender/BOQ shall be liable to rejection.
6. All the bids will be scrutinized by the committee. Incomplete and conditional bids shall not be acceptable; However, the Committee may allow based on nature and suitability (on case-to-case basis) in best interest of the University.
7. The competent authority reserves the right to reject anyone or all the tenders, the reasons for rejection shall be communicated to the firm upon request.
8. Tender forms along with detailed specification, terms and conditions can be obtained from the office of the treasurer, University of Swat upon online Deposit Receipt of fee Rs. 1000/- (Non-Refundable) in favor of the Treasurer A/C No. 4044998125, National Bank of Pakistan Main Branch, Saidu Sharif Swat (Branch Code 1330).
9. Quotation duly filled must reach to the **Tender box** in the office of Treasurer, University of Swat, Main Campus Charbagh Swat along with the **earnest money @ 2% of bid cost** in shape of Call Deposit Receipt (CDR) from any scheduled bank in favor of Treasurer, University of Swat latest by (Tuesday) July 13, 2021 (10:30 AM, Tender box closing time).
10. Bids will be opened on the **same day at 11:00 AM** in Committee Room Main Campus Charbagh Swat, in the presence of suppliers or their authorized representatives.
11. In Case of public holiday, the meeting will be held on next working day on same time.
12. The details i.e. Tender Specification and TORs can also be obtained from the official website of the University i.e. [www.uswat.edu.pk](http://www.uswat.edu.pk)

**Store Officer**

**Bidder Signature with Date:** \_\_\_\_\_



## Terms & Conditions

1. Rates should be quoted against each item desired for bid.
2. Call deposit at the rate of 02% (two percent) earnest money shall be attached.
3. Income Tax and Sale Tax shall be deducted at source.
4. In case of non-supply of required item(s) mentioned in the Tender documents, CDR will be forfeited in favor of the University.
5. The successful bidder will be bound to complete supply of items in 30 days for Non-imported items and 6 to 8 weeks for imported items after issuance of the supply order, otherwise penalty will be imposed @ 0.067 % Rupees /Day Maximum up to 10 % of the total amount in supply order. (provision of bill of entry copy is mandatory in case of imported items)
6. The number of items can be increased or decreased with the approval of the Competent Authority.
7. For electrical / IT / laboratory equipment the warranty period of at least 01 (one) year is mandatory to be mentioned in the quotations & for the Expendables of the items will be one months from issuance of completion certificate.
8. Retention money will be deducted from running bill @10% and will be released after successful completion of the Defect Liability Period (and after issuance of completion certificate/End User Certificate).
9. No tender or bid shall be entertained without deposition of the CDR @ 2%.
10. No tender or bid shall be entertained without deposition of Tender fee @ Rs.1000/- (Rupees One Thousand only) which shall be deposited in account No. 4581-2 National Bank of Pakistan (NBP) Main Branch Saidu Sharif Swat.
11. The firms must write on the corner of envelop the name of the items/equipment applied for.

12. Provision of sample is obligatory for the firms in due course of time, if mentioned in supply order, and if the firm fails to provide the sample, then the firm will be excluded from the tender.
13. No alternate rate shall be entertained for the items/equipment.
14. All prices should be quoted on F.O.R (Pak Rupees) inclusive of all taxes.
15. Your bid proposal should be inclusive of freight and all other taxes and to be delivered at University of Swat's premises.
16. All pages of the bidding documents are mandatory to be signed, stamped meaning thereby bidder agrees to our terms and conditions, mentioned herein, failing which the bid may be liable to rejection.
17. If the vendor fails to deliver the goods / services to University of Swat, within the given deadline, any of the following can be opted by University of Swat on the recommendation of the end user and approval of the authority:
  - a. An extension in the delivery period may be granted in case a valid reason/justification with necessary documentary evidence is provided by the vendor supporting the reason for delay.
  - b. A penalty up to 10% of the invoice value may be charged.
  - c. Purchase order may be cancelled along with confiscation of earnest money if the vendor fails to deliver the goods / services after the initial or extended delivery time, as the case may be.
18. The Competent Authority reserves the right to accept or reject any or all of tenders processed by assigning any reason(s) (as per PPRA & KPPRA Rules).
19. If the delivered goods / services are not according to the required quality standards / specifications, the same shall be liable to be rejected after inspection. The vendor would be required to supply as per requirements mentioned in our BoQs, otherwise the purchase / work order will be cancelled after due date with confiscation of earnest money.

20. Purchase order (s) will be awarded to the Most Advantageous or technically recommended bidder (s) on the basis of item wise / subtotal wise / grand total wise according to the nature of BoQs.
21. No overwriting / cutting / corrections or interpolation will be allowed in the BOQ's/Quotations/bids, if any.
22. Any bids received after the prescribed date & time for submission of bids shall be returned un-opened.
23. All prices should be valid for at least 120 days from the date of Tender opening, Withdrawal or any modification of the original offer within the validity period shall entitle University of Swat to forfeit the earnest money in favor of the University of Swat and put a ban on such vendor participation in University of Swat Tenders / works.
24. Payment will be made on submission of Invoice in the name of "University of Swat" with a copy of delivery challan (s) after the complete order has been supplied, inspected and accepted which includes delivery / installation, and University of Swat acceptance / inspection thereof.
25. All the bids will be scrutinized by the committee. Incomplete and conditional bids shall not be acceptable; However, the Committee may allow based on nature and suitability (on case-to-case basis) in best interest of the University.
26. In case of any dispute or grievance, the matter shall be addressed as per PPRA/KPPRA rules.
27. Product Qualification Criteria: If the product offered by vendor, failed to meet the specifications / standards mentioned in the BOQ, it will be rejected straightaway and no further consideration will be given. Also, if the offered product has better specifications than the requirement of BOQ it will be accepted.
28. Please submit bid (rates) on our prescribed BoQs Form and clearly mention the quoted model / brands, with complete terms and conditions signed, stamped with bids, otherwise your bid (s) may be rejected.

29. In case more than one bidder have quoted same rates for an item; the bidder securing more items (in terms of cost) will be awarded the specific item.
30. Refurbished, Grey, used, open box or smuggled products will not be accepted in any case.
31. As per Notification No. KPPRA/M&E/SBDs/1-1/2015, Dated Peshawar the May 03, 2016, Clause No: 32.2 reproduced as "Within thirty (30) days of receipt of the Contract Form/Supply Order, the successful Bidder shall sign and date the contract/Supply Order and return it to the Procuring agency
32. As per Notification No. KPPRA/M&E/SBDs/1-1/2015, Dated Peshawar the May 03, 2016 clause No: 33.2, Reproduced as " Failure of the successful Bidder to comply with the requirement of ITB Clause 32 or ITB Clause 33.1 shall constitute sufficient grounds for the annulment of the award and forfeiture of the bid security, in which event the Procuring agency may make the award to the next lowest evaluated Bidder or call for new bids."

#### Undertaking

It is certified that the above terms & conditions have been read, learned and accepted.

\_\_\_\_\_  
Signature of CEO/Bidder  
Dated: \_\_\_/\_\_\_/\_\_\_



## Tender Specification

**At Annexure A, B ,C and D at the End of this Document**

**Note:**

33. The unit rate for the item/equipment will be considered.
34. The rate of item/equipment must include all charges of transportation and delivery to the University of Swat.
35. The rate shall be inclusive of all taxes, (Showing item wise cost and all applicable taxes separately as per the Price Schedule at page No: 12 of the bidding document)

**Bidder Signature with Date:** \_\_\_\_\_

## **Method of Procurement**

In the light of rule No. 43 clause (b) of PPRA rules 2004 and rule No.14-2(b) of KP Procurement of Goods Works and Services rules 2014, the method of procurement adopted by University of Swat will be Single Stage - Two Envelope Procedure for selection of the firm. The bidder should submit Two separate sealed envelopes. One envelope should contain the Technical Proposal and the other envelope should contain the Financial Proposal. Both envelopes should be clearly marked "**Technical Proposal**" and "**Financial Proposal**". Initially only the envelope marked Technical Proposal shall be opened, while the Financial Proposal shall be retained in the custody of Procurement Committee for Goods without being opened. The University of Swat shall evaluate the Technical Proposal against the evaluation criteria set for the equipment/item. The Financial Proposal of the technically successful bidder(s) shall be opened at a time, date and venue announced/communicated to the bidders in advance. The bid found to be the lowest evaluated shall be accepted, while the financial proposal of bids found technically non-responsive shall be returned unopened to the respective bidders.

**Bidder Signature with Date:** \_\_\_\_\_

# Technical Evaluation Criteria of the Bid

## BID Evaluation Criteria

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

| S.No                 | ITEM NAME   | Max MARKS  | Marks Obtained |
|----------------------|---|------------|----------------|
| (i)                  | Tender FEE of Rs.1000 attached  | Compulsory |                |
| (ii)                 | <b>An affidavit</b> showing that 02% Security is enclosed in the financial bid without showing the CDR amount | Compulsory |                |
| (iii)                | FBR active Income Tax Certificate attached  | Compulsory |                |
| (iv)                 | FBR active Sales Tax Certificate attached   | Compulsory |                |
| (v)                  | Warranty Corticate attached   | Compulsory |                |
| (vi)                 | Non-Black Listing Certificate attached  | Compulsory |                |
| (vii)                | Fair Price Certificate attached   | Compulsory |                |
| (viii)               | Manufacturer's Authorization Form /Authorized Dealer Certificate  | Compulsory |                |
| (ix)                 | List of clients where such equipment/item delivered, 5 Marks / client.  | 25 Marks   |                |
| (x)                  | Firm Profile/Soundness/Financial position for the last three years including bank statement                   | 25 Marks   |                |
| (xi)                 | Guarantee/Warranty, 5 Marks /Year Maximum upto 15   | 15 Marks   |                |
| (xii)                | Satisfactory letter from client in favor of quoted items: 02 Mark / Letter Maximum upto 10                    | 10 Marks   |                |
| (xiii)               | Provision of Training to End user, 2 Marks / Training Maximum upto 10   | 10 Marks   |                |
| (xiv)                | Numbers of office / Workshop facilities at different Cities of Pakistan, 5 Marks/ city office                 | 15 Marks   |                |
| Total Marks Obtained |   |            |                |

### Note:

- (i) Submit document as per mentioned criteria
- (ii) Qualifying Marks are 60.

Signature of the Committee:

\_\_\_\_\_

# Price Schedules

(To be printed at Company Letter Head)

To

Treasurer  
University of Swat

| S.No | Item Name | Specifications | Unit Price<br>Without<br>GST<br>( PKR) | GST | Qty | Total<br>Price<br>With<br>GST<br>( PKR) |
|------|-----------|----------------|--|-----|-----|---|
| 1    |           |                |  |     |     |   |
| 2    |           |                |  |     |     |   |

Note: in Case of Discrepancy between unit price and total, the unit price shall prevail)

**Bidder Signature with Date:** \_\_\_\_\_

## **Fair Price Certificate**

(TO BE ENCLOSED WITH BID DOCUMENT)

(To be printed at stamp paper)

I/We, M/S \_\_\_\_\_

hereby certify that prices quoted by us against University of Swat for the tender \_\_\_\_\_ are the lowest and most competitive as generally applicable to all other buyers and or sold through our agents as per prevailing international market as on the date of quote and if it is established at any stage that these were higher we shall be held responsible and agree to pay immediately the differential to University of Swat.

**SIGNATURE AND SEAL OF THE**

**BIDDER/MANUFACTURER/SOLE AGENT/AUTHORIZED DEALER**

## Warranty/Guarantee Certificate

(TO BE ENCLOSED WITH BID DOCUMENT)

(To be printed at stamp paper)

Firm's Name \_\_\_\_\_

Contract No. \_\_\_\_\_

1. I/We hereby guarantee that the items supplied against the above contract are in accordance with the relevant specifications and terms of the contract and that material used (whether or not of our manufacture) are in accordance with the latest approved standard specifications are of good quality throughout, and that we shall replace free of cost, every article or part thereof which before use or in use, shall be defective or not within the limits and tolerance of specifications requirements, or in any way not in accordance within the terms of the contract.
2. In case of our failure to replace the defective goods free of cost within the period specified by the purchaser, we will refund the cost involved.
3. The Warranty/Guarantee will remain valid for 12 months for IT/Electrical Equipment and 01 Month for Stationery items or any other agreed term after receipt of goods by the consignee/installation of items.

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

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

Status in the firm: \_\_\_\_\_

Dated: \_\_\_\_\_

## **Contract Agreement**

(TO BE ENCLOSED WITH BID DOCUMENT)

**THIS CONTRACT** is made at ..... day of ..... between the University of Swat (hereinafter called the "Purchaser") of the First Part and M/S..... a firm registered under the laws of Pakistan and having its registered office at .....

(Hereinafter called the "Supplier") of the Second Part.

**WHEREAS** the Purchaser invited bids for procurement of items, in pursuance whereof M/s..... being the supplier/ manufacturer/ authorized Agent of ..... (Item name) in Pakistan and ancillary services offered to supply the required item (s); and Whereas the Purchaser has accepted the bid by the Supplier for the supply of .....(item name) and services in the sum of Rs.....(amount)- (Rupees.....) cost per unit, the total amount of ..... (quantity of item) ..... (item name) shall be Rs..... (amount)- (Rupees.....)

**IN WITNESS** Whereof the Parties hereto have caused this Contract to be executed at the place and shall enter into force on the day and year first above mentioned.

**Signed/ Sealed by the**

**Supplier/ authorized Agent** \_\_\_\_\_

**Signed/ Sealed by Purchaser** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

# Non-Black Listing Certificate

(TO BE ENCLOSED WITH BID DOCUMENT)

(To be printed at stamp paper)

I, \_\_\_\_\_ S/o \_\_\_\_\_ working as Proprietor/Managing Partner/Director of M/s \_\_\_\_\_ having its registered office at \_\_\_\_\_ do hereby solemnly affirm and declare on oath as under:

1. That I am competent to swear this affidavit being proprietor/one or the partners/ Director of M/s \_\_\_\_\_
2. That M/s \_\_\_\_\_ is a proprietorship/partnership firm/company is participating in tender process conducted by Institute.
3. That I hereby confirm and declare that none of my/our group/sister concern/associate company is participating/ submitting this tender.
4. That I hereby confirm and declare that my/our firm/company M/s \_\_\_\_\_ and my/our firm/group/company/ sister concern / associate company have not been black listed/de-listed by any Institutional agencies/Govt. Deptt/ Public Sector Undertaking.
5. That there is no change in the Name & Style, Constitution and Status of the firm, after Pre-qualification.
6. That I further undertake that in case any of the facts contained above and in-our application is round other-wise or incorrect or false at any stage, my/our firm/company/ group/sister concerns/ associate companies shall stand debarred from the present and future tenders of the University of Swat.

**(Signature of the Proprietor/ Managing Partner/Director with Seal) DEPONENT**

Verified at \_\_\_\_\_ on \_\_\_\_\_ that the contents of paras 1 to 6 of this affidavit are true and correct to best of my knowledge and no part of this is false and nothing material has been concealed or falsely stated therein.

**(Signature of the Proprietor/ Managing Partner/ Director with Seal)**

DEPONENT

**(Signature & Seal of Notary)**



## **Manufacturer's Authorization Form**

(To be printed at Manufacturer's Letter Head)

[See Clause 13.3 (a) of the Instructions to Bidders.]

To: *[name of the Procuring agency]*

WHEREAS *[name of the Manufacturer]* who are established and reputable manufacturers of *[name and/or description of the goods]* having factories at *[address of factory]*

do hereby authorize *[name and address of Agent]* to submit a bid, and subsequently negotiate and sign the Contract with you against IFB No. *[reference of the Invitation to Bid]* for the above goods manufactured by us.

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

\_\_\_\_\_  
*[signature for and on behalf of Manufacturer]*

Note: This letter of authority should be on the letterhead of the Manufacturer and should be signed by a person competent and having the power of attorney to bind the Manufacturer. It should be included by the Bidder in its bid.

## Department of Zoology, Women Campus

### Lab Equipments for Zoology

| S.no | Item                                      | Specifications   | Or                | Qty      |
|------|---|--|-------------------|----------|
| 1.   | Micropipette<br>Analogue Multi<br>Channel | Five colors optional<br>Comfortable and simple to use<br>Precise pipetting control<br>Robust and lightweight<br>0.1-100ml volumetric or serological<br>pipettes can be used<br>Filling and delivery are easily<br>controlled with a small sensitive lever<br>Uses integral and replaceable 3um<br>filter | <b>Equivalent</b> | <b>1</b> |
| 2.   | Micropipette<br>Electronic All in<br>One  | 0.5–10 (grey button), 20 µl,<br>Volume 1 µl,   | <b>Equivalent</b> | <b>2</b> |
| 3.   | Stereo Microscope                         | 0.5–10 (grey button), 20 µl,<br>Volume 1 µl,<br>with in-built camera connectivity in<br>eyepiece<br>Objective 0.56X – 4.5X eyepiece WF<br>10 X incident light 15 W halogen<br>Transmitted light 15W halogen  | <b>Equivalent</b> | <b>5</b> |
| 4.   | Inverted<br>Microscope                    | with in-built camera connectivity in<br>eyepiece<br>Objective 0.56X – 4.5X eyepiece WF<br>10 X   | <b>Equivalent</b> | <b>5</b> |
| 5.   | Micrometer<br>eyepiece                    | 59-1405 Fillar micrometer eyepiece<br>Wolfe. 10x eye pice with movable<br>fine lines. Rotation of one division of<br>graduated knob corresponds to<br>0.01mm movements of lines in the<br>field of view. Range of measurements<br>is<br>10mm.  | <b>Equivalent</b> | <b>1</b> |
| 6. 4 | Stage micrometer                          | 59-1403 stage micrometer Wolfe<br>caliberated glass slides with 1mm<br>scale length divided into 100 parts (1<br>division = 0.01mm) use for<br>determination of objective<br>magnification and measurement of<br>objects.  | <b>Equivalent</b> | <b>1</b> |
| 7. 5 | Prime Thermal<br>Cyclers                  | Sample capacity: 0.2ml: 96, Sample<br>capacity: 0.5ml: 60<br>Sample capacity: 384 well: Yes,<br>Maximum heating rate: 3.4°C/s Block  | <b>Equivalent</b> | <b>1</b> |

|     |                                    |   |                   |   |
|-----|------------------------------------|---|-------------------|---|
|     |                                    | temperature range: 4°C to 100°C,<br>Block uniformity at 55°C: $\leq \pm 0.3^\circ\text{C}$ ,<br>Temperature accuracy at 55°C: $\leq \pm 0.25^\circ\text{C}$ , Maximum<br>Gradient: 29°C (19°C for 384),<br>Minimum Gradient: 8 peltier<br>element/block<br>selec table heated lid temperature:<br>100°C to 115°C or off |                   |   |
| 8.  | Refrigerators                      | Routine use Refrigerator; Capacity: at least 480 Litres, with at least 90 Litre Freezer compartment Voltage: 125-260 (Low Voltage operation); Freezer Temperature: -20°C; Refrigerator Temperature: 5°C Storage Period in Event of Power Failure (h): 100 Hours   | <b>Equivalent</b> | 2 |
| 9.  | Centrifuges                        | Desktop Centrifuge with stainless steel material with digital display, Max Speed <8000 rpm/min, Capacity: 12*20ml or 1.5ml-2ml*24, Timing: 0~60min, Power Supply: AC220V, 50Hz, Microprocessor control, with mechanical lock; Manufacturer Germany, Japan, UK, USA or equivalent  | <b>Equivalent</b> | 1 |
| 10. | Soil test kit with refill reagents | Texture test kit: to determine sand, silt, and clay fractions. Garden test kit: to determine nitrogen, phosphorus, potassium, and soil pH levels.<br>Nutrient test kit: to determine micronutrient, macronutrient and pH levels.  | <b>Equivalent</b> | 1 |
| 11. | Sieve shaker                       | Range: 20 $\mu\text{m}$ to 125 mm<br>Drive / sieving motion: electromagnetic 3D<br>Amplitude: 0 - 3 mm digital setting in 10 steps<br>Sieve diameter: 100 / 200 mm<br>8"  | <b>Equivalent</b> | 1 |
| 12. | Digital camera                     | Cyber shot 20mp   | <b>Equivalent</b> | 1 |
| 13. | Thermoanemometer (Hot wire-CFM)    | Dual line,4-digit LCD, power six AAA batteries,dimensions:2 13/16" WX 7" X 1 1/3 D, Air velocity range:40 to 3346 ft/min, resolution 1 ft/min, accuracy 3% of reading, air volume 0 to 999.990 cfm,temp.range:32 to 122 f.  | <b>Equivalent</b> | 1 |

|     |                                     |   |                   |           |
|-----|-------------------------------------|---|-------------------|-----------|
| 14. | Microwave oven                      | Kitchen Microwave oven; Capacity: 32 Liters and above; Inside clearance of at least 9 inches for flasks. Digital display with digital control   | <b>Equivalent</b> | 1         |
| 15. | Secchi Disc Kit                     | Includes detachable 24 oz. zinc sounding weight.<br>Silk screened black and white quadrants<br>20cm diameter polycarbonate disc   | <b>Equivalent</b> | <b>1</b>  |
| 16. | Fishing nets                        | Gill nets (mesh size: 0.5 to 1inch), scooped nets, hand line  | <b>Equivalent</b> | <b>3</b>  |
| 17. | GPS                                 | Water proof GPS 12 to mark 500 waypoints in 20 route  | <b>Equivalent</b> | <b>1</b>  |
| 18. | Screw capped test tube              | 5ml and 10 ml   | <b>Equivalent</b> | <b>50</b> |
| 19. | Dual purpose nets                   | Bags with 17 inches anti-tear muslin with an 8 inches tip of strong nylon netting.  | <b>Equivalent</b> | <b>5</b>  |
| 20. | Anaerobic Jar                       | Transparent Anaerobic Culture Jar of 3.5 lit. capacity which is made of Polycarbonate. The lid of the jar is made of Aluminium Pressure die casting fitted with Pressure valve, Vacuum valve, Safety valve & Compound Pressure cum vacuum gauge, three finger aluminium clamp and sealing "O" ring and Air/Gas chuck<br>This is recommended only where inside condition of air of jar is removed thru vacuum pump and CO <sub>2</sub> is filled in the jar thru CO <sub>2</sub> gas cylinder to generate anaerobic conducting in the jar. Also Supplied with Plain aluminium Pressure die casted lid which can be fitted when readymade gas packs are used to generate the anaerobic conditions inside the jar.<br>Supply as above and completed with following accessories<br>Petri Plate Carrier, Stainless steel, for 10 petri Dishes. | <b>Equivalent</b> | <b>5</b>  |
| 21. | Micropipette Analogue Multi Channel | Five colors optional<br>Comfortable and simple to use<br>Precise pipetting control<br>Robust and lightweight<br>0.1-100ml volumetric or serological pipettes can be used  | <b>Equivalent</b> | <b>2</b>  |

|     |                                       |  |                   |          |
|-----|---------------------------------------|--|-------------------|----------|
|     |                                       | Filling and delivery are easily controlled with a small sensitive lever<br>Uses integral and replaceable 3um filter<br>Easy to maintain and clean  |                   |          |
| 22. | Micropipette<br>Electronic All in One | 0.5–10 (grey button), 20 µl,<br>Volume 1 µl,   | <b>Equivalent</b> | <b>2</b> |
| 23. | Freezer (-40°C)                       | Vertical (-20 to -40, capacity 10 Cu, ft(28)cu, Voltage 220 / 230 V AC<br>Manufacturer Germany, Japan, UK, USA or equivalent   | <b>Equivalent</b> | 1        |
| 24. | High Speed Mini Centrifuge            | Maximum speed: 15000rpm, increment: 100rpm<br>Maximum RCF: 15100×g, increment: 100×g<br>Capacity: 12 x 1.5 / 2 ml or more, rotors included<br>Driving Motor: Brushless DC motor.<br>Timer: 30 seconds -99 minutes-HOLD, continuous operation, Door interlock; Over-speed detector; Over-temperature detector; Automatic internal diagnosis, Power requirements: Single-phase, 220V, Speed/RCF switch; Pulse operation; Processing display; Fully autoclavable Aluminum alloy rotor with high mechanical strength<br>Maximum speed: 15000rpm, increment: 100rpm<br>Maximum RCF: 15100×g, increment: 100×g<br>Capacity: 12 x 1.5 / 2 ml or more, rotors included<br>Driving Motor: Brushless DC motor.<br>Timer: 30 seconds -99 minutes-HOLD, continuous operation, Door interlock; Over-speed detector; Over-temperature detector; Automatic internal diagnosis, Power requirements: Single-phase, 220V, Speed/RCF switch; Pulse operation; Processing display; Fully autoclavable Aluminum alloy rotor with high mechanical strength | <b>Equivalent</b> | 1        |
| 25. | Planktonic nets                       | Mesh size: 55µm. Plankton Nets are a modification on the standard trawl used to collect planktonic organisms, of nearly any size,  | <b>Equivalent</b> | <b>3</b> |

|     |                            |   |                   |           |
|-----|----------------------------|---|-------------------|-----------|
|     |                            | intact  |                   |           |
| 26. | Micro forceps              | Made of thin spring steel, they are available with a variety of tip designs, which can be further adapted using a sharpening stone.   | <b>Equivalent</b> | <b>10</b> |
| 27. | Fishing nets               | Gill nets (mesh size: 0.5 to 1inch), scooped nets, hand line  | <b>Equivalent</b> | <b>5</b>  |
| 28. | Zooplankton counting wheel | With standard wheel and 4 inches square base  | <b>Equivalent</b> | <b>2</b>  |
| 29. | GPS                        | Water proof GPS 12 to mark 500 waypoints in 20 route  | <b>Equivalent</b> | <b>2</b>  |
| 30. | Dissection box             | With microscopic forceps/ razors etc.   | <b>Equivalent</b> | <b>6</b>  |
| 31. | Berlese apparatus          | 1 qt. Bottle sets to trap insects.  | <b>Equivalent</b> | <b>20</b> |
| 32. | Screw capped test tube     | 5ml and 10 ml   | <b>Equivalent</b> | <b>50</b> |
| 33. | Killing jars               | For killing insects   | <b>Equivalent</b> | <b>50</b> |
| 34. | Dual purpose nets          | Bags with 17 inches anti-tear muslin with an 8 inches tip of strong nylon netting.  | <b>Equivalent</b> | <b>10</b> |
| 35. | Fish Measuring boards      | Wooden board with attached 1 meter scale.   | <b>Equivalent</b> | <b>10</b> |
| 36. | Automatic fish feeder      | 115V, 60 cycle AC only.   | <b>Equivalent</b> | <b>10</b> |
| 37. | Fungus Guards              | Detector For fungal diseases  | <b>Equivalent</b> | <b>10</b> |
| 38. | Vertical Autoclave         | Material: Stainless Steel; Temperature Range: 50 °C To 230 °C; Pressure Range (psi) 15 psi; Chamber Volume (Litre) 20-25 Litre; Shape: Vertical; Insulation Wall: Double Wall; Automation Grade Fully automatic; Voltage 220 / 230 V AC; Manufacturer Germany, Japan, UK, USA or equivalent   | <b>Equivalent</b> | 1         |
| 39. | ELISA Machine              | Detection Modes: UV/vis absorbance spectra; Digital display; Measurement Modes: Endpoint and kinetic, Spectral scanning (absorbance), Well scanning; Micro plate Formats: standard 96 well plate; Light Sources: High energy xenon flash lamp; Detectors: CCD Spectrometer; Wavelength Selection: UV/vis absorbance spectrometer with Spectral Range 220 - 1000 nm; OD range: 0 to 4 OD; Software compatible with Windows 7/8/10, XP Manufacturer Germany, Japan, UK, USA or equivalent | <b>Equivalent</b> | 1         |

|     |                                 |   |                   |                              |
|-----|---------------------------------|---|-------------------|------------------------------|
| 40. | Microscopic Slides              | Biology Microscope Slide Set, Animal kingdom all microscopic Phylum slide set, Meiosis and mitosis slide set, zoology microscopic slide set   | <b>Equivalent</b> | 1                            |
| 41. | Amphibian collection            | models of amphibian both stuffed animals and preserved  | <b>Equivalent</b> | One Species from Each family |
| 42. | Reptiles collection             | models of Reptiles both stuffed animals and preserved   | <b>Equivalent</b> | 1 Each                       |
| 43. | Birds collection                | models of birds both stuffed animals and preserved  | <b>Equivalent</b> | 1                            |
| 44. | Photograph and chart collection | Different charts/ Pictures of animal kingdom and different body/cell systems  | <b>Equivalent</b> | 100                          |
| 45. | Sound tape collection           | Sound collections tapes of animals including birds/mammals/reptiles etc.  | <b>Equivalent</b> | 100                          |
| 46. | Mammals collections             | Different models of mammals both stuffed and preserved animals  | <b>Equivalent</b> | One Species from Each family |
| 47. | pH meters                       | Benchtop pH/mV/°C/°F Meter<br>Standard laboratory pH meter, 1 to 3 points calibration, automatic temperature compensation, Accuracy: 0.01pH.<br>pH Range: -1.00~15.00 pH, mV<br>Range: -1000~1000mV<br>Temperature<br>Range: 0~105°C, 32~221°F,<br>Temperature Units: °C or °F<br>Others<br>Hold Function: Manual or Automatic,<br>Power Off: Manual or Automatic<br>Display: LCD<br>Power Requirements: DC, using AC adapter, 220VAC Germany, Japan, UK, USA or equivalent | <b>Equivalent</b> | 03                           |
| 48. | Balances                        | Electronic balance digital top loading, One single block non-breakable, Readability: 0.01gm, Capacity: 3000gm at least, piece counting function built in, overload protection, windows direct function, operated on battery as well as 220 volts adapter included   | <b>Equivalent</b> | 2                            |

|     |                                  |  |                   |        |
|-----|----------------------------------|--|-------------------|--------|
|     |                                  | USA, Germany, UK, Japan or equivalent  |                   |        |
| 49. | Analytical Digital Balance Scale | Measurement range 0.001g 1mg 1000g<br>MODEL NO: JJ323BC<br>G&G-GERMAN  | <b>Equivalent</b> | 1      |
| 50. | Digital Balance Scale            |  | <b>Equivalent</b> | 1      |
| 51. | Gel electrophoresis kits         | Vertical, horizontal and different sizes with power supply   | <b>Equivalent</b> | 4      |
| 52. | Animal Models                    | Animal cell, Amoeba, Paramecium, Hydra, Frog Digestive System, Frog Arterial System, Frog Venous System, Frog Reproductive System Female, Frog Reproductive System Male, Frog Brain, Frog Respiratory, Life History of Frog, Frog Dissection, Frog Skin, Frog Heart, Frog Ear, Fish Dissection, Life History of Silk Worm, Life History of Silk Moth, Life History of Mosquito, Life History of Honey Bee, Life History of Butter Fly, Meiosis (Animal Cell Division), Euglena, Tape Worm, Earth Worm Dissection, Budding in Hydra, Hydra L S, Amoeba, Cockroach Digestive System, Cockroach Respiratory System, Cockroach Reproductive System Female, Cockroach Reproductive System Male, Cockroach Nervous System, Cockroach Dissection System, Pigeon Dissection System, Rat Dissection System. | <b>Equivalent</b> | 1 Each |
| 53. | Routine Binocular Microscope     | Model BME-500E<br>Biobase China  | <b>Equivalent</b> | 4      |
| 54. | Incubator                        | Ambient +5° to 75°C, Temperature Accuracy: ±0.25°C, Temperature Uniformity: ±0.25°C, Temperature Increments: +0.1°C, Temperature Stability: +0.1°C, Timer: 1 min. to 48 hours / continuous, Chamber Material: Stainless Steel (316), Electrical: 120V or 230V, 50-60Hz, Power Consumption: 40L: 420W / 70L: 520W / 130L: 670W  | <b>Equivalent</b> | 1      |
| 55. | Autoclave machine                | 3 ph, 208/230/400/440/480 Volts  | <b>Equivalent</b> | 1      |



|     |                     |  |                   |   |
|-----|---------------------|--|-------------------|---|
|     |                     | 1ph, 230 Volts (requires switch box - optional)<br>50/60 Hz<br>9Kw   |                   |   |
| 56. | Compound microscope | <p>USB Digital Camera, + connected with computer/LED Eyepiece: WH10X/22mm and WH25X/9<br/>Mechanical Stage: 7.1"x5.9" (180mm × 150mm) Stage Traveling Range: 3"x 2" (75x50mm)<br/>Condenser: N.A. 1.25, swing with iris diaphragm &amp; filter<br/>Illumination: Kohler, halogen 12V/20W<br/>Power Supply: 85V-230V wide</p> <p>Camera Specifications:<br/>Pixel Size: 2.2</p> <p>Stage Traveling Range: 3"x 2" (75x50mm)<br/>Condenser: N.A. 1.25, swing with iris diaphragm &amp; filter<br/>Illumination: Kohler, halogen 12V/20W<br/>Power Supply: 85V-230V wide</p> <p>Camera Specifications:<br/>Pixel Size: 2.2</p> <p>Resolution: 5.1MP<br/>Compatibility: Windows (32/64 bit) 10, Mac OSX, Linux</p> <p>LED for display</p> | <b>Equivalent</b> | 6 |

Chemicals for Zoology

| Sr.No | Item Name                         | QTY      |
|-------|-----------------------------------|----------|
| 1.    | Aluminium Foil                    | 20 roll  |
| 2.    | Filter Paper                      | 20 roll  |
| 3.    | Paraffin film                     | 20 roll  |
| 4.    | 2-Mercaptoethanol                 | 1 liter  |
| 5.    | Boric Acid Analytical grade       | 03 kg    |
| 6.    | Bromophenol Blue                  | 10 g     |
| 7.    | Ethidium bromide Analytical grade | 50 g     |
| 8.    | Formaldehyde Analytical grade     | 10 liter |

|     |  |            |
|-----|--|------------|
| 9.  | Methylated sprite                            | 50 liter   |
| 10. | Isopropanol Analytical grade                 | 05 liter   |
| 11. | Methyl blue indicator Analytical grade       | 25 g       |
| 12. | Nitric Acid Analytical grade                 | 05 liter   |
| 13. | Safranine stain Analytical grade             | 25 g       |
| 14. | Cover Slips 18x18                            | 500 pack   |
| 15. | Slides                                       | 500 pack   |
| 16. | Gloves (without Powder) Small, medium, large | 150 pack   |
| 17. | CTAB   | 2 kg       |
| 18. | Paraffin wax                                 | 5 kg       |
| 19. | Hydrogen per oxide                           | 2 liter    |
| 20. | Calcium Chloride                             | 2 kg       |
| 21. | Ammonium per sulfate                         | 50 g       |
| 22. | ABO Blood testing kits                       | 5          |
| 23. | Phenol Chloroform Isoamylalcohol             | 01 liter   |
| 24. | DNA loading dye                              | 10 ml      |
| 25. | DNA Extraction kit (blood)                   | 1          |
| 26. | DNA Extraction kit (saliva)                  | 1          |
| 27. | DNA Ladder 100bp, 50 bp, 1 Kb                | 250 µg x 5 |
| 28. | Glasswares                                   |            |
| 29. | Brown Glass Bottle 200 ml                    | 10         |
| 30. | Brown Glass Bottle 100 ml                    | 10         |
| 31. | Eppendorf tube 1.5 ml                        | 1000x10    |
| 32. | Erlenmeyer Flask 1000mL                      | 2          |
| 33. | Erlenmeyer Flask 2000mL                      | 1          |
| 34. | Erlenmeyer Flask 250mL                       | 10         |
| 35. | Erlenmeyer Flask 500mL                       | 10         |
| 36. | Erlenmeyer Flask 50mL                        | 5          |
| 37. | Falcon tube 50 ml                            | 100x10     |
| 38. | Falcon tubes 15ml                            | 100x10     |
| 39. | Glass Beaker 1000ml                          | 2          |
| 40. | Glass Beaker 100ml                           | 3          |
| 41. | Glass Beaker 250ml                           | 3          |
| 42. | Glass Beaker 500ml                           | 5          |
| 43. | Glass Bottles 100 ml                         | 3          |
| 44. | Glass Bottles 1000 ml                        | 5          |
| 45. | Glass Bottles 200 ml                         | 10         |
| 46. | Glass Bottles 50 ml                          | 10         |
| 47. | Glass Bottles 500 ml                         | 10         |
| 48. | Graduated Cylinder 1000mL                    | 1          |
| 49. | Graduated Cylinder 100mL                     | 2          |
| 50. | Graduated Cylinder 10mL                      | 2          |

|     |   |          |
|-----|---|----------|
| 51. | PCR tube 0.2 ml (DNase RNase Free)  | 1000x5   |
| 52. | Pipette Sucker (pump/rubber)  | 6        |
| 53. | Pipette tip 10 ul (DNase RNase Free)  | 1000x10  |
| 54. | Pipette tip 1000 ul (DNase RNase Free)  | 1000x10  |
| 55. | Pipette tip 200 ul (DNase RNase Free)   | 1000x10  |
| 56. | Test Tube Rack (plastic/steel)  | 10       |
| 57. | Test Tube   | 100      |
| 58. | Lab Coats different sizes   | 10       |
| 59. | Sterile Gloves latex (Small, Medium, Large)   | 15 boxes |
| 60. | Surgical Blades   | 50 box   |
| 61. | Syringes (5cc)  | 20 box   |
| 62. | Spatulas (glass/plastic/steel)  | 10       |
| 63. | Wash bottles  | 10       |
| 64. | glass graduated pipette sizes (5ml, 10ml, 15 ml, 25 ml and 50 ml)                               | 20       |
| 65. | Micropipette set (0.5 to 2 $\mu$ l, 2 to 20 $\mu$ l, 20 to 200 $\mu$ l and 200 to 1000 $\mu$ l) | 2        |
| 66. | Paraffin film   | 10 roll  |
| 67. | Tips Boxes for 200 ul tips  | 5        |
| 68. | Tips Boxes for 1000 ul tips   | 5        |
| 69. | Glass Funnel different sizes  | 5        |
| 70. | Dissection boxes (29 Pcs Advanced Dissection Dissecting)  | 10       |
| 71. | 96 well PCR/ELISA plates  | 50       |
| 72. | Eppendorf Tube (1.5 ml) Storage Boxes   | 10       |
| 73. | Disposable and sterile plastic Petri plates; 20 per pack.                                       | 50 pkt   |
| 74. | Polythene Gloves (Plain)  | 100 Pkt  |

Animals models and preserved specimens for Zoology

| <b>S.No</b> | <b><u>Animal Models and specimens</u></b> | <b><u>Quantity</u></b> |
|-------------|---|------------------------|
| 1           | Bat                                       | 1                      |
| 2           | Jackal                                    | 1                      |
| 3           | wolf                                      | 1                      |
| 4           | Squirrel                                  | 1                      |
| 5           | Hedge hog                                 | 1                      |
| 6           | Spine ant eater                           | 1                      |
| 7           | mongoose                                  | 1                      |
| 8           | Viper snake                               | 1                      |

|    |   |             |
|----|---|-------------|
| 9  | Turtles   | 1           |
| 10 | Tortoise  | 1           |
| 11 | Toad  | 1           |
| 12 | Eagle   | 1           |
| 13 | Hawk  | 1           |
| 14 | Parrot  | 1           |
| 15 | Pigeon  | 1           |
| 16 | Partridges  | 1           |
| 17 | Quails  | 1           |
| 18 | Kingfisher  | 1           |
| 19 | Woodpecker  | 1           |
| 20 | Phylum Protozoa   | 5 specimens |
| 21 | Phylum porifera   | 5 specimens |
| 22 | Phylum celeontrata  | 5 specimens |
| 23 | Phylum platy helminths  | 5 specimens |
| 24 | Phylum Annelida   | 5 specimens |
| 25 | Phylum Aschelminths   | 5 specimens |
| 26 | Phylum Arthropoda   | 5 specimens |
| 27 | Phylum Mollusca   | 5 specimens |
| 28 | Phylum Echinodermata  | 5 specimens |
| 29 | Articulated and disarticulated bones of frog, rabbit or other vertebrates | 2 sets      |

## Department of Psychology

### Lab Equipment

| S.No | NAME OF ARTICLES                           | Quantity | Specification |
|------|--|----------|---------------|
| 1    | Beck Anxiety Inventory                     | 1        | Manual +test  |
| 2    | Beck Depression Inventory Revised (BDI-II) | 1        | Manual +test  |
| 3    | Bender Visual Motor Gestalt Test           | 1        | Manual +test  |
| 4    | California Psychological Inventory         | 1        | Manual +test  |
| 5    | Childhood Autism Rating Scale (CARS)       | 1        | Manual +test  |
| 6    | Children Personality Questionnaire         | 1        | Manual +test  |
| 7    | Children's Apperception Test (CAT)         | 1        | Manual +test  |
| 8    | Colour Blind Test ( Ishhara) 24 plates     | 1        | Manual +test  |

|    |  |   |              |
|----|--|---|--------------|
| 9  | Colour Blind Test ( Ishhara) 38 plates                     | 1 | Manual +test |
| 10 | Conners Rating Scale –Revised                              | 1 | Manual +test |
| 11 | Differential Aptitude Test (DAT)                           | 1 | Manual +test |
| 12 | Early Learning Goals For Children With Special Needs       | 1 | Manual +test |
| 13 | Edwards Personal Preference Schedule (EPPS)                | 1 | Manual +test |
| 14 | Ghazali Personality Inventory                              | 1 | Manual +test |
| 15 | Good – enough Harris Drawing Test                          | 1 | Manual +test |
| 16 | Gordon Occupational Check List                             | 1 | Manual +test |
| 17 | Group Inventory for Finding Creative Talent (GIFT)         | 1 | Manual +test |
| 18 | House, Tree, Person Test-Revised (HTP-R)                   | 1 | Manual +test |
| 19 | Minnesota Counselling Inventory (MCI)                      | 1 | Manual +test |
| 20 | Minnesota Multiphasic Personality Inventory (English) .    | 1 | Manual +test |
| 21 | Minnesota Multiphasic Personality Inventory (Urdu)         | 1 | Manual +test |
| 22 | Moony Problem Check List                                   | 1 | Manual +test |
| 23 | Neuropsychological Screening Test                          | 1 | Manual +test |
| 24 | Otis Self Administering Test of Mental Ability             | 1 | Manual +test |
| 25 | Raven Progressive Matrices Coloured (RCPM)                 | 1 | Manual +test |
| 26 | Raven Progressive Matrices Standard (RSPM)                 | 1 | Manual +test |
| 27 | Rorschach Psycho – diagnostic Test (Revised)               | 1 | Manual +test |
| 28 | Rotter Incomplete Sentences Blank (RISB)                   | 1 | Manual +test |
| 29 | Sixteen Personality Factors (16–PF)                        | 1 | Manual +test |
| 30 | Study of Values  | 1 | Manual +test |
| 31 | Thematic Apperception Test (TAT)                           | 1 | Manual +test |
| 32 | Wechsler Adult Intelligence Scale - Revised (WAIS-R)       | 1 | Manual +test |
| 33 | Wechsler Intelligence Scale for Children– Revised (WISC-R) | 1 | Manual +test |

|    |   |   |   |
|----|---|---|---|
| 34 | Wechsler Intelligence Scale for Children–<br>Fourth ed. (WISC-IV) | 1 | <b>Manual +test</b>   |
| 35 | DSM V   | 1 | Manual for diagnosis  |
| 36 | Aesthesiometer  | 2 | Apparatus   |
| 37 | After Image Apparatus (Metallic)                                  | 2 | Metallic apparatus  |
| 38 | After Image Apparatus (wooden with Steel<br>Stand)                | 1 | (wooden with Steel Stand)<br>apparatus                            |
| 39 | Asch Cards (Set for 12 Cards)                                     | 2 | (Set for 12 Cards) for<br>demonstration                           |
| 40 | Asch Cards (set of 6 Cards for Practical<br>Notebook)             | 1 | (set of 6 Cards for Practical<br>Notebook)                        |
| 41 | Blind Fold Goggles  | 1 | Goggles for practical<br>demonstration                            |
| 42 | Blind Fold Goggles (Superior Quality)                             | 1 | Goggles (superior quality)  |
| 43 | Blind Spot Apparatus (Eye Rest Stand)                             | 2 | Apparatus used as eye rest<br>stand for practical.                |
| 44 | Blind Spot Card   | 2 | Card containing a blind spot<br>for phi phenomenon practical      |
| 45 | Blind Spot Sheet  | 2 | Sheet for recording the<br>observations taken during<br>practical |
| 46 | Code Learning Card  | 2 | Card containing codes for<br>learning practical                   |
| 47 | Code Learning Chart/Sheet   | 2 | Chart /sheet for recording the<br>errors and observations         |
| 48 | Colour Mapping Zone Apparatus (Perimeter)                         | 2 | Apparatus(perimeter)  |
| 49 | Colour Mapping Zone Chart (Perimeter Chart)                       | 2 | Perimeter chart for<br>observation recording                      |
| 50 | Colour Mixer (Electric)   | 2 | Electric apparatus for<br>practical                               |
| 51 | Condition of Attention Apparatus (Electronic)                     | 2 | Electronic apparatus for<br>practical                             |
| 52 | D.L. Cards (Set of 16 Cards Plastic made)                         | 2 | 16 Plastic made cards for<br>practical observation<br>recording   |
| 53 | D.L. Cards (Set of 16 Cards with Blindfold<br>Goggle)             | 2 | Cards for recording electronic<br>observation with goggles        |
| 54 | Depth Perception Apparatus (As Japan)                             | 1 | Japan made apparatus for the<br>practical                         |
| 55 | Depth Perception Apparatus (As USA)                               | 1 | USA made apparatus for<br>practical                               |
| 56 | Depth Perception Apparatus (Stainless Steel)                      | 2 | Stainless steel apparatus   |
| 57 | Digit Form  | 2 | apparatus   |
| 58 | Digit Span Sheets   | 2 | Sheets for recording<br>observations                              |
| 59 | Exposure Board (Metallic)   | 2 | Metallic board apparatus  |

|    |  |   |   |
|----|--|---|---|
| 60 | Exposure Board (Special)                                   | 2 | Special board apparatus                                   |
| 61 | Form Board   | 2 | Wooden/electronic apparatus                               |
| 62 | Galton's Questionnaire                                     | 2 | Manual +test  |
| 63 | Illusion Board (Metallic)                                  | 2 | Metallic apparatus  |
| 64 | Illusion Cards   | 2 | Cards containing practical readings                       |
| 65 | Illusion Chart   | 2 | Chart for recording observation                           |
| 66 | Kent Rosenof List of words (Free Association List) English | 2 | List of words (English language)                          |
| 67 | Kent Rosenof List of Words (Free Association List) Urdu    | 2 | List of words(Urdu language)                              |
| 68 | Kohn's Block Design Test (without Manual)                  | 2 | Only test   |
| 69 | List of Meaning full words                                 | 2 | List containing words(full)                               |
| 70 | List of Meaningless words                                  | 2 | List containing words(half)                               |
| 71 | Match Board ( Peg board )                                  | 2 | Peg board   |
| 72 | Match Board (Peg Board with Metronome)                     | 1 | Peg board with metronome                                  |
| 73 | Maze for Animal  | 1 | Maze apparatus  |
| 74 | Maze Learning Apparatus                                    | 2 | Maze apparatus  |
| 75 | Maze Learning Apparatus (Electronics)                      | 1 | Electronic maze apparatus                                 |
| 76 | Memory Drum (Electronics)                                  | 2 | Memory drum (electronic)                                  |
| 77 | Meter Rod (Steel)  | 2 | Steel apparatus   |
| 78 | Meter Rod (Wooden)   | 2 | Wooden apparatus  |
| 79 | Metronome (Electronic)                                     | 2 | Electronic apparatus                                      |
| 80 | Mirror Drawing Apparatus (Electronic)                      | 2 | Electronic pen +electronic apparatus                      |
| 81 | Mirror Drawing apparatus (Metallic)                        | 2 | Metallic board with mirror                                |
| 82 | Phi-phenomenon Apparatus                                   | 2 | Electronic apparatus                                      |
| 83 | Physiological Charts                                       | 2 | Charts containing different readings                      |
| 84 | Reaction Time Apparatus                                    | 1 | Electronic apparatus                                      |
| 85 | Reproduction of Design and Picture Cards                   | 2 | Cards +apparatus  |
| 86 | Reversible Figures   | 2 | Cards +apparatus  |
| 87 | Six Pointed Stars  | 2 | Paper containing printed star patterns                    |
| 88 | Size Constancy Apparatus (Screen with Plastic Plates)      | 1 | Screen +plastic plates containing different size pictures |
| 89 | Size Constancy Cards set                                   | 2 | Hard cards set containing different size figures          |
| 90 | Skinner Box for Pigeon                                     | 1 | Skinner box apparatus for pigeon                          |
| 91 | Skinner Box for Rat  | 1 | Skinner box apparatus for rat                             |

|    |   |   |  |
|----|---|---|--|
| 92 | Stop Watch (China)                      | 1 | Stop watch for recording time during practical observation |
| 93 | Stop Watch (Digital China)              | 2 | Stop watch for recording time during practical observation |
| 94 | Tachistoscope Double field (Electronic) | 2 | Double field recording apparatus(electronic)               |
| 95 | Tachistoscope Single field (Electronic) | 2 | Single field recording apparatus(electronic)               |
| 96 | Tapping Test Sheet                      | 2 | Sheet for recording practical observation                  |
| 97 | Tapping Board (Electronic)              | 2 | Electronic board for observation recording                 |

## Department of Botany Women Campus

### Laboratory Equipment

| S.N O | ITEM  | SPECIFICATION   | OR                | QUANTITY |
|-------|---|---|-------------------|----------|
| 1     | <b>Gel electrophoresis Horizontal system</b>        | Dimensions (LxWxH) 11.8 x 10.6 x 4.3 in. (30 x 27 x 11 cm); Type: Wide, With Power Supply   | <b>Equivalent</b> | <b>1</b> |
| 2     | <b>Gel Electrophoresis Vertical vertical system</b> | (A) + 2 sets of glass plates with bonded 1 mm thick spacers + 2 combs, 1 mm thick, 24 samples + cooling pack + dummy plate Power supply for electrophoresis EV243 Mini power supply, 400 V / 300 mA / 50 W Electrophoresis Unit Gel Caster Unit   | <b>Equivalent</b> | <b>1</b> |
| 3     | <b>Hot Air Oven</b>                                 | "Maximum temperature (OC) 300<br>Chamber dimensions (mm - h x w x d)<br>400/392/420<br>Volume (l) 66<br>Shelves: No supplied: 2 Maximum possible: 5<br>Maximum load/shelf (kg): 10 Maximum load (kg): 30 Temperature uniformity @ maximum temperature as a %:+<br>1.0. PID control+ 0.2. Heat up time to 300oC (mins) 25<br>Recovery time to 100oC1 | <b>Equivalent</b> | <b>1</b> |
| 4     | <b>Deionizer Plant with four cartridges</b>         | Type 2 water using reverse osmosis and deionization technology * 1 -15 MΩ -cm *<br>Type 2 Water Quality general laboratory grade water * >50% recovery of RO water *<br>Novel recirculation process extends the life of RO membrane and DI cartridges *<br>TOC<br>feed water pressure * Up to 98% rejection of inorganics * Wall mounting brackets  | <b>Equivalent</b> | <b>1</b> |



|    |   |   |                   |          |
|----|---|---|-------------------|----------|
|    |   | included * Bench, reservoir top or wall mounting * Excellent monitoring of conductivity * SD Card interface * 60 liter capacity reservoir Dimensions (W x H x D): 19.29 x 19.68 x 11.41"  |                   |          |
| 5  | <b>Water Distillation Plant (Water still)</b> | Distillation Capacity: 2 lit per minute , Storage reservoir, Resistivity 18.2 MΩ•cm, Organic Carbon < 5 ppb, Germ < 0.01 CFU/ml, VoPyrogin endotoxin  | <b>Equivalent</b> | <b>1</b> |
| 6  | <b>Top loading Balance</b>                    | "READABILITY: 0.001g CAPACITY: 310g PAN SIZE: Ø100mm  | <b>Equivalent</b> | <b>1</b> |
| 7  | <b>Analytical balance</b>                     | 321-62900-32 "Model: AUW220D Display: 0.1mg/0.01mg Capacity: 220g/82g Pan Size: Ø 80  | <b>Equivalent</b> | <b>1</b> |
| 8  | <b>pH Meter Bench Top</b>                     | "Range: -2 to 19.999 pH, Resolution: 0.001/0.01/0.1pH, Accuracy: ±0.003, mV range: ±1999mV, Resolution: 0.1 mV, Accuracy: ± 0.2mV. Temperature: Range: -10 to +105 °C (14 to 221°F), Resolution: 0.1°C (1 °F) Accuracy: ±0.5°C (±1°F), ATC range: 0 to 100 °C (32 to 212°F), Manual temp. Comp: 0 to 100 °C (32 to 212°F)   | <b>Equivalent</b> | <b>1</b> |
| 9  | <b>Refrigerated Centrifuge</b>                | "Specifications: Max Speed: 15000rpm, Max RCF: 21382xg, Max capacity: 4 x 100ml, Temperature range: -20 to +40C, Timer: 1-99min or continuous, Short cycle: impulse key for short cycle Angle Rotors: Capacity: 8 X 50ml Falcon tubes, 32 x 15ml falcon tubes, speed: 4500rpm, RCF: 3283xg Angle Rotor: Capacity: 24 x 1.5ml, speed: 15000rpm, RCF: 21382xg Falcon Tubes: 16 Nos Tubes: 30 Nos (1.5/2.0ml)" | <b>Equivalent</b> | <b>1</b> |
| 10 | <b>Micropipettes Adjustable</b>               | • tips • Hangers • Racks<br>0.5-10ul , 2-20ul, 10-100ul, 5-50ul, 100-1000ul True one handed volume adjustment. • Volume lock • Easily visible, 4 digit display  | <b>Equivalent</b> | <b>1</b> |
| 11 | <b>Rotating Water Bath</b>                    | Capacity: 14 liters<br>Working dims: 219w x 298d x 150h mm<br>Overall dims: 361w x 332d x 170h mm NE4 – 14P SL4-14: Stainless Steel Gable Lid to suit 14  | <b>Equivalent</b> | <b>1</b> |

|    |   |   |                   |          |
|----|---|---|-------------------|----------|
|    |   | Litre Baths   |                   |          |
| 12 | <b>Magnetic Stirrer/Hot Plate Power</b> | (W): 500, Max. Plate Temp °C: >450<br>Temp Control °C: + 5°C Stirrer Speed (rpm): 0-2000<br>Plate Dimensions (mm): 210 x 210 Heat Area (mm): 150x150.<br>Make:U.K   | <b>Equivalent</b> | <b>1</b> |
| 13 | <b>Microscope with CCD Camera</b>       | "Magnification Range 40x - 1000x. Microscope Body Sturdy, 270 x 250 mm base with supportive rubber feet Nosepiece Quadruple, forward- turned mechanism with multiple ball bearings, elastic nosepiece grip ring Quadruple, reverse- angle mechanism with multiple ball bearing, elastic nosepiece grip-ring Head Binocular Arctype Siedentopf Head, 30° inclined, 360° rotatable, interpupillary distance 48 - 75 mm, provided with Anti-Fungus "   | <b>Equivalent</b> | <b>1</b> |
| 14 | <b>Ultra Centrifuge</b>                 | "Max speed of the machine should not less than 100000rpm Machine can attain max RCF of 803000g, Speed control accuracy should be +10rpm, Rotor temperature control accuracy +0.5C (set temp range 0 to 40C) thermo module cooling system, Touch screen control panelRLM rotor: automatic management, Rotor with optical adaptor: management by registration system, Angle rotor 8x6.5ml with speed of 100000rpm & 803000g RCF, Swing out rotor 6x13ml with speed of 40000rpm & 284000g RCF Swing out rotor 6x5ml with speed of 55000rpm & 366000g RCF, Other rotors should be quote optionally. | <b>Equivalent</b> | <b>1</b> |
| 15 | <b>Wizard Vortex</b>                    | "Variable speed control between 200 and 2500rpm Intermittent or continuous mode, Stable low profile body, Robust die-cast construction Technical Specification. Speed 200 to 2500rpm Orbit diameter 4.2mm Touch mode Yes Continuous mode Yes Treated Water Quality, Conductivity: 1 – 0. 1 µS – cm  | <b>Equivalent</b> | <b>1</b> |
| 16 | <b>Test Sieve Shaker Soil Measuring</b> | Instruments Test sieve shaker 2. Low noise Durable in use Sieves: 1-8 layers  | <b>Equivalent</b> | <b>1</b> |

|    |  |   |                   |          |
|----|--|---|-------------------|----------|
|    |  | ISO: 9001: 2000 standard  |                   |          |
| 17 | <b>Soil trimmer soil instrument</b>                          | 38mm to 100mm dia specimen MOQ: 10pcs<br>ELE quality  | <b>Equivalent</b> | <b>1</b> |
| 18 | <b>Compounds Portable Pocket4 spectrometer soil analyzer</b> | 1.Weight:1.35KG Handheld 2.Precision 0.001%~0.01% 3.Analysis element:M  | <b>Equivalent</b> | <b>1</b> |
| 19 | <b>Cooling Incubators Refrigerated</b>                       | Incubator with forced convection Electronically controlled<br>APT.line™ preheating chamber technology<br>Temperature range: - 10 °C to 100 °C (14 °F - 212 °F)<br>Benchtop: 0 °C - 100 °C (32 °F- 212 °F) alarm, Inner glass door   | <b>Equivalent</b> | <b>1</b> |
| 20 | <b>Fume Hood Vertical laminar flow clean benches</b>         | Air Volume (Minimum / Maximum) 0 to 1020 cmh / 0 to 600 cfm Laminar Airflow Velocity (m / s / fpm) 0.3 / 59 Air Cleanliness within Work space: ISO 14644-1 Class 4, US Federal Standard 209E Class 10 HEPA Filter, Pre Filter Main Body Steel powder coating. Work Surface Stainless steel grade 304, Hairline treatment Windows (Front / Side) Colorless and transparent UV absorbing 5mm tempered glass, Illumination<br>, Intensity (lux) > 650 Fluorescent lamp (W) 2Wx2ea. Electronically ballasted Fluorescent Lamp, UV lamp (W) 30Wx1ea / 25Wx2ea, electronically ballasted UV Lamp, Electric Socket Outlets 230V socket | <b>Equivalent</b> | <b>1</b> |
| 21 | <b>UV. Transilluminator Ultravue</b>                         | Transilluminator<br>Single Intensity ,dual wavelength Filter : 20 x 20(cm)<br>Tube : 6 x 8W, 5 x 8W Wavelength : 365,254(nm)  | <b>Equivalent</b> | <b>1</b> |
| 22 | <b>Thermal Cycler TC-Plus Thermal Cyclers</b>                | colour touchscreen, automatic, non-motorised heated lid, thermal energy recovery system and a unique space-saving stackable design. The TC-PLUS and Satellite units can be combined to form any multi-block format with the Satellites  | <b>Equivalent</b> | <b>1</b> |
| 23 | <b>Vertical Laminar flow</b>                                 | cabinet Airstream vertical laminar flow cabinet 4ft Parameters / Specifications, Inner Dimension<br>52.7 X 28.8 X 55.1 WXD XH Working Place<br>Stain less stelll holed plan Material outer Powder coated steel Filter system Two HEPA   | <b>Equivalent</b> | <b>1</b> |

|    |                         |   |                   |          |
|----|-------------------------|---|-------------------|----------|
|    |                         | filter Filter efficiency More than 90% / 0.3 micron Pre filter 3.3µartucke renivak recyclable   |                   |          |
| 24 | <b>Micro centrifuge</b> | Speed: 6000rpm RCF: 4025xg<br>Capacity: 6 x 15/50ml   | <b>Equivalent</b> | <b>1</b> |
| 25 | <b>Fermenter System</b> | <p>Power Universal power supply for mains 100-245 V AC/50-60Hz, 560W, CE conform</p> <p>Dimensions 22 x 40 x 38 cm (W x D x H)</p> <p>Display LCD 4 x 40 digits with backlight illumination</p> <p>Fermentor vessel Pyrex glass with 6 to 8 side necks; 0.3, 0.4, 1, 3, 7 liter vessels</p> <p>Temperature control High efficiency 150 W infrared (IR) radiation heat source with gilded parabolic reflector</p> <p>Regulation from 5°C over RT to 70°C</p> <p>Measurement from 0 to 99.9°C in 0.1°C steps</p> <p>Precision +/- 0.2°C (0 to 60°C)</p> <p>Sensor Pt 100 incorporated in the glass electrode of the pH probe</p> <p>pH control sterilisable pH electrode pH 0-14 with automatic temperature correction, two-point semiautomatic calibration and Variopin connector</p> <p>Resolution 0.01 pH unit</p> <p>Precision +/- 0.02 pH unit</p> <p>pO2 control sterilisable Clark type oxygen sensor with fast response, automatic temperature correction, two-point semiautomatic calibration, dissolved oxygen (DO) control through regulation of the airflow rate</p> <p>Range 0 to 25 mg oxygen/l, in 0.1 mg/l steps</p> <p>Air flow 0 to 5 l/min in 0.01 l/min steps, measured by precise mass flow meter, linearity +/- 3%, reproducibility +/- 0.5%</p> <p>Control proportional valve controlled by microprocessor</p> <p>For supplied air pressure 0.05 – 0.2 MPa (0.5 - 2 atm)</p> <p>Agitation 50 W Vibromixer 0 to 20 Hz (0 to 1200 rpm) in 0.1 Hz steps (6 rpm) with 1 or more stirring discs; Sterility similar to magnetic coupling</p> <p>Selectable parameter an additional parameter can be controlled by the instrument (foaming control, weight (for continuous cultures), pCO2, redox potential, conductivity, optical density, etc.); with standard 0-10V or 0-20mA output</p> <p>Ports One large quadruple sampling or additions port with four needles with LAMBDA PEEK double-seal connections, used for sampling, inoculation, antifoam, feeds, harvest, addition of correction solutions etc., additional double ports are available.</p> <p>Pumps up to 4 independent pumps (PRECIFLOW, MULTIFLOW, HIFLOW or MAXIFLOW) with speed variation from 0 to 100 % can be used with MINIFOR lab fermenter-bioreactor</p> <p>Gas flow control In addition to pumps, several electronic flow controllers with flow rate ranges of 0-5 l/min (MASSFLOW 5000) or 0-500 ml/min (MASSFLOW 500) can be used for the controlled addition of gases (e.g.</p> | <b>Equivalent</b> | <b>1</b> |

|    |   |  |                   |          |
|----|---|--|-------------------|----------|
|    |   | N <sub>2</sub> , O <sub>2</sub> , air, CO <sub>2</sub> ) in cell cultures; freely configurable gas station module<br>Working temperature 0 – 40 °C<br>Working humidity 0 - 90 % RH, not condensing<br>Weight 7.5 kg<br>PC control complete PC control and data processing using the fermentation software FNet (for up to 6 MINIFOR fermenters) or SIAM (for an even higher number of instruments) |                   |          |
| 26 | <b>ELIZA System Universal Micro plate</b>                               | Reader with soft ware Reads 24, 48,96 WELL MICROPLATES, 400-750nm Microprocessor Control 220V/50/60Hz Extensive on Board Data analysis Auto Plate Washer Model Elx50 220V/50Hz W/8-Channel manifold Accommod. All 96-well micro plate & strips   | <b>Equivalent</b> | <b>1</b> |
| 27 | <b>Refrigerator &amp; Freezer</b><br>Minus 30 refrigerator              | Freezer Upright -30°C<br>CFC Free, Compact, easy-to-use vertical design, At ambient Temperature of 35°C,<br>Microprocessor Temperature control with digital display, Removable Freezer containers provided. -Exterior imensions: 612 x 755 x 1617 mm. -Interior Dimensions: 490 x 485 x 1290 mm door lock keys   | <b>Equivalent</b> | <b>1</b> |
| 28 | <b>Centrifuge</b> Microprocessor controlled.                            | Maximum speed: 18000 rpm without rotor. Maximum RCF: 31514. Fitted with timer: 1-99 min. Imbalance switch off. Metal housing. Chamber of stainless steel. Speed rpm: input in increments of 10. Power: 220 - 240 VAC, 50/60 Hz: single phase. Temperature range:-20 to+40 C  | <b>Equivalent</b> | <b>1</b> |
| 29 | <b>Refrigerator</b> Freezer upright<br>CFC Free,                        | Compact, easy-to-use vertical design, At ambient Temperature of 35°C, 4°C<br>-Exterior Dimensions: 612 x 755 x 1617 mm. - Interior Dimensions: 490 x 485 x 1290 mm   | <b>Equivalent</b> | <b>1</b> |
| 30 | <b>Electrophoretic Blotting System</b>                                  | CE. 3 Gel cassette capacity. Transfer gels as large as 15 x 21.5cm.  | <b>Equivalent</b> | <b>1</b> |
| 31 | <b>Shaking Bath Volume</b>  | (L / cu ft)55 / 1.9, Working Temperature Range: Amb. +5 to 100 / Amb. +9 to 212. Temperature Stability: 0.2 / 0.36, Shaking system Speed Range (RPM): 20 to 180  | <b>Equivalent</b> | <b>1</b> |
| 32 | <b>Temp. &amp; Humid. Chambers</b><br>Plant Growth Chambers/ Light bank | With controlled and programmable temperature, humidity and light. Chamber Volume (L / cu ft): 1000 / 35.3. Control System Microprocessor PID controller Temperature:   | <b>Equivalent</b> | <b>1</b> |

|    |   |   |                   |          |
|----|---|---|-------------------|----------|
|    |   | Range (C/ f), 5 to 50 / 41 to 122 -<br>Lamp off ,10 to 50 / 50 to 122 -<br>Lamp on, 20 to 50 / 68 to 122 - with humidity<br>Fluctuation, Sensor NDIR CO2 sensor ,Wire<br>Shelves, Perforated Shelves Recorder, CO 2<br>Sensor, Connecting tube.   |                   |          |
| 33 | <b>Stage Micrometers</b>  | Line Thickness<br>0.001mm +0.00025mm/-0.0005mm<br>Glass Type and Thickness<br>B270 1mm thick<br>Scale Length Tolerance<br>+/-0.001mm<br>Mount<br>Stainless Steel Slide with engraved Serial<br>Number<br>Divisional Marker Lengths<br>0.02mm, 0.01mm, 0.006mm<br>Orientation<br>Correct on top surface  | <b>Equivalent</b> | <b>1</b> |
| 34 | <b>Microlab Chemical Analyser</b>   | LS 13 320 XR ,Expanded measurement range:<br>10 nm – 3,500 µm, Polarisation Intensity<br>Differential Scattering <b>etc.</b>  | <b>Equivalent</b> | <b>1</b> |
| 35 | <b>Autoclave digital</b>  | Autoclave Digital Microprocessor Controlled<br>Vertical Unit, Temperature Range 105 to 135° C<br>Interior Chamber Stainless, steel, capacity 50<br>Lit interior chamber dimension 300x710   | <b>Equivalent</b> | <b>1</b> |
| 36 | <b>Automatic titrator</b>   | Potentiometric Automatic Titrator Model AT-<br>510, with standard accessories * Sandard<br>accessories : 20mL burette unit, magnetic stirrer,<br>stirrer cable, electrode holder, stand rod, stirrer<br>spinner, piston rod, wrench, power cord, C171<br>combined glass electrode, electrode cable, T111<br>temp. compensation electrode, IDP-100 printer,<br>internal solution for ref. electrode (250mL), | <b>Equivalent</b> | <b>1</b> |
| 37 | <b>Fast response accurate soil instrument (soil meter)</b>                | Multifunctional of<br>moisture/pH/Temperature/sunlight<br>display2.CE/Rohs certificates3.LCD display  | <b>Equivalent</b> | <b>1</b> |
| 38 | <b>Numerical Soil Compaction Instrument</b>                               | Numerical Soil Compaction Instrument<br>2.Compacting number 30/min 3.High<br>performance product 4.Engine 370W 380V<br>1400t/min  | <b>Equivalent</b> | <b>1</b> |
| 39 | <b>Soil analyzer (soil analyzer mineral Tester, portable gold tester)</b> | 1. Weight: 1.35KG Handheld 2. Precision<br>0.001%~0.01%<br>3. Analysis element: M   | <b>Equivalent</b> | <b>1</b> |

|    |  |   |                   |          |
|----|--|---|-------------------|----------|
| 40 | <b>Test Sieve Shaker Soil Measuring</b>  | Instruments CHINA Supplier 1.Test sieve shaker<br>2.Low noise 3.Durable in use<br>4.Sieves:1-8 layers 5.ISO:9001:2000 standard  | <b>Equivalent</b> | <b>1</b> |
| 41 | <b>Flame Photometer</b>                  | Range: 0 - 199.9Limits of detection: Na/K<br><=0.2ppm / Li <=0.25ppm / Ca<br><=15ppm / Ba <=30ppm Reproducibility:<=1%<br>Coefficient of Variation for 20 consecutive samples using 10ppm Na set to read 50.<br>Linearity: Better than 2% when concentration of 3ppm Na/K and 5ppm Li are set to read 100<br>Specificity Interference from Na/K and Li equal in concentration to test element will be <0.5%<br>Recorder output: Nominal 1.00V for a reading of 100.0 Services Electrical: 90-125V or 190-250V @ 50/60Hz / Air: Moisture and oil free 6 litre/minute @ 1Kg/cm <sup>2</sup> (14psi) / Fuel: propane, butane, natural gas or L.P.G Size: 420 x 360 x 300mm Weight:8Kgs 535 001 Air Compressor (230 Volt) 500 180 Natural Gas Regulator | <b>Equivalent</b> | <b>1</b> |
| 42 | <b>TDS</b>                               | salinity and conductivity meter conductivity ranges: 0-199.9 mS, TDS: 0-999 ppm, calibration upto 5 point ranges: 0-199.9 mS, TDS: 0-999 ppm, calibration upto 5 point  | <b>Equivalent</b> | <b>1</b> |
| 43 | <b>UV Lamp</b>                           | 365/254 nm, 1*6 W 230 V EU  | <b>Equivalent</b> | <b>1</b> |
| 44 | <b>Gel Documentation Systems with PC</b> | Software and Camera ESSENTIAL V2 D-56-26M Auto<br>230VIncluding Essential Software Camera, Motorized zoom, Ethidium Filter<br>Darkroom D-56 with Transilluminator 8w, 312nm Filter 21x26  | <b>Equivalent</b> | <b>1</b> |
| 45 | <b>Protein sequencer</b>                 | <b>Protein</b> Sequencer PPSQ-31A (200V) Startup kit, PPSQ Non dangerous goods<br>STARTUP, PPSQ FROZEN<br>PTFE filter, D16 (50 pieces) Rotor Assy Disk, precolumn filter (10 pieces) Plunger seal D2 lamp, light source   | <b>Equivalent</b> | <b>1</b> |
| 46 | <b>UFLC Gradient System Light</b>        | source: Deuterium lamp & mercury lamp (for wavelength accuracy check)<br>Wavelength range: 190-700nm Cut-off filter to eliminate second-order diffraction is automatically activated for the 371-700nm range. Spectral bandwidth: 8nm Wavelength accuracy: ±1nm Wavelength reproducibility: ±   | <b>Equivalent</b> | <b>1</b> |

|    |   |   |                   |          |
|----|---|---|-------------------|----------|
|    |   | 0.1nm   |                   |          |
| 47 | <b>Real Time Multi-color Quantitative PCR</b> | instrument with all accessories including computer & Software Technical Specification Block format: 96 x 0.2ml well, Thermal cycler block uniformity: Better than $\pm 0.25^{\circ}\text{C}$ Thermal cycler maximum ramp rate: $2.6^{\circ}\text{C}/\text{Sce}$ , Thermal cycler temp rage: $4^{\circ}\text{C} - 99^{\circ}\text{C}$ , Sample volume: 15 – 50 $\mu\text{l}$ , Heated lid: Adjustable between $10^{\circ}\text{C}$ above ambient to $110^{\circ}\text{C}$ , Connectivity: Connect up to 4 Quantica to one computer (1), Thermal gradient: Maximum gradient $30^{\circ}\text{C}$ . Available as an option, Plate format: Low profile 96 well plate, | <b>Equivalent</b> | <b>1</b> |
| 48 | <b>Refrigerated Centrifuge</b>                | Max Speed: 15000rpm, Max RCF: 21382xg, Max capacity: 4 x 100ml, Temperature range: -20 to $+40^{\circ}\text{C}$ , Timer: 1-99min or continuous, Short cycle: impulse key for short cycle Angle Rotors: Capacity: 8 X 50ml Falcon tubes, 32 x 15ml falcon tubes, speed: 4500rpm, RCF: 3283xg Angle Rotor: Capacity: 24 x 1.5ml, speed: 15000rpm, RCF: 21382xg Falcon Tubes: 16 Nos Tubes: 30 Nos (1.5/2.0ml)   | <b>Equivalent</b> | <b>1</b> |
| 49 | <b>Gradient PCR</b>                           | 96 wells Prime Thermal Cyclers Sample capacity: 0.2ml: 96, Sample capacity: 0.5ml: 60 Sample capacity: 384 well: Yes, Maximum heating rate: $3.4^{\circ}\text{C}/\text{s}$ Block temperature range: $4^{\circ}\text{C}$ to $100^{\circ}\text{C}$ , Block uniformity at $55^{\circ}\text{C}$ : $<\pm 0.3^{\circ}\text{C}$ , Temperature accuracy at $55^{\circ}\text{C}$ : $<\pm 0.25^{\circ}\text{C}$ , Maximum Gradient: $29^{\circ}\text{C}$ ( $19^{\circ}\text{C}$ for 384), Minimum Gradient: 8 peltier element/block selectable heated lid temperature: $100^{\circ}\text{C}$ to $115^{\circ}\text{C}$ or off  | <b>Equivalent</b> | <b>1</b> |
| 50 | <b>Ice maker</b>                              | Maximum Capacity BTU Per Hour: Q-130: 2,400 (average) 2,900 (peak) Q-170: 2,200 (average) 2,600 (peak) Compressor: Nominal rating: .42 HP Cupra-Nickel Condenser: (Water-cooled models)   | <b>Equivalent</b> | <b>1</b> |



|    |   |  |                   |          |
|----|---|--|-------------------|----------|
|    |   | <p>Adds protection from corrosive water elements.</p> <p>Operating Limits:</p> <ul style="list-style-type: none"> <li>- Ambient Temperature Range: 40° to 110°F (4.4° to 43.3°C)</li> <li>- Water Temperature Range: 45° to 90°F (4.4° to 32.2°C)</li> <li>- Water Pressure Ice Maker Water In: Min. 20 psi (137.9 kPA) Max. 80 psi (551.1 kPA)</li> <li>- Condenser Inlet Water In: (Water-cooled only)<br/>Min. 20 psi (137.9 kPA)<br/>Max. 150 psi (1,034.2 kPA)</li> </ul>   |                   |          |
| 51 | <b>Air condensor Ceiling Cassette Multi-Zone Heat Pumps</b> | <p>2014 model M12yj. Cooling Capacity 12000 (Btu/hr) colony counter Digital display 3 digit LED Count 0 to 999<br/>Dish size 50 to 90mm USB 2x USB 2.0<br/>Screen Size 15"<br/>Brightness 250 lumens/m<sup>2</sup><br/>Resolution 1024 x 768 Touch screen technology Resistive 5 levels</p>  | <b>Equivalent</b> | <b>1</b> |
| 52 | <b>Fire extinguishers</b>                                   | <p>Agent: Foam<br/>Type: Portable Fire Extinguisher<br/>Certification: CCCC, GB8013-2005, CCC, UL, CE<br/>Portable Extinguisher: Portable Foam Fire Extinguisher</p>   | <b>Equivalent</b> | <b>1</b> |
| 53 | <b>Micrometer eyepiece</b>                                  | <p>59-1405 Fillar micrometer eyepiece Wolfe. 10x eye pice with movable fine lines. Rotation of one division of graduated knob corresponds to 0.01mm movements of lines in the field of view. Range of measurements is 10mm.</p>  | <b>Equivalent</b> | <b>1</b> |
| 54 | <b>GPS</b>  | <p>Physical dimensions 2.4" x 4.5" x 1.3" (6.1 x 11.4 x 3.3 cm). Weight 7.4 oz (209.8 g) with batteries. Water rating IPX7. Battery rechargeable NiMH pack (included).<br/>Touchscreen Yes. Display type transfective color TFT touchscreen.<br/>Display size 1.5"W x 2.5"H (3.8 x 6.3 cm); 3" diag (7.6 cm). Display resolution 240 x 400 pixels. Battery life up to 16 hours. Memory/History 4 GB. High-sensitivity receiver. Interface high-speed USB and NMEA 0183 compatible. Ability to add maps Yes. Basemap Yes. Storage and</p> | <b>Equivalent</b> | <b>1</b> |

|    |                              |  |                   |          |
|----|------------------------------|--|-------------------|----------|
|    |                              | Power Capacity microSD™ card up to 32 GB (not included).<br>Waypoints/favorites/locations 10,000.<br>Routes 250. Track log 20,000 points, 250 saved tracks. Barometric altimeter Yes.<br>Compass Yes (tilt-compensated 3-axis).<br>Area calculation Yes. Automatic routing (turn by turn routing on roads) Yes (with optional mapping for detailed roads).<br>Camera yes (8 megapixel with autofocus; digital zoom). |                   |          |
| 55 | Stage micrometer             | 59-1403 stage micrometer Wolfe calibrated glass slides with 1mm scale length divided into 100 parts (1 division = 0.01mm) use for determination of objective magnification and measurement of objects.   | <b>Equivalent</b> | <b>1</b> |
| 56 | Grinder Mill                 | High speed main shaft, basket head, belt pulley (passed the static and dynamic equilibrium test)<br>Equipped with double-layer cylinder to avoid hydraulic oil leakage after long time using.<br>Control system: power sign, POWER ON/OFF, RPM METER, SPEED ACC/DEC, URGENT STOP, HYDRAULIC UP/DOWN.<br>Belt clamp or manual clamp or pneumatic clamp is for optional  | <b>Equivalent</b> | <b>1</b> |
| 57 | Lux Meter                    | - 3-Axis acceleration up to 800 Hz<br>- 32 GB SD memory card<br>- Evaluation software<br>- Small design: 86.8 x 44.1 x 22.2 mm / 3.4 x 1.7 x 0.87 in<br>- Temperature, Humidity, Air pressure, Vibration, and Light  | <b>Equivalent</b> | <b>1</b> |
| 58 | UV-visible spectrophotometer | AsysUVM340 Microplate Reader   | <b>Equivalent</b> | <b>1</b> |

Chemicals and Glasswares for department of Botany women campus

| S# | Item Name                       | QTY   |
|----|---------------------------------|-------|
| 1  | Acetone                         | 05 L  |
| 2  | Agar Agar                       | 01 kg |
| 3  | Agarose for Gel Electrophoresis | 03 Kg |
| 4  | Sodium Dodecyl Sulfate          | 02 Kg |
| 5  | Coomassiebrilliant BlueG-250    | 500 g |
| 6  | Tris-HCL                        | 02 kg |
| 7  | Acrylamide                      | 01 Kg |
| 8  | Bis-Acrylamide                  | 01 Kg |

|    |   |            |
|----|---|------------|
| 9  | Ammonium per sulphate (APS)   | 01L        |
| 10 | TEMED   | 01 L       |
| 11 | Boric Acid  | 01 Kg      |
| 12 | Zinc Sulphate   | 01 Kg      |
| 13 | Copper Sulphate   | 01 Kg      |
| 14 | Manganese Chloride (MnCl <sub>2</sub> .2H <sub>2</sub> O)   | 01 Kg      |
| 15 | Magnesium Sulphate (MgSO <sub>4</sub> .7H <sub>2</sub> O)   | 02kg       |
| 16 | Calcium nitrate: Ca(NO <sub>3</sub> ).4H <sub>2</sub> O   | 02Kg       |
| 17 | Postassium nitrate (KNO <sub>3</sub> )  | 02kg       |
| 18 | Polyvinylpyrrolidone (PVP)  | 01Kg       |
| 19 | Potassium Dihydrogen Phosphate (KH <sub>2</sub> PO <sub>4</sub> )   | 01 kg      |
| 20 | Phosphoric Acid   | 2.5 L      |
| 21 | Ammonia   | 2.5L       |
| 22 | Ammonium acetate  | 01 Kg      |
| 23 | Anhydrous Sodium Bicarbonate  | 01 kg      |
| 24 | Anti Sera A, B, & D   | 01 Set     |
| 25 | Antiseptic Hand Cleaner   | 100 Nos    |
| 26 | Canada Balsam   | 500 ml     |
| 27 | Chlorine Water  | 05 L       |
| 28 | Chloroform  | 2.5 L      |
| 29 | Glycerol  | 2.5 L      |
| 30 | CTAB  | 500 g      |
| 31 | Detergents  | 10 Kg      |
| 32 | dNTPs (A,C , T, G)  | 1 Set      |
| 33 | Ethidium bromide  | 50 g       |
| 34 | Ether   | 2.5 L      |
| 35 | Hydrochloric Acid   | 2.5 L      |
| 36 | Isopropanol   | 2.5 L      |
| 37 | Methanol  | 05 L       |
| 38 | Methyl blue indicator   | 100 g      |
| 39 | Methyl green  | 100 g      |
| 40 | Methyl Orange Indicator   | 100 g      |
| 41 | Nitric Acid   | 2.5 L      |
| 42 | Phenol crystal  | 01 kg      |
| 43 | Proteinase k  | 5*1 ml     |
| 44 | RNAase Inhibitor  | 2500 U     |
| 45 | Safranin stain  | 100 g      |
| 46 | Silver Nitrate  | 01 Kg      |
| 47 | Gelatin Powder  | 01 kg      |
| 48 | Sodium acetate  | 01 kg      |
| 49 | Sodium nitrate  | 01 kg      |
| 50 | Starch  | 01 kg      |
| 51 | Sucrose   | 01 kg      |
| 53 | Wax   | 05 kg      |
| 54 | Xylene  | 2.5 L      |
| 55 | Light Green   | 100 gm     |
| 56 | Dark Green  | 100 gm     |
| 57 | Taq DNA Polymerase (recombinant), Quantity; 500 Units (5 units /µl) Thermostable with half-life more than 40 min at 95°C. Should generate PCR products with 3'-dA overhangs and supplied with two buffers – 10X Taq Buffer with KCl and 10X Taq Buffer with (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub> | 500 U x 20 |

|     |  |          |
|-----|--|----------|
| 58  | Taq Green PCR Master Mix; Quantity; 40 x 1.25 ml (for 1000 reactions of 50 µl each). The mix should have high sensitivity Taq polymerase for efficient amplification of at least 6 Kb DNA fragments from genomic DNA | 10000    |
| 59  | Thiazoles  | 500 g    |
| 60  | Trichloroacetic acid   | 250 g    |
| 61  | Tris base; $\text{NH}_2\text{C}(\text{CH}_2\text{OH})_3$   | 1 Kg     |
| 62  | Tris Hydrochloride Formula ( $\text{C}_4\text{H}_{11}\text{NO}_3\text{-HCL}$ ) Mol Wt 157.6 Purity 99% Nuclease Free   | 1 kg     |
| 63  | Yeast Extract  | 1 Kg     |
| 64  | Poly Ethylene Glycole (PEG)  | 1 kg     |
| 65  | Dimethyl Sulfoxide (DMSO)  | 250 ml   |
| 66  | Lactic Acid  | 2.5 L    |
| 67  | SSR markers  |          |
| 68  | SRAP markers   |          |
| 69  | Ferric Chloride  | 1 kg     |
| 70  | Reagent Bottles (1 litre)  | 5        |
| 71  | Reagent Bottles (500 ml)   | 5        |
| 72  | Petri dishes (Pyrex glass, reusable) 100 x 20 mm   | 50       |
| 73  | Petri dishes (polystyrene) 100 x 20 mm   | 200      |
| 74  | Falcon Tubes (50 ml)   | 30       |
| 75  | Falcon Tubes (15 ml)   | 50       |
| 76  | Falcon Tubes (10 ml)   | 50       |
| 77  | Beakers (1 litre)  | 5        |
| 78  | Beakers (500 ml)   | 5        |
| 79  | Beakers (250 ml)   | 5        |
| 80  | Beakers (100 ml)   | 5        |
| 81  | Conical Flask (1 litre)  | 5        |
| 82  | Conical Flask (500 ml)   | 5        |
| 83  | Conical Flask (250 ml)   | 5        |
| 84  | Conical Flask (100 ml)   | 5        |
| 85  | Conical Flask (50 ml)  | 5        |
| 86  | Calcium nitrate  | 1 kg     |
| 87  | Copper Sulphate  | 1 kg     |
| 88  | Sodium Molybdate   | 500 g    |
| 89  | Magnesium Chloride   | 1 kg     |
| 90  | Potassium nitrate  | 1 kg     |
| 91  | Zinc Sulphate  | 1 kg     |
| 92  | Magnesium Sulphate   | 1 kg     |
| 93  | Microscope slides  | 10 boxes |
| 94  | Cover slips  | 10 boxes |
| 95  | Folin Ciocalten reagent  | 100 ml   |
| 96  | Kinetin  | 5 gm     |
| 97  | 2-Isopentanyl  | 5 gm     |
| 98  | Blue Tips (1000 ul; DNase, RNase & Pyrogen free)   | 2000     |
| 99  | White Tips (210 ul DNase, RNase & Pyrogen free)  | 2000     |
| 100 | Yellow tips (200 ul DNase, RNase & Pyrogen free))  | 2000     |
| 101 | Eppendorf Tubes  | 2000     |
| 102 | PCR Tubes  | 2000     |
| 103 | Gloves (latex, powder free)  | 10 Pkts  |
| 104 | Falcon tube racks for (15 & 10 ml)   | 5        |
| 105 | Racks for Eppendorf tubes  | 10       |

|     |  |            |
|-----|--|------------|
| 106 | Racks for PCR tubes  | 10         |
| 107 | Racks for blue, white, yellow tips   | 10         |
| 108 | Sodium Pentachlorophenate  | 1 kg       |
| 109 | Herbarium Sheets (11.5 inch x 17.5 inch), 300 gram paper, dual side shine boxboard | 7000       |
| 110 | ICI original Glue (500 gm)   | 10 packets |
| 111 | Wax (hard, oily)   | 1 kg       |
| 112 | Silver Nitrate   | 500 g      |
| 113 | Titanium citrate   | 200 g      |
| 114 | Sodium dodecyl sulfate (SDS)   | 100 gm     |
| 115 | Xylene 99.5% purity  | 1 L        |
| 116 | Acetocarmine stain solution  | 1 bottle   |

## HOME ECONOMICS, WOMEN CAMPUS

### Lab Equipments

| S.NO | NAME OF EQUIPMENT/ITEM   | SPECIFICATION      | OR         | QUANTITY |
|------|--|--------------------|------------|----------|
| 1.   | Refrigerators with stabilizer  | Dawlance full size | Equivalent | One      |
| 2.   | Dinner set   | glass              | Equivalent | 8        |
| 3.   | Electronic oven  | Dawlance           | Equivalent | 8        |
| 4.   | Juicer / blender   | Philips            | Equivalent | 8        |
| 5.   | Pressure cooker  | Stainless steel    | Equivalent | 8        |
| 6.   | Cooking range  | Corona Large size  | Equivalent | 8        |
| 7.   | Dining table   | wooden             | Equivalent | 2 sets   |
| 8.   | Accessories: bowls, water set, forks, spoon set, hand beater, chopper, knife set, measuring cups, trays, cutting boards, langri danda, jar set, etc. |                    | Equivalent | 8        |
| 8.   | Nonstick sets  | Prestige           | Equivalent | 8        |
| 9.   | Crockery stands  | steel              | Equivalent | 8        |
| 10   | Electronics measuring balance  |                    | Equivalent | 2        |
| 11   | Weight machine   | Omron HN 286 ultra | Equivalent | 2        |

|    |   |  |            |                    |
|----|---|--|------------|--------------------|
| 12 | MUAC Scale  |  | Equivalent | 5 packs            |
| 13 | Dip sticks  |  | Equivalent | 5 packs            |
| 14 | Body Fats Composition Machine   |  | Equivalent | 2                  |
| 15 | Height Machine  |  | Equivalent | 2                  |
| 1  | Marble slab table   | white Marble (new Amin factory worsak road Peshawar) | Equivalent | 8 tables           |
| 2  | Ceramic wheel   | SOLDNER Electric wheel (S-50 1/6 HP) (Clay.king.com) | Equivalent | 8 ceramic wheels   |
| 3  | Slip casting molds  | Plaster of pares                                     | Equivalent | 10 pieces of molds |
| 4  | Ceramics tool kit (For ornamentation)   |  | Equivalent | 4 packets          |
| 5  | Kilin (Use for pots baking)   | Electric   | Equivalent | one                |
| 6  | Easel stand (For canvas painting)   | Iron   | Equivalent | 40 pieces          |
| 7  | Architecture scale  |  | Equivalent | 40 pieces          |
| 8  | Furniture stencil   |  | Equivalent | 40 pieces          |
| 9  | Tracing table   | Iron table with glass top                            | Equivalent | 8 tables           |
| 10 | Computers   |  | Equivalent | 20 computers       |
| 11 | Bulliten boards (for Display work of graphics)  | wooden   | Equivalent | 6 boards           |
| 12 | Weavng loom   | wooden   | Equivalent | 8 looms            |
| 13 | Drafting table (For draft patterns of cloth)  | Wooden   | Equivalent | 8 tables           |
| 14 | Accessories (measuring tape, scissors, l-shape and curve shape scales, tracing wheels,) |  | Equivalent | 12 each            |
| 15 | Iron  |  | Equivalent | 4                  |
| 16 | Curtains for screen lab   | Black leather  | Equivalent | 4                  |
| 17 | Tracing table for screen lab with 6 tublights   | Wodden with glass top Size 4 by 6 ft.                | Equivalent | 1                  |
| 18 | Plastic tub   | Large size   | Equivalent | 2                  |