

**DEMOCRATIC SOCIALIST REPUBLIC OF  
SRI LANKA**



**UVA WELLASSA UNIVERSITY**

**SUPPLY, DELIVERY AND INSTALLATION OF LABORATORY  
AND TEACHING EQUIPMENT FOR THE YEAR – 2026,  
FACULTY OF ANIMAL SCIENCE AND EXPORT  
AGRICULTURE, UVA WELLASSA UNIVERSITY**

**UWU/G/NCB/C/26/06**

**NATIONAL COMPETITIVE BIDDING**

<b>Bid Opening On</b>	27 <sup>th</sup> May 2026 - 2.00 p.m.
<b>Bid Validity up to</b>	91 days from 27 <sup>th</sup> May 2026

Uva Wellassa University,  
Passara Road,  
Badulla,  
Sri Lanka.

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**INVITATION FOR BIDS**  
**SUPPLY, DELIVERY AND INSTALLATION OF LABORATORY AND TEACHING**  
**EQUIPMENT FOR THE YEAR – 2026, FACULTY OF ANIMAL SCIENCE AND EXPORT**  
**AGRICULTURE, UVA WELLASSA UNIVERSITY.**  
**UWU/G/NCB/C/26/06**

The Chairman, Department Procurement Committee, on behalf of the Uva Wellassa University, hereby invites sealed bids from eligible and qualified bidders for the **“SUPPLY, DELIVERY AND INSTALLATION OF LABORATORY AND TEACHING EQUIPMENT FOR THE YEAR – 2026, FACULTY OF ANIMAL SCIENCE AND EXPORT AGRICULTURE, UVA WELLASSA UNIVERSITY”** The procurement will be conducted through the National Competitive Bidding (NCB) procedure.

1. Bidders should have at least three (03) years of experience in the relevant field in Sri Lanka.
2. Interested eligible bidders may obtain further information from the Deputy Bursar (Supplies), Uva Wellassa University, Passara Road, Badulla, (Tel.: 055-2226475, Fax No: 055-2226633), and inspect the bidding documents at the Supplies Division of the University between 9.00 a.m. and 3.00 p.m. from **7<sup>th</sup> May 2026 to 26<sup>th</sup> May 2026, and up to 12.30 p.m. on 27<sup>th</sup> May 2026.**
3. A complete set of bidding documents in English may be purchased by interested bidders upon submission of a written application to the Deputy Bursar (Supplies), Uva Wellassa University, Passara Road, Badulla, and upon payment of a non-refundable fee of LKR 12,000.00 in cash at the Shroff Counter of the University. The bidder can also download the bidding documents from the University website: [www.uwu.ac.lk](http://www.uwu.ac.lk). Those who are obtaining bidding documents from the University website must submit the complete documents together with a **Bank Draft** drawn in favour of the **“Vice Chancellor, Uva Wellassa University”** for LKR 12,000.00 as the non-refundable fee. Alternatively, payment may be made to any branch of Bank of Ceylon, to **Uva Wellassa University, Account No: 3114820**, with the original receipt/deposit slip attached to the bidding documents. The documents may be purchased until **12.30 p.m. on 27<sup>th</sup> May 2026.**
4. Bids must be delivered to the **Chairman, Department Procurement Committee, Uva Wellassa University, Passara Road, Badulla**, on or before **2.00 p.m. on 27<sup>th</sup> May 2026.** Please indicate the **“SUPPLY, DELIVERY AND INSTALLATION OF LABORATORY AND TEACHING EQUIPMENT FOR THE YEAR – 2026, FACULTY OF ANIMAL SCIENCE AND EXPORT AGRICULTURE, UVA WELLASSA UNIVERSITY - UWU/G/NCB/C/26/06”** on the top left-hand corner of the envelope.
5. All bids must be accompanied by a **Bid Security** addressed to the **Chairman, Department Procurement Committee, Uva Wellassa University, Passara Road, Badulla**, valid for 91 days from the date of bid opening. The Value of the Bid Security shall be **LKR 720,000.00**
6. A Pre-Bid meeting will be held at **2.00 p.m. on 13<sup>th</sup> May 2026** at the Board Room of Uva Wellassa University.
7. The completed bids shall be deposited in the ‘Tender Box’ available at the Registrar’s Office of the University, or sent by Registered Post to the address given in Clause No.5, ensuring receipt before the deadline.
8. Late bids will be rejected. Bids will be opened immediately after the closing of bids, in the presence of the bidders or their authorized representatives who choose to attend the bid opening, at the Board Room of the Uva Wellassa University.

Chairman  
Department Procurement Committee  
Uva Wellassa University  
Passara Road, Badulla, Sri Lanka  
Tel/ Fax No: 055-2226475, 055-2226633

## Section I. Instructions to Bidders (ITB)

This Bidding Document is based on the Standard Bidding Document for National Competitive Bidding (NPA/Goods/SBD 01). Section I will not be provided with this bidding document. Bidders are instructed to refer to Section I of the Standard Bidding Document (NPA/Goods/SBD 01) available on the **National Procurement Agency (NPA)** website: [www.npa.gov.lk](http://www.npa.gov.lk)

## Section II. Bidding Data Sheet (BDS)

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

[Instructions for completing the Bid Data Sheet are provided, as necessary, in the corresponding ITB Clauses.]

Clause Reference	A. General
ITB 1.1	The Purchaser is: <b>Uva Wellassa University</b>
ITB 1.1	The name and identification number of the Contract are: <b>“SUPPLY, DELIVERY AND INSTALLATION OF LABORATORY AND TEACHING EQUIPMENT FOR THE YEAR – 2026, FACULTY OF ANIMAL SCIENCE AND EXPORT AGRICULTURE, UVA WELLASSA UNIVERSITY”</b>
ITB 2.1	The source of funding is: <b>GOSL</b>
ITB 4.4	Foreign bidders are allowed to participate in bidding: <b>Not allowed</b>
	<b>B. Contents of Bidding Documents</b>
ITB 7.1	For clarification of bid purposes only, the Purchaser’s address is: Attention: <b>Deputy Bursar/ Supplies &amp; Stores</b> Address: <b>Uva Wellassa University, Passara Road, Badulla.</b> Telephone: <b>055-2226475</b> E-mail: <b>supply@uwu.ac.lk</b>
	<b>C. Preparation of Bids</b>
ITB 11.1 (e)	The Bidder shall submit the following additional documents: <b>A complete company profile of the bidder, including but not limited to the following:</b> <ul style="list-style-type: none"> <li>• <b>Business Registration Certificate</b></li> <li>• <b>VAT Registration Certificate</b></li> <li>• <b>List of clients who use the products and their contact details</b></li> <li>• <b>Past three (03) years of relevant experience in the industry in Sri Lanka</b> (The bidder should have at least three years of experience in the industry in Sri Lanka and should submit documents to prove this experience)</li> <li>• <b>Manufacturer’s Authorization.</b></li> <li>• <b>Certificate of Registration under Public Contract Act.</b></li> <li>• <b>Financial Statements</b></li> </ul>
ITB 15.1	The bidder shall quote the local expenditure in <b>Sri Lankan Rupees.</b>
ITB 18.1 (b)	After-sales service is: <b>Required</b>

<b>ITB 19.1</b>	The bid shall be valid for: <b>91 days from 27<sup>th</sup> May 2026</b>								
<b>ITB 20.1</b>	Bid shall include a Bid Security in any of the following ways: (a) A bank guarantee issued by a reputed bank operating in Sri Lanka. (b) A cash deposit at the Shroff Counter of the University (c) A cash deposit from any branch of the Bank of Ceylon, to Uva Wellassa University, Account No: 3114820, with the <b>cash receipt/deposit slip attached to the bidding documents.</b>								
<b>ITB 20.2</b>	The amount of the Bid Security is Rupees <b>720,000.00</b> Beneficiary: <b>Vice Chancellor, Uva Wellassa University.</b> The validity period of the bid security shall be 91 days from the closing date of the bid.								
<b>D. Submission and Opening of Bids</b>									
<b>ITB 22.2 (c)</b>	The inner and outer envelopes shall bear the following identification marks: <b>“SUPPLY, DELIVERY AND INSTALLATION OF LABORATORY AND TEACHING EQUIPMENT FOR THE YEAR – 2026, FACULTY OF ANIMAL SCIENCE AND EXPORT AGRICULTURE, UVA WELLASSA UNIVERSITY - UWU/G/NCB/C/26/06”</b>								
<b>ITB 23.1</b>	For bid submission purposes, the Purchaser’s address is: <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Attention</td> <td><b>: Deputy Bursar/Stores &amp; Supplies</b></td> </tr> <tr> <td>Address</td> <td><b>: Uva Wellassa University, Passara Road, Badulla.</b></td> </tr> </table> The deadline for the submission of bids is <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Date</td> <td><b>: 27<sup>th</sup> May 2026</b></td> </tr> <tr> <td>Time</td> <td><b>: 2.00 p.m.</b></td> </tr> </table>	Attention	<b>: Deputy Bursar/Stores &amp; Supplies</b>	Address	<b>: Uva Wellassa University, Passara Road, Badulla.</b>	Date	<b>: 27<sup>th</sup> May 2026</b>	Time	<b>: 2.00 p.m.</b>
Attention	<b>: Deputy Bursar/Stores &amp; Supplies</b>								
Address	<b>: Uva Wellassa University, Passara Road, Badulla.</b>								
Date	<b>: 27<sup>th</sup> May 2026</b>								
Time	<b>: 2.00 p.m.</b>								
<b>ITB 26.1</b>	The bid opening shall take place at: <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Address</td> <td><b>: Board Room, Uva Wellassa University, Passara Road, Badulla.</b></td> </tr> <tr> <td>Date</td> <td><b>: 27<sup>th</sup> May 2026</b></td> </tr> <tr> <td>Time</td> <td><b>: 2.00 p.m.</b></td> </tr> </table>	Address	<b>: Board Room, Uva Wellassa University, Passara Road, Badulla.</b>	Date	<b>: 27<sup>th</sup> May 2026</b>	Time	<b>: 2.00 p.m.</b>		
Address	<b>: Board Room, Uva Wellassa University, Passara Road, Badulla.</b>								
Date	<b>: 27<sup>th</sup> May 2026</b>								
Time	<b>: 2.00 p.m.</b>								
<b>E. Evaluation and Comparison of Bids</b>									
<b>ITB 34.1</b>	Domestic preference shall not be a bid evaluation factor.								
<b>ITB 35.3(d)</b>	The adjustments shall be determined using the following criteria, among those set out in Section III, Evaluation and Qualification Criteria: (a) Deviation in Delivery schedule: Option 2 -Please refer to <b>CC 26.1</b> (b) Deviation in payment schedule: Not applicable (c) The cost of major replacement components, mandatory spare parts, and service: Applicable								
<b>ITB 35.4</b>	The following factors and methodology will be used for evaluation: Acceptance Committee Report should be produced after the installation								
<b>ITB 35.5</b>	Bidders shall be allowed to quote for one or more lots. [refer to Section III, Evaluation and Qualification Criteria]. The Purchaser will evaluate the bid on an item-by-item basis.								

## Section III. Evaluation and Qualification Criteria

### 1. Evaluation Criteria (ITB 35.3 (d))

The Purchaser's evaluation of a bid may take into account, in addition to the Bid Price quoted in accordance with ITB Clause 14, one or more of the following factors as specified in ITB Sub-Clause 35.3(d) and in BDS referring to ITB 35.3(d), using the following criteria and methodologies.

(a) Delivery schedule

Option 2

The goods covered under this invitation are required to be delivered within an acceptable range of weeks specified in the Schedule of Requirements. No credit will be given to earlier deliveries, and bids offering delivery beyond this range will be treated as non-responsive. Within this acceptable range, an adjustment per week, as specified in the Bid Data Sheet, will be added, for evaluation purposes only, to the bid price of bids offering deliveries later than the earliest delivery period specified in the Section V, Schedule of Requirements.

(b) Deviation in payment schedule. **Not applicable**

(c) Cost of major replacement components, mandatory spare parts, and service:

The required spare parts for the goods covered under this invitation shall be available for at least five years of period and after sales service (both free and paid services).

(d) Specific additional criteria: **None**

### 2. Evaluation Criteria (ITB 35.4):

(a) A bid may be submitted by any reputed supplier of **Laboratory Equipment**, registered business in Sri Lanka, or any accredited local agent who takes fullest responsibility for the entire bid. The local agent shall submit documentary evidence of their status, obligations, power of attorney, and any other supporting documents confirming that they are duly authorized and eligible to bid on behalf of the manufacturer.

(b) Bidders shall have a minimum of three years' prior experience in the relevant industry, in the supply and also technical and financial capability necessary to perform the contract.

(c) A draft service agreement for three-year period (after the warranty period) shall be submitted with the bid.

(d) Bids will be rejected non-responsive if the required documentary evidence in support of the above criteria is not provided.

(e) If an Agent submits bids on behalf of more than one supplier, unless each such bid is accompanied by a separate Bid Form for each bid, and a bid security when required for each bid, and authorization from the respective Manufacturer, and valid vendor certificate, all

such bids will be rejected as non- responsive.

- (f) Bidders should possess the Certificate of Business Registration issued by a Governmental Authority/ Registrar of Companies/ Provincial Registrar of Business in the relevant category.
- (g) Bidders shall register the Contract under Public Contract Act and submit the certificate of registration (ITB 11.1(e)).
- (h) Bidders offering goods under their own brand names should provide along with their bids a current certification/s of quality; Bid not complying with this requirement may be treated as non - responsive.
- (i) Having a service center in Badulla or Uva Province will be considered as an added qualification.

### **3. Multiple Contracts (ITB 35.5)**

The Purchaser shall award multiple contracts to the Bidder that offers the lowest evaluated combination of bids (one contract per bid) and meets the post-qualification criteria (this Section III, Sub-Section ITB 37.2 Post-Qualification Requirements)

The Purchaser shall:

- (a) Evaluate only lots or contracts that include items per lot and quantity per item
- (b) Take into account: The lowest-evaluated bid for each lot

### **4. Domestic Preference (ITB 34.1) – Applicable to Procurement Guideline -7.7.1**

### **5. Post qualification Requirements (ITB 37.2)**

After determining the lowest-evaluated bid in accordance with ITB Sub-Clause 36.1, the Purchaser shall carry out the post qualification of the Bidder in accordance with ITB Clause 37, using only the requirements specified. Requirements not included in the text below shall not be used in the evaluation of the Bidder's qualifications.

- (a) Financial Capability: The Bidder shall furnish documentary evidence that it meets the following financial requirement(s): [list the requirement(s)]
- (b) Experience and Technical Capacity: The Bidder shall furnish documentary evidence to demonstrate that it meets the following experience requirement(s): [list the requirement(s)]
- (c) The Bidder shall furnish documentary evidence to demonstrate that the Goods it offers meet the following usage requirement: [list the requirement(s)]

## **Section IV. Bidding Forms**

### **Table of Forms**

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## **Bid Submission Form**

[The Bidder shall fill in this Form in accordance with the instructions indicated No alterations to its format shall be permitted and no substitutions shall be accepted.]

Date: [insert date (as day, month and year) of Bid Submission]

No.: [insert number of bidding process]

To: Chairman,  
Department Procurement Committee  
Uva Wellassa University  
Passara Road  
Badulla

We, the undersigned, declare that:

- a. We have examined and have no reservations to the Bidding Documents, including Addenda No.: [insert the number and issuing date of each Addenda];
- b. We offer to supply in conformity with the Bidding Documents and in accordance with the Delivery Schedules specified in the Schedule of Requirements the following Goods and Related Services [\* insert a brief description of the Goods and Related Services];
- c. The total price of our Bid without VAT, including any discounts offered is: [insert the total bid price in words and figures];
- d. The total price of our Bid including VAT, and any discounts offered is: [insert the total bid price in words and figures];
- e. Our bid shall be valid for the period of time specified in ITB Sub-Clause 18.1, from the date fixed for the bid submission deadline in accordance with ITB Sub-Clause 23.1, and it shall remain binding upon us and may be accepted at any time before the expiration of that period;
- f. If our bid is accepted, we commit to obtain a performance security in accordance with ITB Clause 43 and CC Clause 17 for the due performance of the Contract;
- g. We have no conflict of interest in accordance with ITB Sub-Clause 4.3;
- h. Our firm, its affiliates or subsidiaries—including any subcontractors or suppliers for any part of the contract—has not been declared blacklisted by the National Procurement Agency;
- i. We understand that this bid, together with your written acceptance thereof included in your notification of award, shall constitute a binding contract between us, until a formal contract is prepared and executed.
- j. We understand that you are not bound to accept the lowest evaluated bid or any other bid that you may receive.

Signed: [insert signature of person whose name and capacity are shown]

In the capacity of [insert legal capacity of person signing the Bid Submission Form]

Name: [insert complete name of person signing the Bid Submission Form]

Duly authorized to sign the bid for and on behalf of: [insert complete name of Bidder]

Dated on \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_ [insert date of signing]

## Price Schedule

- Note: 1. Unless otherwise allowed under ITB Clause 15, the bidders are required to quote the prices under 'A' columns;  
 2. Bidders may quote prices under 'B' columns only if the ITB Clause 15 provides provisions to bid in foreign currencies for the line item  
 3. Purchaser is advised to fill columns 1,2 and 3 before issuing the bidding document and delete this note 3;

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
Item	Description of Goods or related services	Quantity	Unit price (inclusive of duties, sales, and other taxes) excluding VAT	Price per line item (Col.3×4)	Transportation, insurance, and other related services to deliver the goods to their final destination	Total price excluding VAT (Col 5+6)	Discounted total price (if any ) excluding VAT	VAT	Total Price Including VAT (Col. 7 or 8+9)
1	Distillation Unit No 1	2							
2	Chest Freezer (Curved Glass Top) – Domestic Use	1							
3	Chest Freezer - Domestic Use	1							
4	Deep Fryer	1							
5	Top Loading Balance No 1	1							
6	Haugh Meter	1							
7	Microplate reader	1							
8	Portable Multipara meter	2							
9	Gel Electrophoresis	1							
10	Two door side by side refrigerator with freezer - Domestic Use	1							
11	Trinocular stereo microscope with camera (Dissecting Microscope)	1							
12	Hot plate magnetic stirrer	2							
13	Top loading balance No 2	1							
14	Vortex mixer No 1	2							
15	Bench top pH meter No 1	1							

16	Sonicator/Sonicator Bath No 1	1							
17	Mini Centrifuge spin and down	1							
18	Binocular Microscope	10							
19	Sieve set	1							
20	Solar Power System	1							
21	Rotary Evaporator	1							
22	Splash Back for Existing Double Basin Sink (03 units)	3							
23	Portable Biogas Unit	1							
24	Dual Purpose Laminar Flow	1							
25	Vacuum Pump for SUGOLD Model-DZF Vacuum oven	1							
26	Vortex Mixture No 2	1							
27	Autoclave with dryer	1							
28	Laboratory Water Distillation Plant/Distilled water small plant No 2	1							
29	Air Condition Machine Type 1 - 24000 BTU	1							
	Air Condition Machine Type 2 - 36000 BTU	1							
30	Wet & Dry Vacuum Cleaner	1							
31	Orbital Shaker	1							
32	Magnetic Stirrer	1							
33	Shoe Cover Dispenser	1							
34	Sonication Bath No 2	1							
35	Centrifuge	1							
36	Drying Oven	2							
37	Conductivity Meter	1							
38	Automated Withering Trough	1							

39	Orthodox Roller	1							
40	FBD Dryer	1							
41	Acclimatization Chamber								
42	pH Meter No 2	1							
43	Rotary Rheometer	1							
44	Vacuum Pump	1							
45	Sonicator Bath/ Ultra Sonicator Cleaner No 3	2							
46	Agitator Mixer	1							
47	Colorimeter	1							

## Bid Security (Guarantee)

(this Bank Guarantee form shall be filled in accordance with the instructions indicated in brackets)  
.....insert issuing agency's name, and address of issuing branch or office.....

**Beneficiary:** Vice Chancellor, Uva Wellasa University, Passara road, Badulla

**Date:** ----- *[insert (by issuing agency) date]*

**BID GUARANTEE No.:** ----- *[insert (by issuing agency) number]*

We have been informed that -----  
*[name of the Bidder]* (herein after called "the Bidder") has submitted to you its bid dated -----  
*[date]* (herein after called "the Bid") for the execution of -----  
----- *[insert name of Contract]* under Contract No. -----

Furthermore, we understand that, according to your conditions, Bids must be supported by a Bid Guarantee.

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

- (a) Has withdrawn its bid during the period of bid validity specified; or
- (b) Does not accept the correction of errors in accordance with the Instructions to Bidders (hereinafter "the ITB"); or
- (c) Having been notified of the acceptance of its bid by the Employer during the period of bid validity, (i) fails or refuses to execute the Contract Form, if required, or (ii) fails or refuses to furnish the Performance Security, in accordance with the ITB.

This Guarantee shall expire: (a) if the Bidder is the successful bidder, upon our receipt of copies of the Contract signed by the Bidder and of the Performance Security issued to you by the Bidder; or (b) if the Bidder is not the successful bidder, upon the earlier of (i) the successful bidder furnishing the performance security, otherwise it will remain in force up to ----- *(insert date)*

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

.....  
*[Signature of authorized representative(s)]*

## **Manufacturer's Authorization**

[The Bidder shall require the Manufacturer to fill in this Form in accordance with the instructions indicated. This letter of authorization should be on the letterhead of the Manufacturer and should be signed by a person with the proper authority to sign documents that are binding on the Manufacturer. The Bidder shall include it in its bid, if so indicated in the BDS.]

Date: [insert date (as day, month and year) of Bid Submission]

No.: [insert number of bidding process]

To: [insert complete name of Purchaser]

### **WHEREAS**

We [insert complete name of Manufacturer], who are official manufacturers of [insert type of goods manufactured], having factories at [insert full address of Manufacturer's factories], do hereby authorize [insert complete name of Bidder] to submit a bid the purpose of which is to provide the following Goods, manufactured by us [insert name and or brief description of the Goods], and to subsequently negotiate and sign the Contract.

We hereby extend our full guarantee and warranty in accordance with Clause 27 of the Conditions of Contract, with respect to the Goods offered by the above firm.

Signed: [insert signature(s) of authorized representative(s) of the Manufacturer]

Name: [insert complete name(s) of authorized representative(s) of the Manufacturer]

Title: [insert title]

Duly authorized to sign this Authorization on behalf of: [insert complete name of Bidder]

Dated on \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_ [insert date of signing]

## **Section V. Schedule of Requirements**

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## 1. List of Goods and Delivery Schedule

Item No	Description of Goods	Quantity	Final (Project Site) Destination as specified in BDS	Delivery Date <sup>1</sup>		
				Earliest Delivery Date	Latest Delivery Date	Bidder's offered Delivery date [ <i>to be provided by the bidder</i> ]
1	Distillation Unit No 1	2				
2	Chest Freezer (Curved Glass Top) - Domestic Use	1				
3	Chest Freezer - Domestic Use	1				
4	Deep Fryer	1				
5	Top Loading Balance No 1	1				
6	Haugh Meter	1				
7	Microplate reader	1				
8	Portable Multipara meter	2				
9	Gel Electrophoresis	1				
10	Two door side by side refrigerator with freezer - Domestic Use	1				
11	Trinocular stereo microscope with camera (Dissecting Microscope)	1				
12	Hot plate magnetic stirrer	2				
13	Top loading balance No 2	1				
14	Vortex mixer No 1	2				
15	Bench top pH meter No 1	1				
16	Sonicator/Sonicator Bath No 1	1				
17	Mini Centrifuge spin and down	1				
18	Binocular Microscope	10				
19	Sieve set	1				

20	Solar Power System	1				
21	Rotary Evaporator	1				
22	Splash Back for Existing Double Basin Sink (03 units)	3				
23	Portable Biogas Unit	1				
24	Dual Purpose Laminar Flow	1				
25	Vacuum Pump for SUGOLD Model-DZF Vacuum oven	1				
26	Vortex Mixture No 2	1				
27	Autoclave with dryer	1				
28	Laboratory Water Distillation Plant/Distilled water small plant No 2	1				
29	Air Condition Machine Type 1 - 24000 BTU	1				
	Air Condition Machine Type 2 - 36000 BTU	1				
30	Wet & Dry Vacuum Cleaner	1				
31	Orbital Shaker	1				
32	Magnetic Stirrer	1				
33	Shoe Cover Dispenser	1				
34	Sonication Bath No 2	1				
35	Centrifuge	1				
36	Drying Oven	2				
37	Conductivity Meter	1				
38	Automated Withering Trough	1				
39	Orthodox Roller	1				
40	FBD Dryer	1				
41	Acclimatization Chamber					
42	pH Meter No 2	1				
43	Rotary Rheometer	1				

44	Vacuum Pump	1				
45	Sonicator Bath/ Ultra Sonicator Cleaner No 3	2				
46	Agitator Mixer	1				
47	Colorimeter	1				

## 2. List of Related Services and Completion Schedule

*[This table shall be filled in by the Purchaser. The Required Completion Dates should be realistic and consistent with the required Goods Delivery Dates]*

Service	Description of Service	Quantity <sup>1</sup>	Unit	Place where Services shall be performed	Final Completion Date(s) of Services
<i>[insert Service No]</i>	<i>[insert description of Related Services]</i>	<i>[insert quantity of items to be supplied]</i>	<i>[insert unit for the items]</i>	<i>[insert name of the Place]</i>	<i>[insert required Completion Date(s)]</i>

1. If applicable

**Technical Specifications**


*[The Technical specifications may be provided in the following format. The bidder shall fill the columns 6 and 7 (last two columns). Bidder's failure to provide the information requested in the columns 6 and 7 may be a reason for the rejection of the bid. Bidders shall submit authentic technical data sheets, catalogues, or manufacturer's literature for all quoted items. The bidder must clearly highlight or indicate the specific parameters that demonstrate compliance with each specification stated in the bidding document. If any discrepancy is observed between the information provided by the bidder in the columns 6 and 7 and the other technical information attached to the bid, the information provided herein shall take precedence.]*

No	Name of the Item	Specification	Qty	Bidder's Compliance			
				Yes/No	If "No", Bidder's Response		
01	Distillation Unit No 1	Distillation capacity	4L/h. Continuous automatic operation with adjustable water flow control	2			
		Inner chamber and heating element made of stainless steel or equivalent; housing made of stainless steel with epoxy or equivalent coating					
		Compact design with easily removable parts for cleaning.					
		Water Quality Specifications (Approx.)	1. Conductivity: Min. 1.6 $\mu$ S/cm at 25 °C				
			2. Resistivity: 0.5 – 2 M $\Omega$ ·cm at 25 °C				
			3. pH: 5–7 at 25°C				
		Control panel with general power switch and indicator lights					
		Adjustable water feed connection					
		Cooling water drain outlet adaptable to containers					
		Safety Features	1. Automatic cut-off of heating element in case of cooling 2. water failure, with auto-restart when cooling is restored				
			2. Solenoid valve: Cut off water when there is no power				
			3. Overheating cut-off				
			4. Silicone gasket sealing				
			5. Earthed electrical system				
		Optional accessory: Flow limiter for optimized water usage.					
		Power supply	230 V, 50/60 Hz				
Warranty	Minimum 3 years						
Make	Please specify						
Model	Please specify						
Country of Origin	Please specify						

		A manufacturer Authorization Letter should be provided				
		Brand name, Product Catalog, Catalog page and Model no should be available. Requested specification should be stated in the Catalog page and product web site.				
		If you fail to fulfill the requested specification by the university [equipment supplies with wrong specification] the equipment would be rejected after goods delivery to the university.				
02	Chest Freezer (Curved Glass Top) (Domestic Use)	Type	Chest Freezer type with glass top Integrated Handle	1		
		Compressor	Direct cooling			
		Capacity	350L-400L			
		Shall use R-600a (Isobutane) refrigerant or an equivalent energy-efficient and environmentally friendly refrigerant compliant with international safety standards				
		Shall be equipped with an inverter-type compressor or equivalent technology to ensure energy-efficient and stable operation				
		Mechanical temperature control				
		Four-Sided Refrigeration				
		Power supply	230V,50Hz			
		Temperature	-18°C			
		Compressor Warranty	Minimum 5 years			
		Comprehensive Warranty	Minimum 3 years			
		Brand name, Product Catalog and Model no should be available. Requested specification should be stated in the Catalog page and product web site.				
		If you fail to fulfill the requested specification by the university [equipment supply with wrong specification] the equipment would be rejected after goods delivery to the university.				
		Make	Please specify			
		Model	Please specify			
		Country of Origin	Please specify			
Country of Manufacturing	Please specify					

03	Chest Freezer (Domestic Use)	Make	Please specify	1		
		Model	Please specify			
		Country of Origin	Please specify			
		Country of Manufacturing	Please specify			
		Capacity	350L-400L			
		Temperature	-18°C			
		Voltage	220-230 V, 50 Hz			
		Number of Doors:	2			
		Lock & Key Should be available				
		Handles	External handles or equivalent			
		Cooling	Multi-surface/five-surface cooling			
		Shall use R-600a (Isobutane) refrigerant or an equivalent energy-efficient and environmentally friendly refrigerant compliant with international safety standards.				
		Shall be equipped with an inverter-type compressor or equivalent technology to ensure energy-efficient and stable operation.				
		Inner Cabinet Material	Embossed PCM or equivalent			
		Outer Cabinet Material	PCM or equivalent			
		6 universal castors				
		Balance hinge or equivalent				
		Condenser Tube Material	Mild steel (MS) or stainless steel tube			
		Power-on Indicator	Green light			
		Door Open Indicator Light				
		Fast Freeze Control Knob				
		Condenser Fan				
		Convertible Function				
		Cabinet Partition				
		Compressor Warranty	Minimum 5 years			
		Comprehensive Warranty	Minimum 3 years			
		A manufacturer Authorization Letter should be provided				
		Brand name, Product Catalog and Model no should be available. Requested specification should be stated in the Catalog page and product web site.				
		If you fail to fulfill the requested specification by the university [equipment supply with wrong specification] the equipment would be rejected after goods delivery to the university.				

04	<b>Deep Fryer</b>	Make	Please specify	1		
		Model	Please specify			
		Country of Origin	Please specify			
		Country of Manufacturer	Please specify			
		Type	Electric fryer 10L double			
		Accessories	Two rugged stainless-steel wire baskets with handles			
		Material of the body and tanks: Corrosion-resistant stainless steel (Grade 316 or equivalent				
		Thickness:Outer housing: 0.7–1.0 mm (or equivalent gauge) ; Inner tanks:0.9–1.2 mm (or equivalent gauge)				
		Controls & Features	Thermostat, temperature controller, micro switch, and power switch			
		Oil Capacity	Approx. 8–10 L per tank			
		Operating Temperature Range	Approx. 50–200 °C (thermostatically controlled)			
		Voltage	220–230 V, 50 Hz			
		Power	Approx. 3 kW + 3 kW			
		Warranty	Minimum 1 year for the heating element			
Brand name, Product Catalog and Model no should be available. Requested specification should be stated in the Catalog page and product web site.						
If you fail to fulfill the requested specification by the university [equipment supply with wrong specification] the equipment would be rejected after goods delivery to the university.						
05	<b>Top Loading Balance No 1</b>	Make	Please specify	1		
		Model	Please specify			
		Country of Origin	Please specify			
		Country of Manufacturer	Please specify			
		Weighing Range	0.01 g – 6,200 g			
		Weighing Plate Size	Approx. 160–170 × 160–170 mm			
		Readability	0.01 g			
		Temperature Range (Permissible Operating)	Approx. 5–35°C			
		Connectivity	RS232C and USB port (for printer or data output)			
		Accessories	Optional glass draft shield			
		Applications: Should be suitable for standard laboratory weighing and general balancing purposes				
		Warranty	Minimum 3 years			

		A manufacturer Authorization Letter should be provided			
		Brand name, Product Catalog and Model no should be available. Requested specification should be stated in the Catalog page and product web site.			
		If you fail to fulfill the requested specification by the university [equipment supply with wrong specification] the equipment would be rejected after goods delivery to the university.			
06	Haugh Meter	Make		1	
		Model			
		Country of Origin			
		Country of Manufacturer			
		Measurement parameters	Max measurement height :1'' or 25mm		
			Max micrometer error : 0.0002''		
			Resolution : 0.0005''/0.01mm		
		Power supply	1 Lithium battery , type CR2032		
		Mean Battery Life	4400 hours		
		High contrast LCD display			
		Warranty	Minimum 2 years		
		Applications	Extremely precise and friendly to use		
		A manufacturer Authorization Letter should be provided			
		Brand name, Product Catalog and Model no should be available. Requested specification should be stated in the Catalog page and product web site.			
If you fail to fulfill the requested specification by the university [equipment supply with wrong specification] the equipment would be rejected after goods delivery to the university.					
	Drawing				
					

07	Microplate reader	Make	Please specify	1		
		Model	Please specify			
		Country of Origin	Please specify			
		Country of Manufacturer	Please specify			
		Detection Modes	Absorbance			
		Read Methods	END point kinetic, well area scanning			
		Micro plate type 6 to 96 well plates				
		The instrument shall able to adjust at least to 50°C for broader assay compatibility				
		It should have Shaken facility – Linear				
		Instrument and software shall support to normal and rapid mode to read the wells less than 40 seconds or better.				
		The software shall support to control the instruments and analysis of data.				
		Light Source	Thungsten Halogen			
		Wavelength Selection	Filters Based			
		Wave length range	340 – 750 nm			
		Dynamic Range	0 to 4.0 OD Normal and			
		Rapid read	0 to 3.0 OD			
		Resolution	0.001 OD or better			
		Filter wheel capacity	5 positions or better			
		Following Filters shall be supplied - 340,405,450,490,630 (UV configuration), Please specify the filters if any changes				
		OD accuracy	(96-well)			
			Normal read  Mode  ± 1.0% ± 0.010 OD from 0.000 to 2.000 OD at 405 nm  ± 3.0% ± 0.010 OD from 2.000 OD to 3.000 OD at 450 nm			
		OD repeatability	(96-well) Normal read			

			Mode ± 0.5% ± 0.005 OD from 0.000 to 2.000 OD at 405 nm ± 1.5% ± 0.005 OD from 0.000 to 2.000 OD at 340nm			
		Connectivity	1 USB for computer  1 USB for Printer			
		Power	100 – 240V			
		Dimension	420 x 380 x 180 mm			
		Instrument shall be certified – CE Certificate				
		The instrument shall supply along with compatible Laptop installed analysis software.				
		Display	Colour touch screen			
		Warranty	Shall not be less than 12 months			
		Letter from manufacturer for 10 years spare parts availability				
		A manufacturer Authorization Letter should be provided				
		Brand name, Product Catalog and Model no should be available. Requested specification should be stated in the Catalog page and product web site.				
		If you fail to fulfill the requested specification by the university [equipment supply with wrong specification] the equipment would be rejected after goods delivery to the university.				
<b>08</b>	<b>Portable Multiparameter</b>	Measuring Parameters	pH/mv, ORP, EC, TDS, Resistivity, Salinity, DO, ATM (Optional)	2		
		PH	Range	Approx. -2.00 to 20.00 pH		
			Resolution	0.1, 0.01 pH		
			Accuracy	±0.01 pH		
		mV	Range	Approx. -2000.0 to 2000.0 mV		
			Resolution	0.1		
			Accuracy	±0.3 mV or ±0.1%		
		Conductivity	Range	Approx. 0.000 µS/cm to 500 µS/cm		
			Resolution	0.001 µS/cm minimum preferable, various with range selection		

		Accuracy	±1.0% FS		
	TDS	Range	Approx. 0.00 ppm - 300 ppt		
		Resolution	0.01 ppm minimum Preferrable, various with range selection		
		Accuracy	±1.0% FS		
	Resistivity	Range	Approx. 5.00 Ω·cm~20.00 MΩ·cm		
		Resolution	0.01 Ω·cm minimum		
		Accuracy	±1.0% FS		
	DO	Range	Approx. 0.00 to 50.00ppm		
		Resolution	0.01ppm		
		Accuracy	±0.1ppm		
	Temperature	Range	Approx. -5 to 110 °C		
		Resolution	0.1 °C		
		Accuracy	±0.2 °C		
	Salinity Accuracy (25°C/77°F): ±2% of reading or ±0.01 PSU whichever is greater				
	Temperature Compensation	ATC, MTC			
	Display	Backlit LCD display			
	Waterproof				
	Warranty	Approx. 2 years for the meter  Minimum 6 months for the probe			
	Power Supply	1.5V AA batteries (4)			
	Make	Please specify			
	Model	Please specify			
	Country of Origin	Please specify			
	Country of Manufacturing	Please specify			
	A manufacturer Authorization Letter should be provided				
	Brand name, Product Catalog, Catalog page and Model no should be available. Requested specification should be stated in the Catalog page and product web site.				
	If you fail to fulfill the requested specification by the university [equipment supplies with wrong specification] the equipment would be rejected after goods delivery to the university.				

09	Gel Electrophoresis	Type	Horizontal		1		
		Accessories Mandatory	Buffer tank with electrodes, casting trays, combs, power supply with cables				
		Unit Dimensions	Approx. (W x L x H): 15-18 x 25-30 x 8-10 cm				
			Casting Gel Sizes: 15 x 15 cm; 14 x 7 cm; 7 x 7 cm approximately				
			Buffer volume: 400-600 mL approx.				
			Max. samples: 210 approx.				
			combs with 1mm – 2 mm thickness	1 - 08 tooth			
				1 - 16 tooth			
				1 - 20 tooth			
			Well volume: 10-40 uL approx.	1 - 28 tooth			
		Power supply	Output voltage				
			range/increments: 5-250V/1V				
			Output current				
			range/increment:10-3000mA/10mA				
			Output power				
			range/increments: 1-300W/1W				
			Timer: 1 min to 99h 59 min or continuous approx.				
	Should be Programmable 10 steps/program, 20 program memory						
	Dimensions (W x L x H): 7.6 x 9.9 x 3.2 in/19 x 25 x 8 cm approximately						
Input power supply	230V /50Hz						
Warranty	Should have 2 years manufacturer warranty period						
Make	Please specify						
Model	Please specify						
Country of Origin	Please specify						
Country of Manufacturing	Please specify						

		A manufacturer Authorization Letter should be provided				
		Brand name, Product Catalog, Catalog page and Model no should be available. Requested specification should be stated in the Catalog page and product web site.				
		If you fail to fulfill the requested specification by the university [equipment supply with wrong specification] the equipment would be rejected after goods delivery to the university.				
<b>10</b>	<b>Two door side by side refrigerator with freezer (Domestic Use)</b>	Type	Double Door Side by Side Refrigerator	1		
		Fruit Case	Yes			
		Compressor	Inverter tech (Digital Inverter Compressors)			
		Vegetable Case	Yes			
		Freezer	Should be available (e.g., one side freezer)			
		Capacity	Approx. 600 L			
		Dimension (W x H x D)	Approx. 80-100 cm x 160-180 cm x 60-70 cm			
		Cooling system	Twin/Dual Cooling systems			
		Power Supply	230V /50Hz			
		Warranty	1 year warranty minimum			
		Make	Please specify			
		Model	Please specify			
		Country of Origin	Please specify			
		Country of Manufacturing	Please specify			
					Brand name, Product Catalog and Model no should be available. Requested specification should be stated in the Catalog page and product web site.	
		If you fail to fulfill the requested specification by the university [equipment supplies with wrong specification] the equipment would be rejected after goods delivery to the university.				
<b>11</b>	<b>Trinocular stereo microscope with camera (Dissecting Microscope)</b>	Observation method	Brightfield	1		
		Optical system	Infinity Corrected Optical System			
		Head	Trinocular, 30 360 rotating			
		Split Ratio	Approx. 50/50			
		Interpupillary distance (mm)	Approx. 50-75			
		Dioptric adjustment	On left tube			
		Eyepieces	10x/22 mm, Higher eye point with fixing screws			
		Nosepiece	Quintuple and Bi-directional			
		Objective type	IOS W-PLAN			
		Parfocal distance (mm)	45			

	Standard objectives	4x/0.10, W.D. 17.3 mm		
		10x/0.25, W.D. 10 mm		
		40x/0.65, W.D. 0.54 mm		
		100x/1.25 (Oil), W.D. 0.13 mm		
		100x/1.25 (Water), W.D. 0.13 mm		
	Oil and Water immersion should be available			
	Focusing System	Coaxial coarse and fine with focus memory lock		
	Fine resolution (µm)	Approx. 2		
	Fine total travel (per single rotation) (mm)	Approx. 0.2		
	Fine graduations	Approx. 100		
	Coarse total travel (mm)	Approx. 25		
	Stage Type	Double layer, rackless		
	Vernier scale accuracy (mm)	Approx. 0.1		
	Condenser Type	Swing-out, Centrable and removable Abbe condenser with focusable by rack and pinion with aperture scale		
	Condenser Numerical aperture (N.A.)	Approx. 0.2/0.9		
	Transmitted Illumination	Full Kohler illumination		
		X-LED		
		With manual light control facility		
	LED life time	Long life more than 65,000 hours		
	Light source power (W)	Approx. 3.6		
	Power Supply	230V /50Hz		
	Warranty	Minimum 05 years		
	Spare parts availability	10 years		
	User reference list	10 years		
	Make	Please specify		
	Model	Please specify		

		Country of Origin	Please specify			
		Country of Manufacturing	Please specify			
		Instrument should be European CE Certified				
		A manufacturer Authorization Letter should be provided				
		Brand name, Product Catalog and Model no should be available. Requested specification should be stated in the Catalog page and product web site.				
		If you fail to fulfill the requested specification by the university [equipment supply with wrong specification] the equipment would be rejected after goods delivery to the university.				
		Camera and Microscope should be provided in same brand and should be compatible each other				
	<b>Camera Specifications</b>		USB Camera resolution (MP)	Approx. 8.3		
			Camera resolution (n° of pixels: W x H)	Approx. 3840x2160		
			Color / Monochrome	Color		
			Sensor Size	Approx. 1/1.8"		
			Sensor Technology	CMOS		
			Acquisition technology	Rolling Shutter		
			Pixel Size (um)	Approx. 2.0 x 2.0		
			Frame rate full resolution (fps)	Approx. 45@3840x2160		
			Frame rate other resolution (fps)	Approx. 70@1920x1080		
			Exposure time	Approx. 0.02 msec - 15 sec		
			IR filter	Should be available		
			C-Mount	Should be supplied with compatible C Mount adaptor		
			Camera accessories	Calibration slide		
			USB cable (approx. 1.5-2.0m)			
	Camera Software Should be supplied free of charge from the same manufacturer	Image analyzing software Compatible with Windows 7 Windows 8 Windows 10 (32Bit) Windows 10 (64Bit) Osx (MAC Osx) starting from 10.7.5  Linux				

		Warranty; (Microscope & Camera both)	Min. 02 years		
		Accessories and Spare Parts Availability of equipment	Guarantee of availability of all accessories and spare parts is required for a minimum of 10 years after purchase of equipment.		
		User reference list (Preferrable)	Min. 10 years		
		Make	Please specify		
		Model	Please specify		
		Country of Origin	Please specify		
		Country of Manufacturer	Please specify		
		Instrument should be European CE Certified			
		A manufacturer Authorization Letter should be provided			
		Brand name, Product Catalog and Model no should be available. Requested specification should be stated in the Catalog page and product web site.			
		If you fail to fulfill the requested specification by the university [equipment supplies with wrong specification] the equipment would be rejected after goods delivery to the university.			
12	<b>Hot plate magnetic stirrer</b>	Capacity	50 – 2000 ml	2	
		Work plate material	Glass ceramic		
		Motor type	Brushless DC motor		
		Stirring positions	1		
		Speed range	100-1500rpm resolution $\pm 1$ rpm		
		Speed display	LCD		
		Temperature display	LCD		
		Heating temperature range	Room Temp. - 550°C, increment 1°C		
		Temperature control accuracy	$\pm 1^\circ\text{C} (< 100^\circ\text{C}) \pm 1\% (> 100^\circ\text{C})$		
		Overheating protection	Approx. 580°C		
		Temperature display accuracy	$\pm 0.1^\circ\text{C}$		
		External temperature sensor accuracy	( $\pm 0.2$ )		
		“Hot” warning	50°C		
		Motor rating input	18W		

		Motor rating output	10W			
		Heating output	1000W			
		Permissible ambient temperature and humidity	5-40°C, 80% RH			
		Power supply	200-240V 50/60Hz			
		Warranty	Min. 2 years			
		Make	Please specify			
		Model	Please specify			
		Country of Origin	Please specify			
		Country of Manufacturer	Please specify			
		A manufacturer Authorization Letter should be provided				
		Brand name, Product Catalog and Model no should be available. Requested specification should be stated in the Catalog page and product web site.				
		If you fail to fulfill the requested specification by the university [equipment supply with wrong specification] the equipment would be rejected after goods delivery to the university.				
<b>13</b>	<b>Top loading balance No 2</b>	Capacity [Max]	1000 g	1		
		Resolution	0.01 g			
		Calibration	Automatic Internal			
		Pan size	Approx. Ø 160 mm			
		Response time (sec.)	≤3 sec			
		Repeatability	0.01 g			
		Linearity	± 0.02 g			
		Minimum Load	500 mg			
		Display	LCD			
		Tare Range (Subtractive)	Approx. up to 1000 g			
		Span Drift In +10...+30°C	± 4 ppm/°C			
		Working Temperature	5 - 35°C			
		Power Supply	~230Vac. 50/60Hz, output 24V			
		Power Consumption	(Max): 2 Watt			
		Warranty	2 years			
		Make	Please specify			
		Model	Please specify			
		Country of Origin	Please specify			
		Country of Manufacturer	Please specify			
		A manufacturer Authorization Letter should be provided				

		Brand name, Product Catalog and Model no should be available. Requested specification should be stated in the Catalog page and product web site.					
		If you fail to fulfill the requested specification by the university [equipment supplies with wrong specification] the equipment would be rejected after goods delivery to the university.					
14	Vortex mixer No 1	Range of Rotation	1000 – 2800 rpm		2		
		Amplitude	Approx. 3mm				
		Time Setting	Timing display				
		Run Mode	Touch operation/Continuous				
		Capacity	Variety of test tubes, including the tubes up to 50 ml				
		Motor Type	Shaded pole motor				
		Operation Mode	Continuous, inching				
		Consumption	~60W				
		Power Supply	~220V 50/60Hz				
		Size	Approx. (W×D×H) :197x135x156 mm				
		Warranty	2 years				
		Make	Please specify				
		Model	Please specify				
		Country of Origin	Please specify				
		Country of Manufacturer	Please specify				
		A manufacturer Authorization Letter should be provided					
Brand name, Product Catalog and Model no should be available. Requested specification should be stated in the Catalog page and product web site.							
If you fail to fulfill the requested specification by the university [equipment supplies with wrong specification] the equipment would be rejected after goods delivery to the university.							
15	Bench top pH meter No 1	Measuring Parameters	pH, EC, TDS, Temperature		1		
		pH	Range	2.00 to 16.00 approx.			
			Resolution	0.01 pH			
			Accuracy	±0.01 pH			
		EC	Range	0.00 to 19.99 μS/cm   20.0 to 199.9 μS/ cm			

			200 to 1999 $\mu\text{S}/\text{cm}$ 2.00 to 19.99 $\text{mS}/\text{cm}$   20.0 to 199.9 $\text{mS}/\text{cm}$			
		Resolution	0.01 $\mu\text{S}/\text{cm}$   0.1 $\mu\text{S}/\text{cm}$   1 $\mu\text{S}/\text{cm}$ 0.01 $\text{mS}/\text{cm}$   0.1 $\text{mS}/\text{cm}$			
		Accuracy	$\pm 1\%$ f.s.			
TDS		Range	0.00 to 9.99 ppm   10.0 to 99.9 ppm   100 to 999 ppm 1.00 to 9.99 ppt   10.0 to 99.9 ppt			
		Resolution	0.01 ppm   0.1 ppm   1 ppm 0.01 ppt   0.1 ppt			
Temperature		Range	-9.9 to 120 $^{\circ}\text{C}$ (pH range)  0.0 to 100.0 $^{\circ}\text{C}$ (EC range)			
		Resolution	0.1 $^{\circ}\text{C}$			
		Accuracy	$\pm 0.5$ $^{\circ}\text{C}$			
		Calibration up to	3-point calibration			
		Make	Please specify			
		Model	Please specify			
		Country of Origin	Please specify			
		Country of Manufacturer	Please specify			
		Microprocessor-based benchtop meter				
		Automatic temperature compensation				
		Auto-ranging feature of the EC and TDS ranges				
		Calibration timeout alarm, GLP feature, automatic HOLD feature				
		Relative mV feature				
		Probe with a built-in temperature sensor				
		pH and conductivity solutions should be provided				
		Warranty	Minimum 2 years			
		A manufacturer Authorization Letter should be provided				

		Brand name, Product Catalog and Model no should be available. Requested specification should be stated in the Catalog page and product web site.			
		If you fail to fulfill the requested specification by the university [equipment supply with wrong specification] the equipment would be rejected after goods delivery to the university.			
16	Sonicator/ Sonicator Bath No 1	Ultrasonic Power (W)	Max 240	1	
		Heating Power(W)	Max 500		
		Capacity (L)	Max 10L		
		Tank Size (L*W*H)	mm 300x240x150		
		External Size (L*W*H)	mm 330x270x310		
		Transducer	Qty (PCS) 4		
		Ultrasonic Freq	(KHz) 10		
		Temperature Setting (°C)	Max 80		
		Timer Setting	1-30 mins		
		Carrying Handle	Yes		
		Cleaning Basket	Yes		
		Stainless steel material for basket, body and cover	Yes		
		Flow control valve	Yes		
		Air cooling fin design	Yes		
		Display	Digital LED display		
		<b>Warranty</b>	2 years		
		<b>Additional info</b>			
		Make	Please specify		
		Model	Please specify		
		Country of Origin	Please specify		
Country of Manufacturer	Please specify				
A manufacturer Authorization Letter should be provided					
Brand name, Product Catalog and Model no should be available. Requested specification should be stated in the Catalog page and product web site.					
If you fail to fulfill the requested specification by the university [equipment supply with wrong specification] the equipment would be rejected after goods delivery to the university.					

17	Mini Centrifuge spin and down	<b>Features – LCD Screen</b>	Shows RPM/ RCF, time, rotor spinning and lid Status.	1		
			Speed programming in 100 RPM/100 xg steps.			
			Timer from 30 sec. to 999 min. programmable in 1 sec. steps or hold position.			
			Timer with countdown at set time.			
			Several acoustic and visual messages showing the user the situation of the device			
		Max. speed	14000 RPM			
		Voltage/Frequency	220-230 V/50-60 Hz			
		Consumption	180 W			
		Microprocessor controlled				
		PC connection by USB.				
		Induction motor maintenance free (brushless).				
		Noise level: below 60 dB.				
		"Start, short spin, stop, open lid, speed, time and RPM/RCF switch				
		Option RPM/ RCF adjustment along the run				
		Automatic lid opening				
		Last values remain in memory				
		Low height for easy access				
		<b>Lid provided with security systems</b>	Automatic lid lock system, motorized			
			Emergency lid-lock release			
			Locking and protection against opening along the run.			
			Lid dropping protection			
Port in the lid for calibration and operation checking						
Ergonomic design that allows close the lid effortless.						
Unbalance detection and switch off.						
Rotors can be removed with the lid closed.						
Hermetic lids.						
Rotors and adapters autoclavable, easy to install by the user						

			Ventilation system to reduce temperature increasing.			
		<b>Available Rotors</b>	<b>Rotor type – 01</b>			
			ROTOR: ANGLE FIXED 45°			
			Max. Capacity: 16 x 0.2 ml.			
			RPM Max.: 15.000			
			RCF Max. (xg): 13.080			
			<b>Rotor Type – 02</b>			
			ROTOR: ANGLE FIXED 30°			
			Max. Capacity: 12 x 1.5-2 ml.			
			RPM Max.: 15.000			
			RCF Max. (xg): 15.596			
		<b>Warranty</b>	2 years			
		<b>Additional info</b>				
		Make	Please specify			
		Model	Please specify			
		Country of Origin	Please specify			
		Country of Manufacturer	Please specify			
		A manufacturer Authorization Letter should be provided				
		Brand name, Product Catalog and Model no should be available. Requested specification should be stated in the Catalog page and product web site.				
		If you fail to fulfill the requested specification by the university [equipment supply with wrong specification] the equipment would be rejected after goods delivery to the university.				
<b>18</b>	<b>Binocular Microscope</b>	Observation method	Brightfield	10		
		Optical system	Infinity corrected			
		Head	Binocular, 360 rotating			
		Interpupillary distance (mm)	48-75			
		Dioptric adjustment	Should be on both tubes			
		Eyepieces	10x, Higher eye point			
			with fixing screws			

Field Number	20mm		
Nosepiece	Quadruple, Reversed, Bi-Directional		
Objective type	PLAN Achromatic		
Objectives	Should be anti-fungus treated		
Standard objectives	4x/0.10, W.D. 16.8 mm		
	10x/0.25, W.D. 5.8 mm		
	40x/0.65, W.D. 0.43 mm		
	100x/1.25 (Oil), W.D. 0.13 mm		
	100x/1.25 (Water), W.D. 0.13 mm		
Oil and Water immersion should be available			
Focusing System	Coaxial and Fine		
Stage Dimensions	At least 150x135		
Condenser Type	Single Position Centrable Abbe condenser with focusable by rack and pinion and 1.25NA		
Light source and power (W)	X-LED 3.6W		
Lifetime of Power source	More than 65,000hours		
Power Supply	250V /50Hz		
Should include	Dust cover		
	Immersion oil-10ml		
	Tension adjustment tool		
	Microscope Slide packs(72/Pk)*01		
<b>Warranty</b>	<b>Minimum 05 years</b>		
Spare parts availability	10 years		
User reference list	More than 10 years		
<b>Additional info</b>			
Make	Please specify		
Model	Please specify		
Country of Origin	Please specify		
Country of Manufacturer	Please specify		
Instrument should be European CE Certified			
A manufacturer Authorization Letter should be provided			
Brand name, Product Catalog and Model no should be available. Requested specification should be stated in the Catalog page and product web site.			
If you fail to fulfill the requested specification by the university [equipment supply with wrong specification] the equipment would be rejected after goods delivery to the university.			

19	Sieve set	<b>Material:</b>	Frame: Brass	1		
			Mesh: Stainless Steel			
		<b>Sieve openings include</b>	5.00 mm			
			4.00 mm			
			3.00 mm			
			2.00 mm			
			1.00 mm			
			600 µm			
			500 µm			
			400 µm			
			300 µm			
			250 µm			
			125 µm			
			63 µm			
		<b>Accessories:</b>	Stainless steel lid and receiver pan			
<b>Application:</b>	Wet and dry sieving for microplastic, sediments and seaweed-associated particulate analysis.					
<b>Warranty:</b>	1-year warranty					
20	Solar Power System	<b>Performance Requirements</b>		1		
		<b>System Overview</b>				
		System Type:	Off-grid			
		Nominal Power Output:	3 kW (AC)			
		System Voltage:	230–240 V AC single-phase (for residential)/ 400 V AC three-phase (for commercial)			
		Daily Energy Yield:	(~12–15 kWh/day)			
		<b>Photovoltaic (PV) Modules</b>				
		Type:	Crystalline Silicon (Monocrystalline)			
		Rated Power:	(450–500 ±3% W per module)			
		Efficiency:	(≥ 20% (mono) / ≥ 17% (poly))			
		Maximum System Voltage:	1,000 V DC (grid-tied)			
		Temperature Coefficient:	≤ -0.35%/°C (power)			
		Front Glass:	(Tempered, low-iron, anti-reflective)			
		Frame:	(Anodized aluminum, corrosion-resistant)			
		Junction Box:	(IP65, with bypass diodes)			
Connector Type:	(MC4 compatible)					

	Expected Life:	25 years			
	<b>Solar Inverter</b>				
	Type:	String inverter			
	Rated Capacity:	(3 kW AC)			
	Input DC Voltage Range:	(200–600 V DC)			
	Maximum DC Power:	(3.3–3.6 kW)			
	Maximum Efficiency:	(≥ 98%)			
	Output Voltage:	(230 V AC, 50 Hz (single-phase))			
	THD (Total Harmonic Distortion):	(≤ 3%)			
	Display & Communication:	(LCD / Wi-Fi / Bluetooth / RS485 / App monitoring)			
	<b>Mounting Structure</b>				
	Type:	ground-mounted			
	Material:	Hot-dip galvanized			
	Design Wind Load:	≥ 150 km/h			
	Corrosion Protection:	(Anti-corrosion coating / anodized aluminum)			
	Module Tilt:	(Adjustable, ±10° for seasonal optimization)			
	<b>Balance of System (BOS)</b>				
	DC Cabling:	(UV-resistant, PV-grade, double-insulated (≥1.5 mm <sup>2</sup> ))			
	Connectors:	(MC4 or equivalent)			
	AC Cabling:	(Copper conductor, insulated for 230–240 V, compliant with local electrical codes)			
	Combiner Box:	(IP65, with DC fuses, surge protection, and monitoring points)			
	<b>Monitoring and Control</b>				
	Display & Communication:	(LCD / Wi-Fi / Bluetooth / RS485 / App monitoring)			
	<b>Protection &amp; Safety</b>				
	DC reverse polarity protection				
	DC and AC overcurrent protection				
	Overvoltage protection				
	Overtemperature protection				
	Surge protection Device (SPD)for DC and AC sides				
	Isolation switch for maintenance				

	Earthing: As per IEC 60364 / local code				
	Earth fault detection				
	Anti-Islanding: (automatically shuts down the inverter when the utility grid supply fails)	Must comply with IEEE 1547 / IEC 62116			
	Structure must prevent module slipping, provide grounding points				
	<b>Accessories</b>				
	<b>Environmental Conditions</b>				
	Operating Temperature:	(10°C to 40°C)			
	Relative Humidity:	(≤80% non-condensing)			
	<b>Compliance and Documentation</b>				
	ISO 9001, ISO 14001				
	IEC 61215 and IEC 61730 for modules, IEC 62109 and IEEE 1547 for inverter safety and grid interconnection, and IEC 60364 for installation.				
	RoHS				
	System design and layout drawing				
	Single-line wiring diagram				
	Product datasheets and certificates				
	Factory test reports (modules and inverter)				
	Installation and operation manual				
	Commissioning and performance test report				
	End-of-life module recycling compliance				
	<b>Warranty:</b>				
	Inverter:	10 years			
	Solar panel	Performance warranty 25 yrs Product warranty 12 yrs			
	Balance of system:	2 yrs			

		<b>Additional Information:</b>			
		Make:	Please specify		
		Model:	Please specify		
		Country of origin/Manufacture	Please specify		
21	Rotary Evaporator	<b>Motor</b>		1	
		Principle	DC		
		Speed Range:	(5 – 300 rpm (or better)		
		Increment Steps:	± (1 rpm)		
		<b>Heating Bath</b>			
		Temperature Range:	(Ambient to 180 °C (oil)		
		Temperature Stability:	(±0.5 °C)		
		Heat output	(Approx. 1300 W)		
		Tank Material:	(Stainless steel inner tank)		
		Filling Volume:	4 L		
		<b>Vacuum System</b>			
		Vacuum pump	Resistant to Corrosive Gases and Chemicals		
		Maximum vacuum	700 mmHg or better		
		Maximum flow rate	18L/ min		
		Mortar rotation	1450 RPM		
		Material	PTFE material		
		Motor Mechanism	No lubricant required		
			Driven direct by motor		
		External vacuum pump interface			
		Vacuum control:	Manual		
		<b>Chiller</b>			
		Tank volume	3.5–4 L		
		Temperature control range	- 20C [Minus Twenty] to Room Temperature		
		Display temperature resolution	0.1 C		
		Refrigerant	134A or equivalent		
		Recirculation function	Should be available		
		<b>Condenser</b>			
Type:	Double Spiral Design Vertical Glass Condenser				
Material:	(Borosilicate glass)				

	Cooling surface optimized for efficient condensation	Minimum 1400 cm <sup>2</sup>		
	Cooling medium:	Water recirculating chiller compatible		
	<b>Evaporation Flask</b>			
	Material:	(Borosilicate glass- Type Boro 3.3)		
	<b>Receiving Flask</b>			
	Material:	(Borosilicate glass)		
	Sizes:	(Matching evaporation flask series)		
	<b>Seals &amp; Gaskets:</b>	PTFE		
	<b>User Interface &amp; Controls</b>			
	Digital Display:	Speed Range, Heating Tem. Range		
	Control Panel:	(PID microprocessor, Tactile buttons/keypad)		
	Preset Programs:	(Optional memory for common solvent profiles)		
	Language:	English (menu text)		
	<b>Accessories (Standard)</b>			
	Evaporation flask	1		
	Receiving flask	1		
	Condenser (vertical or coil)	1		
	Clamps and support rings			
	<b>Power Supply:</b>	Single-phase 220/240V, 50-60 Hz		
	<b>Environmental Conditions</b>			
	Operating Temperature:	(10°C to 40°C)		
	Relative Humidity:	(≤80% non-condensing)		
	<b>Compliance and Documentation</b>			
	Protection class [Ingress Protection]	DIN EN 60529-IP 20 or equivalent		
	User manual			
	<b>Warranty:</b>	Should have 2 years warranty		
	<b>Additional Information:</b>			
	Make:	Please specify		
	Model:	Please specify		
	Country of origin/Manufacture	Please specify		
	Instrument should be European CE Certified or equivalent			

		Brand name, Product Catalog, Catalog page and Model no should be available. Requested specification should be stated in the Catalog page and product web site.				
		If you fail to fulfill the requested specification by the university [equipment supply with wrong specification] the equipment would be rejected after goods delivery to the university.				
22	<b>Splash Back for Existing Double Basin Sink (03 units)</b>			3		
		Material:	Stainless Steel 304			
		Guage	18/20			
		Height:	1.25 Feet			
		Width:	33 inch			
		Drawing: attached				
23	<b>Portable Biogas Unit</b>	<b>Type:</b>	Portable	1		
		<b>Performance Requirements</b>				
		Daily Feed Input:	(2-10 kg organic waste)			
		Daily Biogas Output:	(0.5–2.0 m <sup>3</sup> /day)			

	Methane Content:	(55-65%)		
	<b>Digester Tank</b>			
	Working volume:	(500 L)		
	Material:	(UV-stabilized HDPE (preferred)/Linear Low-Density Polyethylene (LLDPE)/Fiberglass Reinforced Plastic (FRP))		
	Wall Thickness:	(6 mm )		
	Pressure Rating:	(8–15 kPa )		
	<b>Gas Storage System</b>			
	Type:	(Integrated gas dome)		
	External flexible gas bag			
	Double-membrane low-pressure storage			
	Storage Capacity:	(0.5–2 m <sup>3</sup> )		
	<b>Gas Outlet Port:</b>			
	Fittings:	(brass)		
	Non-return valve included			
	<b>Gas Processing Components</b>			
	<b>Moisture Removal</b>			
	Condensate trap			
	Water drain valve			
	<b>H<sub>2</sub>S Scrubber</b>			
	Iron oxide filter cartridge			
	Replaceable filter media			
	Optional activated carbon filter			
	<b>Gas Pressure Regulation</b>			
	Low-pressure regulator (2–5 kPa)			
	Safety pressure relief valve (≥ 12 kPa)			
	Flame arrester			
	<b>Safety Specifications</b>			
	Integrated pressure relief valve			
	Flame arrester at gas outlet			
	Gas leak detection port			
	Gas piping rated for methane			
	Anti-overpressure membrane			

		<b>Environmental Conditions</b>			
		Operating Temperature:	(10°C to 40°C)		
		Relative Humidity:	(≤80% non-condensing)		
		<b>Compliance and Documentation</b>			
		CE			
		ISO 9001			
		ISO14001			
		User manual			
		<b>Warranty:</b>	1 Year		
		<b>Additional Information:</b>			
		Make:	Please specify		
		Model:	Please specify		
		Country of origin/Manufacture	Please specify		
		A manufacturer Authorization Letter should be provided			
		Brand name, Product Catalog, Catalog page and Model no should be available. Requested specification should be stated in the Catalog page and product web site.			
		If you fail to fulfill the requested specification by the university [equipment supply with wrong specification] the equipment would be rejected after goods delivery to the university.			
24	<b>Dual Purpose Laminar Flow</b>	<b>Performance Requirements</b>		1	
		<b>Airflow</b>			
		Mode	Vertical		
		Airflow Velocity:	0.30 – 0.60 m/s		
		Workroom air velocity control	A quiet and with 7 steps adjustable		
		Velocity precision	±0.05 m/s		
		<b>Filtration</b>			

	Final Filter	(HEPA, Efficiency: >99.97% @ 0.3 µm			
	Filter efficiency	Fed Std. 209E Class100 ISO 5			
	HEPA differential pressure	0-500Pa			
	<b>Construction &amp; Materials</b>				
	Work side	Double			
	Work Surface:	Stainless steel			
	Cabinet outer structure	Powder coated cold			
	Front Panel	Adjustable			
	Side Panels:	Glass Windows on left and right Side			
	<b>Work Zone</b>				
	Work Area Width	1400 mm			
	<b>Illumination &amp; Utilities</b>				
	Lighting:	(LED illumination ≥ 300 lux at work surface, Diffused, glare-free lighting)			
	UV Sterilization:	Standard with high efficiency UV Light			
	Power:	220/240V, 50/60Hz			
	<b>Controls &amp; Monitoring</b>				
	<b>Control Panel</b>				
	Display	LED			
	<b>Monitoring</b>				
	Velocity level Display	Should be indicated			
	<b>Base stand</b>	Combined base stand with castors			
	<b>Power Supply:</b>	Single-phase 220/240V, 50-60 Hz			
	<b>Standard</b>	Class 100 ISO 5 air cleanliness within the work zone as per Std 209E			
	<b>Compliance and Documentation</b>				
	CE				
	ISO				
	<b>Warranty:</b>	2 Years			
	<b>Additional Information:</b>				
	Make:	Please specify			

		Model:	Please specify			
		Country of origin/Manufacture	Please specify			
		<b>Conditions</b>				
		A manufacturer Authorization Letter should be provided				
		Brand name, Product Catalog, Catalog page and Model no should be available. Requested specification should be stated in the Catalog page and product web site.				
		If you fail to fulfill the requested specification by the university [equipment supply with wrong specification] the equipment would be rejected after goods delivery to the university.				
25	<b>Vacuum Pump for SUGOLD Model-DZF Vacuum oven</b>	<b>Type</b>	Oil-sealed rotary vane vacuum pump two-stage preferred	1		
		<b>Flow Rate:</b>	4–8 CFM range			
		<b>Ultimate Vacuum:</b>	≤ 1–5 Pa			
		<b>Motor Power</b>	0.25–0.5 HP			
		<b>Voltage</b>	220–240 V, 50 Hz			
		<b>Inlet Port</b>	3/8" SAE flare or compatible			
		<b>Construction:</b>	Aluminum alloy housing			
		Features	Anti-suck-back valve, oil sight glass, air-cooled motor			
		<b>Warranty:</b>	(1-3 Years)			
		<b>Additional Information:</b>				
		Make:	Please specify			
		Model:	Please specify			
		Country of origin/Manufacture	Please specify			
		A manufacturer Authorization Letter should be provided				
		Inlet/Outlet Ports Should be compatible with SUGOLD Model-DZF Vacuum oven				

		Brand name, Product Catalog, Catalog page and Model no should be available. Requested specification should be stated in the Catalog page and product web site.				
		If you fail to fulfill the requested specification by the university [equipment supply with wrong specification] the equipment would be rejected after goods delivery to the university.				
26	Vortex Mixture No 2	<b>Performance Requirements</b>		1		
		<b>Overview</b>				
		The vortex mixer shall be suitable for rapid mixing of liquids in test tubes, microtubes, and small laboratory containers through orbital motion.				
		<b>The unit shall support:</b>				
		Operating Modes:	Both Touch (momentary) operation mode and Continuous operation modes are needed			
		Variable speed control	Yes			
		Interchangeable mixing heads	Yes			
		Tube Compatibility	(Microcentrifuge tubes (0.5–2 mL)/Test tubes (up to 30 mm diameter)/Small culture tubes)			
		Maximum Load	(≤ 0.5 kg (standard head))			
		<b>Construction &amp; Materials</b>				
		<b>Housing</b>				
		Material:	powder-coated steel			
		Chemical-resistant surface				
		Non-corrosive finish				
		Easy-to-clean exterior				
		<b>Base</b>				
		Heavy-duty metal base for stability				
Anti-slip rubber feet						
Vibration-dampening design						
<b>Mixing Head</b>						

		Cup head made of durable rubber or silicone			
		Resistant to chemicals and wear			
		Removable and replaceable			
		<b>Mixing</b>			
		Motion:	(Orbital motion (circular vibration))		
		Speed range:	(300 -3000 rpm		
		Orbit Diameter:	(3.6 mm to 5 mm )		
		Speed Control:	Digital control		
		Speed Accuracy:	(±5% of set speed)		
		<b>Motor</b>			
		Type:	Brushless DC motor		
		<b>Safety &amp; Protection</b>			
		No exposed moving parts			
		Non-slip base			
		Stable low-center-of-gravity design			
		Overcurrent protection			
		Thermal overload protection			
		Noise Level:	≤ 60 dB		
		Electrical protection:	Complies with IEC/CE standards, The unit must be connected to a receptacle with proper grounding		
		<b>Power Supply:</b>	(Single-phase 220/240V, 50-60 Hz)		
		<b>Environmental Conditions</b>			
		Operating Temperature:	(10°C to 40°C)		
		Relative Humidity:	(≤80% non-condensing)		
		<b>Accessories</b>			
		Multi-tube platform			
		Microplate adapter			
		Foam insert holder			
		Flat pad attachment			
		<b>Compliance and Documentation</b>			
		IEC			
		ISO 9001			
		CE Marking (EU)			
		RoHS			

		User manual			
		<b>Warranty:</b>	Minimum 1 Year		
		<b>Additional Information:</b>			
		Make:	Please specify		
		Model:	Please specify		
		Country of origin/Manufacture	Please specify		
		A manufacturer Authorization Letter should be provided			
		Brand name, Product Catalog, Catalog page and Model no should be available. Requested specification should be stated in the Catalog page and product web site.			
		If you fail to fulfill the requested specification by the university [equipment supply with wrong specification] the equipment would be rejected after goods delivery to the university.			
27	<b>Autoclave with dryer</b>	Sterilizing Temperature	Maximum temperature should be 140°C	1	
		Usable Temperature	Dissolving: 40°C-100°C, Warming: 40°C-60°C		
		Operation Patterns	A Heating, Serialization, Exhaust		
			B Heating, Serialization, Exhaust, Warming		
			C Dissolving, Warming		
		<b>Dryer</b>	Warm air drying		
			Warm flow through 0.2 micro meter - Micro filter		
		<b>Capacity &amp; Configuration:</b>			
		Capacity:	(60L -65L)		
		Orientation Options:	Vertical (top-loading)		
		<b>Safety Systems</b>			
		Inter Lock System			
		Electro mechanical lock system			
		Double check system of lid close			
		Over pressure detector			
		Over Temperature Detector			

		Water lack preventer			
		Sensor breaks indicator			
		Abnormal Time Indicator			
		Safety valve breaker for slight leakage			
		Over current & Short circuit			
		<b>Power Supply:</b>	Three phase		
		<b>Environmental Conditions</b>			
		User manual			
		<b>Warranty:</b>	Should have 2-year warranty		
		<b>Additional Information:</b>			
		Make:	Please specify		
		Model:	Please specify		
		Country of origin/Manufacture	Please specify		
		A manufacturer Authorization Letter should be provided			
		Brand name, Product Catalog, Catalog page and Model no should be available. Requested specification should be stated in the Catalog page and product web site.			
		If you fail to fulfill the requested specification by the university [equipment supply with wrong specification] the equipment would be rejected after goods delivery to the university.			
28	Laboratory Water Distillation Plant/Distilled water small plant No 2	<b>Capacity:</b>	(4 Liters/hr)	1	
		<b>Water Quality:</b>			
		Conductivity:	3.0-4.0 $\mu\text{S cm}^{-1}$ (With treated water - 1.5-2.0 $\mu\text{S cm}^{-1}$ )		
		pH	5.5 – 6.0		
		Other	(Pyrogen-free)		
		<b>Construction Material:</b>			
		Boiling chamber:	(High-quality Stainless Steel (SS 304) Borosilicate Glass)		

	Condenser:	High-quality Stainless Steel (SS 304) or Borosilicate Glass		
	Heating Element:	High-graded Stainless Steel or Silica-sheathed (quartz) immersion heaters		
	Cover:	(Stainless steel/Powder coated)		
	<b>Operation:</b>	(Automatic, with auto-fill and auto-shutoff when the storage tank is full), (Cut-off water supply when there is no power supply)		
	<b>Safety Features:</b>			
	Overheat Protection:	Automatic shutdown if the temperature exceeds the safe limits		
	Dry-Run Protection:	Automatic shut-off when the water level falls too low.		
	Pressure Relief:	Valves to prevent hazardous pressure buildup		
	Electrical Safety:	Complies with IEC/CE standards, the unit must be connected to a receptacle with proper grounding		
	<b>Cooling Water Consumption:</b>	( ~ 10 liters cooling/L of D. water)		
	<b>Type:</b>	Bench-top		
	<b>Power Supply:</b>	Single-phase 220/240V, 50-60 Hz		
	<b>Warranty:</b>	2-3 Years		
	<b>Additional Information:</b>			
	Make:	Please specify		
	Model:	Please specify		
	Country of origin/Manufacture	Please specify		
	A manufacturer Authorization Letter should be provided			
	Brand name, Product Catalog, Catalog page and Model no should be available. Requested specification should be stated in the Catalog page and product web site.			
	If you fail to fulfill the requested specification by the university [equipment supply with wrong			

		specification] the equipment would be rejected after goods delivery to the university.				
29	Air Condition Machine  Type 1 24000 BTU	<b>Performance Requirements</b>		1		
		<b>Cooling Performance</b>				
		Nominal Cooling Capacity	(24,000 BTU/hr)			
		Indoor airflow:	(900 – 1,200 m <sup>3</sup> /h )			
		Coverage Area	(Approx. 35 – 60 m <sup>2</sup> )			
		<b>Power consumption:</b>	Less than 2.5 kW			
		<b>System Type</b>	(Split-type wall-mounted system)			
		<b>Compressor Type</b>	(Rotary			
		Inverter-driven	(Dual Inverter)			
		<b>Refrigerant System</b>				
		Refrigerant Type	R32 (low GWP refrigerant)			
		Refrigerant Control	Electronic expansion valve (inverter models)/(Capillary tube (fixed-speed models)			
		<b>Refrigerant Piping</b>				
		Liquid line: 6.35 mm (1/4")				
		Gas line: 15.88 mm (5/8")				
		Maximum piping length: ≥ 20 m				
		Maximum height difference: ≥ 10 m				
		<b>Indoor Unit Specifications</b>				
		<b>Construction</b>				
		High-impact ABS plastic casing				
		Washable air filters				
		Anti-corrosion evaporator coating (blue/gold fin)				
		<b>Noise Level</b>				
		Low speed:	≤ 45 dB			
		High speed:	≤ 55 dB			
		<b>Fan Speeds</b>				
		Minimum 3-speed fan				
		Auto fan mode				
<b>Air Distribution</b>						
Motorized vertical swing						
Manual or automatic horizontal swing						

		<b>Outdoor Unit Specifications</b>			
		<i>Casing</i>			
		Galvanized steel with powder coating			
		Anti-corrosion protection			
		<i>Condenser</i>			
		Copper tube with aluminum fins			
		Hydrophilic coating			
		<i>Noise Level</i>	≤ 55 – 60 dB		
		<i>Protection</i>			
		Weatherproof design (IPX4 minimum)			
		Anti-rust coating			
		<b>Control System</b>			
		<i>Controller</i>			
		Wireless remote controller (IR)			
		LED or hidden display panel			
		<i>Functions</i>			
		Timer (24-hour programmable)			
		Sleep mode			
		Turbo/Quick cooling mode			
		Eco mode			
		Auto restart after power failure			
		Low Refrigerant Detection			
		Auto Clean			
		Ocean Black Protection			
		Self-diagnosis function			
		<b>Safety &amp; Protection</b>			
		Overvoltage/undervoltage protection			
		Compressor thermal protection			
		Surge protection recommended			
		Overcurrent protection			
		Noise Level:	≤ 60 dB		
		Electrical protection:	Complies with IEC/CE standards, The unit must be connected to a receptacle with proper grounding		
		<b>Power Supply:</b>	(Single-phase 220/240V, 50-60 Hz)		

		<b>Operating Conditions</b>			
		<i>Cooling Mode</i>			
		Outdoor temperature range:	(18°C to 52°C)		
		<i>Heating Mode (if heat pump)</i>			
		Outdoor temperature range:	(-5°C to 24°C)		
		<i>Indoor Operating Range</i>	(16°C to 30°C adjustable setpoint)		
		<b>Accessories</b>			
		Micro Dust Protection Filter			
		Anti-bacterial Filter			
		Installation and After Service			
		<b>Compliance and Documentation</b>			
		IEC			
		ISO 9001			
		CE Marking (EU)			
		RoHS			
		User manual			
		<b>Warranty:</b>	(2 Years or above)		
		<b>Additional Information:</b>			
		Make:	Please specify		
		Model:	Please specify		
		Country of origin/Manufacture	Please specify		
		A manufacturer Authorization Letter should be provided			
		Brand name, Product Catalog, Catalog page and Model no should be available. Requested specification should be stated in the Catalog page and product web site.			
		If you fail to fulfill the requested specification by the university [equipment supply with wrong specification] the equipment would be rejected after goods delivery to the university.			

<b>Air Condition Machine</b>  <b>Type 2</b> <b>36000 BTU</b>	<b>Performance Requirements</b>		1		
	<b>Cooling Performance</b>				
	Nominal Cooling Capacity	(36,000 BTU/hr)			
	Indoor airflow:	(1000 – 2000 m <sup>3</sup> /h )			
	Coverage Area	(Approx. 35 – 60 m <sup>2</sup> )			
	<b>Power consumption:</b>	Less than 4.5 kW			
	<b>System Type</b>	(Split-type wall-mounted system)/(Ceiling cassette type)			
	<b>Compressor Type</b>	(Rotary			
	Inverter-driven	(Dual Inverter)			
	<b>Refrigerant System</b>				
	Refrigerant Type	R32 (low GWP refrigerant)			
	Refrigerant Control	Electronic expansion valve (inverter models)/(Capillary tube (fixed-speed models)			
	<b>Refrigerant Piping</b>				
	Liquid line: 9.52mm (3/8")				
	Gas line: 19mm (3/4")				
	Maximum piping length: ≥ 20 m				
	Maximum height difference: ≥ 10 m				
	<b>Indoor Unit Specifications</b>				
	<b>Construction</b>				
	High-impact ABS plastic casing				
	Washable air filters				
	Anti-corrosion evaporator coating (blue/gold fin)				
	<b>Noise Level</b>				
	Low speed:	≤ 55 dB			
	High speed:	≤ 60 dB			
	<b>Fan Speeds</b>				
	Minimum 3-speed fan				
	Auto fan mode				
	<b>Air Distribution</b>				
	Motorized vertical swing				
Manual or automatic horizontal swing					

	<b>Outdoor Unit Specifications</b>				
	<i>Casing</i>				
	Galvanized steel with powder coating				
	Anti-corrosion protection				
	<i>Condenser</i>				
	Copper tube with aluminum fins				
	Hydrophilic coating				
	<i>Noise Level</i>	≤ 55 – 60 dB			
	<i>Protection</i>				
	Weatherproof design (IPX4 minimum)				
	Anti-rust coating				
	<b>Control System</b>				
	<i>Controller</i>				
	Wireless remote controller (IR)				
	LED or hidden display panel				
	<i>Functions</i>				
	Timer (24-hour programmable)				
	Sleep mode				
	Turbo/Quick cooling mode				
	Eco mode				
	Auto restart after power failure				
	Low Refrigerant Detection				
	Auto Clean				
	Ocean Black Protection				
	Self-diagnosis function				
	<b>Safety &amp; Protection</b>				
	Overvoltage/undervoltage protection				
	Compressor thermal protection				
	Surge protection recommended				
	Overcurrent protection				
	Noise Level:	≤ 60 dB			

		Electrical protection:	Complies with IEC/CE standards, The unit must be connected to a receptacle with proper grounding				
		<b>Power Supply:</b>	(Single-phase 220/240V, 50-60 Hz)				
		<b>Operating Conditions</b>					
		<i>Cooling Mode</i>					
		Outdoor temperature range:	(18°C to 52°C)				
		<i>Heating Mode (if heat pump)</i>					
		Outdoor temperature range:	(-5°C to 24°C)				
		<i>Indoor Operating Range</i>	(16°C to 30°C adjustable set point)				
		<b>Accessories</b>					
		Micro Dust Protection Filter					
		Anti-bacterial Filter					
		Installation and After Service					
		<b>Compliance and Documentation</b>					
		IEC					
		ISO 9001					
		CE Marking (EU)					
		RoHS					
		User manual					
		<b>Warranty:</b>	(2 Years or above)				
		<b>Additional Information:</b>					
		Make:	Please specify				
		Model:	Please specify				
		Country of origin/Manufacture	Please specify				
		A manufacturer Authorization Letter should be provided					
		Brand name, Product Catalog, Catalog page and Model no should be available. Requested specification should be stated in the Catalog page and product web site					
		If you fail to fulfill the requested specification by the university [equipment supply with wrong specification] the equipment would be rejected after goods delivery to the university					
30	Wet & Dry Vacuum Cleaner	<b>Performance Specifications</b>		1			
		Motor/Power/Wattage	1400 W or higher				
		Capacity:	25 Liters or higher				
		<b>Functional Features</b>					
		Wet & dry suction capability					

	Blower function			
	Automatic shut-off for wet cleaning			
	Thermal Protectionf Motor,			
	Double Insulated Motor Housing,			
	IPX4 Splash-Resistant Rating,			
	Secure Hose and Tank Locking Mechanism,			
	Stable Anti-Tip Design,			
	Dust Filtration System			
	Filter Cleaning System:	Automatic		
	<b>Construction &amp; Materials</b>			
	Tank Material:	(High-impact Polypropylene (PP))		
	Head Material:	(High-strength ABS)		
	Motor Housing:	(Heat-resistant plastic)		
	Caster Wheels:	(360° swivel heavy-duty wheels)		
	Handle:	(Ergonomic top carry handle)		
	<b>Attachments</b>	Universal Nozzle, Crevice Nozzle, and Floor Nozzle Within Easy Reach.		
	<b>Dust bag</b>	5-Piece Fleece Filter Bag Pack		
	<b>Power supply</b>	Corded. 5m or above		
	<b>Safety Features:</b>			
	Low-noise operation	(≤75 dB)		
	Electrical Safety:	Complies with IEC/CE standards, The unit must be connected to a receptacle with proper grounding		
	<b>Accessories</b>			
	Flexible suction hose (1.5 – 3.0 meters)			
	Extension wands			
	Floor brush (wet & dry combination)			
	Crevice nozzle			
	Round brush			
	Upholstery nozzle			
	Foam filter (wet use)			
	Cartridge filter (dry use)			
	<b>Power Supply:</b>	Single-phase 220/240V, 50-60 Hz		
	<b>Compliance and Documentation</b>			

		CE / ISO / RoHS compliant			
		User manual			
		<b>Warranty:</b>	2 Years or above		
		<b>Additional Information:</b>			
		Make:	Please specify		
		Model:	Please specify		
		Country of origin/Manufacture	Please specify		
		A manufacturer Authorization Letter should be provided			
		Brand name, Product Catalog, Catalog page and Model no should be available. Requested specification should be stated in the Catalog page and product web site.			
		If you fail to fulfill the requested specification by the university [equipment supply with wrong specification] the equipment would be rejected after goods delivery to the university.			
<b>31</b>	<b>Orbital Shaker</b>	<b>Performance Requirements</b>		1	
		Speed Range:	(10 – 300 rpm )		
		Speed Accuracy:	(±1 rpm or ±1%)		
		Shaking features	Advance dual shaking features		
		Motion Type	Orbital and reciprocal motion types should be available [Operating both motion types]		
		<b>Load Capacity</b>	Medium: 7 kg		
		<b>Timer</b>			
		Range:	1 min – 999 min		
		<b>Platform Size</b>	Medium: 350 × 350 mm		
		<b>Type</b>	Bench-top platform shaker		
		Display	TFT Digital Display On-Touch Control		
		<b>Electrical Protection</b>			
		Overload			

		Short circuit			
		Electrical Safety:	The unit must be connected to a receptacle with proper grounding		
		<b>Power Supply:</b>	Single-phase 220/240V, 50-60 Hz		
		<b>Compliance and Documentation</b>			
		IEC/CE			
		ISO 9001			
		User manual			
		<b>Warranty:</b>	Should have Two-years		
		<b>Additional Information:</b>			
		Make:	Please specify		
		Model:	Please specify		
		Country of origin/Manufacture	Please specify		
		<b>Conditions</b>			
		A manufacturer Authorization Letter should be provided			
		Product experience	The bidder should have minimum of 08 years' experience in selling the quoted similar products in Sri Lanka (attach proof)		
		Brand name, Product Catalog, Catalog page and Model no should be available. Requested specification should be stated in the Catalog page and product web site.			
		If you fail to fulfill the requested specification by the university [equipment supply with wrong specification] the equipment would be rejected after goods delivery to the university.			
<b>32</b>	<b>Magnetic Stirrer</b>	<b>Type</b>	(Magnetic Stirrer with Hot Plate)	1	
		<b>Stirring</b>			
		Capacity	2 L		
		Speed	(100 – 1500 rpm)		
		Speed Accuracy	(±5%)		

		<b>Heating</b>			
		Heating range	Room temp to 350 °C		
		Control Accuracy	(±1°C)		
		Temperature Uniformity	(±2°C)		
		Heating Power	(300–1000 W)		
		Temperature Sensor	(PT100 / Thermocouple)		
		<b>Stir Bars Compatibility</b>			
		PTFE-coated magnetic stir bars			
		Sizes:	(10 mm to 60 mm)		
		Configuration:	(Octagonal or cylindrical)		
		<b>Construction and Materials</b>			
		Housing material	Should be chemical resistant		
		Top plate	Should be chemical resistant		
		PID-controlled temperature regulation			
		<b>Drive System</b>			
		Brushless DC motor (preferred)			
		Low-noise operation (<50 dB)			
		Long service life (>10,000 hours)			
		Stable torque at low speeds			
		Anti-slip magnetic coupling			
		<b>Control System</b>			
		Display	Digital LED		
		Digital speed setting			
		Digital temperature setting			
		Timer (0–999 min)			
		Overheat protection alarm			
		Error diagnostics			
		<b>Safety Systems</b>			
		Over-temperature protection			
		Residual heat warning indicator			
		Short circuit protection			
		Motor overload protection			
		Anti-slip feet			
		Insulated internal wiring			

	Electrical Safety:	(Complies with IEC/CE standards, The unit must be connected to a receptacle with proper grounding)		
	<b>Power Supply:</b>	(Single-phase 230V, 50 Hz)		
	<b>Environmental Conditions</b>			
	Operating Temperature:	(10°C to 40°C)		
	Relative Humidity:	(≤80% non-condensing)		
	<b>Compliance and Documentation</b>			
	IEC			
	ISO 9001			
	CE Marking (EU)			
	RoHS			
	User manual			
	<b>Warranty:</b>	1 Year		
	<b>Additional Information:</b>			
	Make:	Please specify		
	Model:	Please specify		
	Country of origin/Manufacture	Please specify		
	A manufacturer Authorization Letter should be provided			
	Brand name, Product Catalog, Catalog page and Model no should be available. Requested specification should be stated in the Catalog page and product web site.			
	If you fail to fulfill the requested specification by the university [equipment supply with wrong specification] the equipment would be rejected after goods delivery to the university.			

33	Shoe Cover Dispenser	<b>Overview</b>		1		
		Capacity:	(Shoe cover refill cartridge (up to 100 Pairs))			
		Hands-free shoe cover application device				
		Type	Automatic			
		Application:	Hygienic dispensing and fitting of disposable shoe covers			
		Successful Application Rate	(≥ 98%)			
		Application Time	(≤ 2 seconds)			
		Slip Resistance				
		Easy-to-load	Shoe Cover Box slides into the dispenser.			
		Easy to use:	LED smart guide with LED light guides wearer exactly where to place their foot; light will turn off when the shoe cover is correctly fitted.			
		Fault detection:	The Intelligent software automatically detects the malfunctions and displays the corresponding malfunction code.			
		<b>Construction and Materials:</b>				
		<b>Outer Body</b>				
		Material:	ABS high-impact plastic			
		Surface:	(Smooth, easy to disinfect)/(Scratch-resistant)			
		<b>Motor (Automatic Type)</b>				
		Type	(Low-noise DC motor)			
		<b>Internal Frame</b>				
		Material:	(Galvanized steel/ SS304)			
		<b>Shoe Cover Cartridge</b>				
		High-strength polypropylene frame				
		Replaceable disposable refill packs				
		<b>Shoe Cover Compatibility</b>				
		Material:	PE (Polyethylene)			
		Elastic band closure				
		Thickness:	25–50 microns			
		Universal fit (up to shoe size EU 46 / US 12)				
<b>Safety Systems</b>						
Non-slip base pads						

		Stable wide platform			
		Electrical overload protection			
		Anti-pinch mechanism			
		Enclosed moving parts			
		Child-safe design			
		Smart safety feature	Detects when foot is removed and reloads new shoe cover with infrared sensors. Hidden Retractor protects feet from being nipped when a foot is placed inside.		
		Electrical Safety:	(Complies with IEC/CE standards, The unit must be connected to a receptacle with proper grounding)		
		<b>Power Supply:</b>	(Single-phase 230V, 50 Hz)		
		<b>Environmental Conditions</b>			
		Operating Temperature:	(10°C to 40°C)		
		Relative Humidity:	(≤80% non-condensing)		
		<b>Compliance and Documentation</b>			
		IEC			
		ISO 9001			
		CE Marking (EU)			
		RoHS			
		User manual			
		<b>Warranty:</b>	1 Year		
		<b>Additional Information:</b>			
		Make:	Please specify		
		Model:	Please specify		
		Country of origin/Manufacture	Please specify		
		A manufacturer Authorization Letter should be provided			
		Brand name, Product Catalog, Catalog page and Model no should be available. Requested specification should be stated in the Catalog page and product web site.			
		If you fail to fulfill the requested specification by the university			

		[equipment supply with wrong specification] the equipment would be rejected after goods delivery to the university.				
34	Sonication Bath No 2	<b>Ultrasonic System;</b>		1		
		Ultrasonic Frequency:	(35–40 kHz)			
		Ultrasonic Power Output:	(100–300 W, adjustable)			
		Operation Mode/Power Control:	(Continuous or pulse mode, adjustable intensity)			
		Uniformity:	(Even ultrasonic distribution throughout bath)			
		<b>Bath and Tank:</b>				
		Tank Capacity:	(10 liters)			
		Tank Material:	Stainless steel (SUS 304 or equivalent), corrosion-resistant			
		Internal Dimensions:	Please specify			
		Drain Valve:	Preferred			
		Lid:	(Removable stainless steel)			
		<b>Housing Material:</b>	(Powder-coated steel)			
		<b>Temperature Control (if needed)</b>				
		Heating Function:	(built-in heater)			
		Temperature Range:	(Ambient +5°C to 60–80°C)			
		Temperature Accuracy:	(±2°C)			
		Temperature Display:	(Digital LED/LCD display)			
		<b>Timer and Controls</b>				
		Timer Range:	(1–99 minutes/ continuous operation)			
		Control Panel:	(Digital)			
		Display:	(Time, temperature, and power status)			
		<b>Safety Features:</b>				
		Overload and short-circuit protection				
		Overheating protection				
		Low-noise operation	≤60 dB			
		Insulated housing				
		Electrical Safety:	Complies with IEC/CE standards, The unit must be connected to a receptacle with proper grounding			
<b>Accessories</b>						

		Sample racks and baskets	Removable mesh basket (Stainless Steel) for beakers,Stainless Steel handle, heat resistant			
		Test tube racks	Stainless Steel			
		Drain hose				
		<b>Power Supply:</b>	Single-phase 220/240V, 50-60 Hz			
		<b>Environmental Conditions</b>				
		Operating Temperature:	(10°C to 40°C)			
		Relative Humidity:	(≤80% non-condensing)			
		<b>Installation:</b>	(Bench-top)			
		<b>Compliance and Documentation</b>				
		CE / ISO / RoHS compliant				
		User manual and calibration certificate				
		<b>Warranty:</b>	Minimum 1Year			
		<b>Additional Information:</b>				
		Make:	Please specify			
		Model:	Please specify			
		Country of origin/Manufacture	Please specify			
		A manufacturer Authorization Letter should be provided				
		Brand name, Product Catalog, Catalog page and Model no should be available. Requested specification should be stated in the Catalog page and product web site.				
		If you fail to fulfill the requested specification by the university [equipment supply with wrong specification] the equipment would be rejected after goods delivery to the university.				
<b>35</b>	<b>Centrifuge</b>	<b>Speed Range</b>		1		
		Maximum Speed:	(14,500 RPM)			
		Speed Increment:	(10 RPM)			
		Speed Accuracy:	(±20 RPM)			
		Acceleration Time:	(≤ 20 seconds (to max speed, unloaded))			
		Deceleration Time:	(Programmable braking (soft, normal, fast))			
		Short spin key for brief spin				
		Air flow to minimize sample heating during the run				
		<b>Relative Centrifugal Force (RCF)</b>				
		Maximum RCF:	(Up to 21,000 × g (depending on rotor))			

	RCF Adjustment:	(Direct RCF input)		
	RCF Accuracy:	(±5%)		
	<b>Timer</b>			
	Range:	(1 second to 99 hours 59 minutes)		
	Continuous Mode:	(Yes)		
	Timer Accuracy:	(±1 second)		
	<b>Mechanical Design Specifications</b>			
	<b>Construction</b>			
	Housing:	Powder-coated steel		
	Chamber:	(Stainless steel (AISI 304 or equivalent), corrosion-resistant)		
	Lid:	(Reinforced composite with metal hinge support)		
	<b>Motor</b>			
	Type:	Brushless DC motor		
	Drive System:	(Direct drive)		
	<b>Rotor Types</b>			
		(Fixed-angle rotor (24 × 1.5/2.0 mL tubes typical))		
	<b>Rotor</b>			
	Material	Aluminum alloy		
	Autoclavable (121°C, 20 min)			
	Rotor Recognition:	(Automatic rotor detection)		
	Rotor Lid Should be chemical resistant			
	<b>Safety Systems</b>			
	Automatic lid lock during operation			
	Lid release only when rotor stops completely			
	Imbalance detection system (auto shutdown)			
	<b>Accessories</b>			
	Standard rotor			
	Tube adapters (various sizes)			
	Rotor wrench			
	Power cord			
	<b>Power Supply:</b>	Single-phase 220/240V, 50-60 Hz		

		<b>Compliance and Documentation</b>			
		European CE Marking certified			
		User manual			
		<b>Warranty:</b>	2 Years		
		<b>Additional Information:</b>			
		Make:	Please specify		
		Model:	Please specify		
		Country of origin/Manufacture	Please specify		
		<b>Conditions</b>			
		Back up machine should be provided [when machine break down during warranty period]			
		Brand name, Product Catalog, Catalog page and Model no should be available. Requested specification should be stated in the Catalog page and product web site.			
		If you fail to fulfill the requested specification by the university [equipment supply with wrong specification] the equipment would be rejected after goods delivery to the university.			
<b>36</b>	<b>Drying Oven</b>	<b>Overview</b>		2	
		The laboratory drying oven shall be an electrically heated, microprocessor-controlled unit capable of maintaining precise and uniform temperature conditions within a defined working chamber.			
		<b>Temperature Specifications</b>			
		Temperature Range:	(Ambient +5°C to 250°C )		
		Resolution:	(0.1°C)		
		Temperature Accuracy:	(±1°C at 100°C), (±2°C at maximum rated temperature)		

	Temperature Stability:	( $\pm 0.5^{\circ}\text{C}$ after equilibrium), ( $\pm 3^{\circ}\text{C}$ at maximum rated temperature)		
	Heat-Up Time:	( $\leq 30$ minutes to reach $150^{\circ}\text{C}$ (empty chamber))		
	<b>Capacity:</b>	500 L		
	<b>Construction &amp; Materials</b>			
	Outer Body			
	Material:	(Powder-coated mild steel/stainless steel)		
	Corrosion-resistant finish			
	<b>Inner Chamber</b>			
	Material:	(AISI 304 stainless steel)		
	Smooth, rounded corners for easy cleaning			
	Scratch and corrosion resistant			
	Seamless or TIG-welded construction			
	<b>Heater</b>			
	Power	5 kW		
	Heating Element Type	(Tubular electric resistance heater)		
	Sheathed heating elements			
	Air-heating design			
	<b>Resistance Wire</b>			
	Material:	(Nickel-Chromium alloy (NiCr 80/20) or equivalent)		
	Maximum operating temperature:	( $\geq 1100^{\circ}\text{C}$ (element core))		
	<b>Sheath Material</b>			
	Stainless steel (AISI 304)			
	Corrosion-resistant			
	<b>Insulation</b>			
	Material:	(High-density mineral wool/Ceramic fiber )		
	Thickness:	( Minimum 50 mm)		
	Heat loss minimized for energy efficiency			
	<b>Door Assembly</b>			
	Single front-opening door			
	Door switch to disable heating when opened			
	<b>Shelving</b>			

	Removable stainless steel wire shelves			
	Minimum 4 shelves included			
	Adjustable shelf positions			
	Load capacity:	(≥ 20 kg per shelf)		
	<b>Air Circulation System</b>			
	Type	Convective		
	<b>Fan</b>			
	Stainless steel impeller			
	High-temperature rated motor			
	Located outside chamber airflow path where possible			
	<b>Display</b>			
	Digital display LED			
	Dual display (Set temperature / Actual temperature)			
	Temperature alarm indication			
	<b>Timer Function</b>			
	Programmable timer:	(1 minute to 999 hours)		
	Delay start option			
	<b>Safety &amp; Protection</b>			
	<b>Over-Temperature Protection</b>			
	Independent mechanical thermostat (Class 2 safety)			
	Adjustable safety cut-off			
	Audible and visual alarm			
	<b>Door Safety</b>			
	Heating disabled when door is opened (optional interlock)			
	<b>Thermal Protection</b>			
	Overheat cut-off relay			
	Redundant temperature sensing			
	<b>Electrical Protection</b>			
	Overcurrent protection			
	Short-circuit protection			

		Grounding terminal			
		Complies with IEC/CE standards, The unit must be connected to a receptacle with proper grounding			
		<b>Power Supply:</b>	(Single-phase 220/240V, 50-60 Hz)		
		<b>Environmental Conditions</b>			
		Operating Temperature:	(10°C to 40°C)		
		Relative Humidity:	(≤80% non-condensing)		
		<b>Accessories</b>			
		Additional shelves			
		Temperature validation kit			
		<b>Compliance and Documentation</b>			
		Calibration certificate			
		IEC			
		ISO 9001			
		CE Marking (EU)			
		RoHS			
		User manual			
		<b>Warranty:</b>	1 Years		
		<b>Additional Information:</b>			
		Make:	Please specify		
		Model:	Please specify		
		Country of origin/Manufacture	Please specify		
		A manufacturer Authorization Letter should be provided			
		Brand name, Product Catalog, Catalog page and Model no should be available. Requested specification should be stated in the Catalog page and product web site.			
37	Conductivity Meter	<b>Measurements</b>		1	
		pH			
		mV (ORP)			
		Temperature			
		Conductivity			
		TDS			

	Optional: Ion concentration (ISE mode)			
	<b>Measurement Specifications</b>			
	<b>pH Measurement</b>			
	Measurement Range:	(-2.000 to 16.000 pH)		
	Resolution:	(0.1 / 0.01 / 0.001 selectable)		
	Accuracy:	(±0.001 pH (±1 digit))		
	Repeatability:	(±0.001 pH)		
	Temperature Compensation:	Manual		
	Calibration Points:	(1–5-point calibration)		
	Calibration Recognition:	(Automatic buffer recognition (NIST, DIN, custom))		
	Supported buffers:	(pH 1.68, pH 4.01, pH 6.86, pH 7.00, pH 9.18, pH 10.01)		
	<b>mV / ORP Measurement</b>			
	Range:	(±2000.0 mV)		
	Resolution:	(0.1 mV)		
	Accuracy:	(±0.2 mV)		
	Offset Adjustment:	(±200 mV)		
	<b>Temperature Measurement</b>			
	Range:	(-10.0 to 120.0 °C)		
	Resolution:	(0.1 °C)		
	Accuracy:	(±0.2 °C)		
	Compensation Range:	(-10–110 °C)		
	<b>Conductivity</b>			
	Range	0 to 200 mS		
	Resolution	0.01 µS to 0.1 mS		
	Accuracy	±1 % full scale		
	Calibration	Auto; one point per range		
	<b>TDS</b>			
	Range	0 to 200 ppt (TDS factor 1.0)		
	Resolution	0.01 ppm to 0.1 ppt		
	Accuracy	±1 % full scale		
	Calibration	Manual; 1 point/range		
	<b>Response Characteristics</b>			
	Warm-up Time:	(≤ 30 seconds)		

	Stabilization Time:	(≤ 3 seconds (typical))		
	Drift:	(< 0.002 pH/hour)		
	Response Time (95%):	(< 5 seconds)		
	<b>Mechanical/Construction/ Design Specifications</b>			
	Housing Material:	(ABS or chemically resistant polymer)		
	Display:	(Digital, LCD)		
	Keypad:	membrane keys		
	Electrode Holder:	(Adjustable arm included)		
	<b>User Interface &amp; Software</b>			
	<b>Display Features</b>			
	Switch between pH, mV, conductivity and TDS with a press of a button			
	Calibration status indicator			
	Electrode slope & offset display			
	Stability indicator			
	Real-Time Clock	Time and date stamp on calibration and stored		
	Date/time stamp			
	<b>Data Management</b>			
	Internal Memory:	(≥ 500 data sets)		
	Data Logging:	(Manual, timed interval, or auto-stable)		
	USB port:			
	RS232 interface			
	Optional Ethernet			
	Printer support			
	<b>Calibration Features</b>			
	Automatic buffer recognition (NIST/DIN/custom)			
	Electrode diagnostics:			
	Slope (% efficiency)			
	Offset (mV)			
	Calibration reminder (time-based or usage-based)			
	Acceptable slope range:	(95% – 105%)		
	<b>Electrode Compatibility</b>			

	The meter shall support:				
	Combination pH electrodes				
	Refillable electrodes				
	Double junction electrodes				
	ORP electrodes				
	ISE electrodes				
	Connector types:	(BN/C (standard))			
	<b>Safety Systems</b>				
	<b>Safety &amp; Protection</b>				
	Overvoltage protection				
	Reverse polarity protection				
	Input short-circuit protection				
	ESD protection ( $\pm 8$ kV contact discharge)				
	Electrical Safety:	Complies with IEC/CE standards, The unit must be connected to a receptacle with proper grounding			
	<b>Accessories</b>				
	<b>pH electrode:</b>				
	Structural design:	(Combination: Electrode-all-in one)			
	Junction Type:	Double Junction			
	Body Material:	Glass Body			
	Temperature probe				
	Electrode holder arm				
	Stirrer				
	Buffer solutions:	(pH 4.01, pH 7.00, pH 10.01)			
	Electrolyte x 20 ml, Standard solution				
	Power adapter				
	USB cable				
	<b>Conductivity Electrode/TDS</b>				
	<b>Power Supply:</b>	Two AA batteries (included), >100 hours (without backlight)			
	AC adapter	Single-phase 220/240V, 50-60 Hz			
	<b>Environmental Conditions</b>				
	Operating Temperature:	(10°C to 40°C)			
	Relative Humidity:	( $\leq 80\%$ non-condensing)			

		<b>Compliance and Documentation</b>				
		Calibration certificate				
		User manual				
		<b>Warranty:</b>	(1Year)			
		<b>Additional Information:</b>				
		Make:	Please specify			
		Model:	Please specify			
		Country of origin/Manufacture	Please specify			
		A manufacturer Authorization Letter should be provided				
		Brand name, Product Catalog, Catalog page and Model no should be available. Requested specification should be stated in the Catalog page and product web site.				
If you fail to fulfill the requested specification by the university [equipment supply with wrong specification] the equipment would be rejected after goods delivery to the university.						
<b>38</b>	<b>Automated Withering Trough</b>	<b>Performance</b>		1		
		Assure desired and even wither				
		Withering temperature	(25-35 °C)			
		hygrometric difference	(2-4 °C)			
		<b>Mechanical and Electrical</b>				
		<b>Trough</b>				
		Capacity	38 kg			
		Length	5 feet			
		Width	3 feet			
Plenum chamber volume	35 feet <sup>3</sup>					
Trough Bottom	Lined with a mesh (size)					

	<b>Material (Body)</b>	(Stainless Steel Grade 304/equivalent corrosion-resistant alloy)		
	Thickness:	(≥ 1.2 mm)		
	Finish:	Smooth, food-grade polish		
	<b>Material (Frame &amp; Support)</b>	(Mild steel with anti-corrosion paint or powder coating)		
	Rigid, vibration-resistant			
	<b>Heating Unit</b>			
	Duct heaters with temperature controller			
	Power	(3-6 kW)		
	Heating Elements:	(Stainless steel finned tubular heaters)		
	Maximum temperature	80°C		
	Temperature adjustment	by 1°C		
	Temperature controller with monitor			
	Uniform temperature distribution	(±2°C across airflow)		
	<b>Air Distribution</b>			
	Installed inline between blower and trough			
	Uniform air mixing chamber before entering leaf bed			
	Insulated air ducting:	(minimum 25 mm insulation thickness)		
	Fan capacity	min of 840 cfm		
	Fan type	Axial flow		
	Motor	1 hp 3 phase		
	VFD	Yes		
	Hygrometer (to read dry and wet bulb difference)			
	<b>Construction</b>			
	<input type="checkbox"/> Exterior - needed to be with rust proofed mild steel with textured stoved finish			
	<input type="checkbox"/> Interior – rust proofed mild steel, welded seams Shelves			

	<input type="checkbox"/> Shelves – anodized welded Aluminium section shelf on telescopic ball bearing mounted slides, sides to match wither baskets			
	<b>Trough Wall Configuration</b>			
	Walls extending above the mesh layers must be tapered inward to minimize air leakage around the edges and to direct airflow uniformly through the mesh layers			
	<b>Automation in withering trough</b>			
	VSD to control the speed of the fan or frequency of the motor			
		60 Hz, 230 V		
		3 phases		
		Programmable with display (with English interphase)		
		Control by potentiometer and external voltage		
	Load cell setup to measure the weight change of the tea leave			
		Maximum weight 50 kg		
		Cantilever type		
		IP65 protection		
		Precision 50-100 g		
		Load Cell Indicator with English interphase (Minimum 4 load cell reading display ability)		
	K-type thermocouple with display			
	<b>Control Panel</b>			
	Main power switch			
	Heater ON/OFF indicator			
	Temperature display (digital)			
	Adjustable thermostat knob or keypad			
	Heater stage indicators			
	Display with English interphase			
	Data logging capability			
	<b>Safety Features</b>			

	Over-temperature protection (thermal cut-out at ~55°C)			
	Airflow interlock (heater operates only when blower is running)			
	Fire-resistant insulation			
	Appropriate covering for moving parts			
	MCB / MCCB			
	Emergency stop switch			
	Electrical Safety:	Complies with IEC/CE standards, The unit must be connected to a receptacle with proper grounding		
	<b>Environmental Conditions</b>			
	Operating Temperature:	(20°C to 50°C)		
	Relative Humidity:	(≤80% non-condensing)		
	<b>Compliance and Documentation</b>			
	CE			
	ISO			
	ASTM			
	IEC			
	RoSH			
	User Manual			
	<b>Warranty:</b>	Minimum 2 years		
	<b>Additional Information:</b>			
	Make:	Please specify		
	Model:	Please specify		
	Country of origin/Manufacture	Please specify		
	A manufacturer Authorization Letter should be provided			
	Brand name, Product Catalog, Catalog page and Model no should be available. Requested specification should be stated in the Catalog page and product web site.			
	If you fail to fulfill the requested specification by the university			

		[equipment supply with wrong specification] the equipment would be rejected after goods delivery to the university.				
39	Orthodox Roller	<b>Performance</b>		1		
		Rupture leaf cells to Initiate oxidation				
		Shape leaves into twisted orthodox style				
		Express leaf juices uniformly				
		Maintain leaf integrity without excessive cutting				
		<b>Mechanical and Construction</b>				
		<b>Roller</b>				
		Capacity	(10 kg of withered tea leaf)			
		Diameter:	(500–600 mm)			
		<b>Rolling Table</b>				
		Material:	(Food-grade Stainless Steel SS316)			
		Thickness:	(≥ 2 mm)			
		Finish:	(Mirror or satin polish ( $R_a \leq 0.8 \mu\text{m}$ ))			
		<b>Centre cone</b>	(Brass material, modified Rettie cone).			
		Type	(Rettie cone)			
		Material:	(Food-grade Stainless Steel (SS316))			
		Height				
		<b>Battens</b>				
		No of battens	10			
		Type	(Crescent)			
		Depth:	(3–6 mm)			
		<b>Pressure Cap</b>				
		Material:	(Food-grade Stainless Steel)			
Mounting:	(Central shaft-guided)					
Pressure Application:	(Manual screw mechanism)					
Pressure cap weight have to be moved along its beam to apply different pressure application						
Adjustable rolling pressure:	(0–150 kg downward force)					
Gradual pressure increase capability						

	Pressure Control Mechanism:	(Manual screw-thread pressure system			
	<b>Barell</b>				
	Material:	(Food-grade Stainless Steel)/(Brass)			
	Thickness	(≥1.2 mm)			
	Finish:	(Mirror or satin polish (Ra ≤ 0.8 μm)			
	<b>Table frame:</b>				
	Material:	(Heavy-duty cast iron)			
	Frame Thickness:	(≥ 5 mm structural supports)			
	Vibration Dampers:	(Anti-vibration rubber pads)			
	Base Type:	(Floor-mounted with leveling bolts)			
	Needs to be with cast iron and steel pivot joints on ball bearing races				
	<b>Central Shaft</b>				
	Material:	(SS304)/(SS316)			
	Diameter:	(30–40 mm)			
	Mounting:	(Sealed bearing housing)			
	Bearing Type:	(Food-grade sealed ball bearings)			
	Alignment:	(Precision machined)			
	<b>Driving mechanism (crankshafts/gears)</b>				
	<b>Motor:</b>				
	Type:	(Totally Enclosed Fan-Cooled (TEFC) induction motor )			
	Power:	(1.5 – 2 HP)			
	Speed:	(1500 RPM)			
	<b>Gearbox:</b>				
	Type:	(helical gearbox)			
	Output Speed:	(40–65 RPM (adjustable)			
	Speed Control:	Variable Frequency Drive (VFD)			
	Torque Rating:	(Sufficient for full 10 kg load without stalling)			
	<b>Transmission:</b>				
	Coupling	(Direct coupling/Food-grade belt-driven system with protective guard)			
	Fully enclosed drive assembly				
	<b>Control Panel</b>				
	ON/OFF main switch				

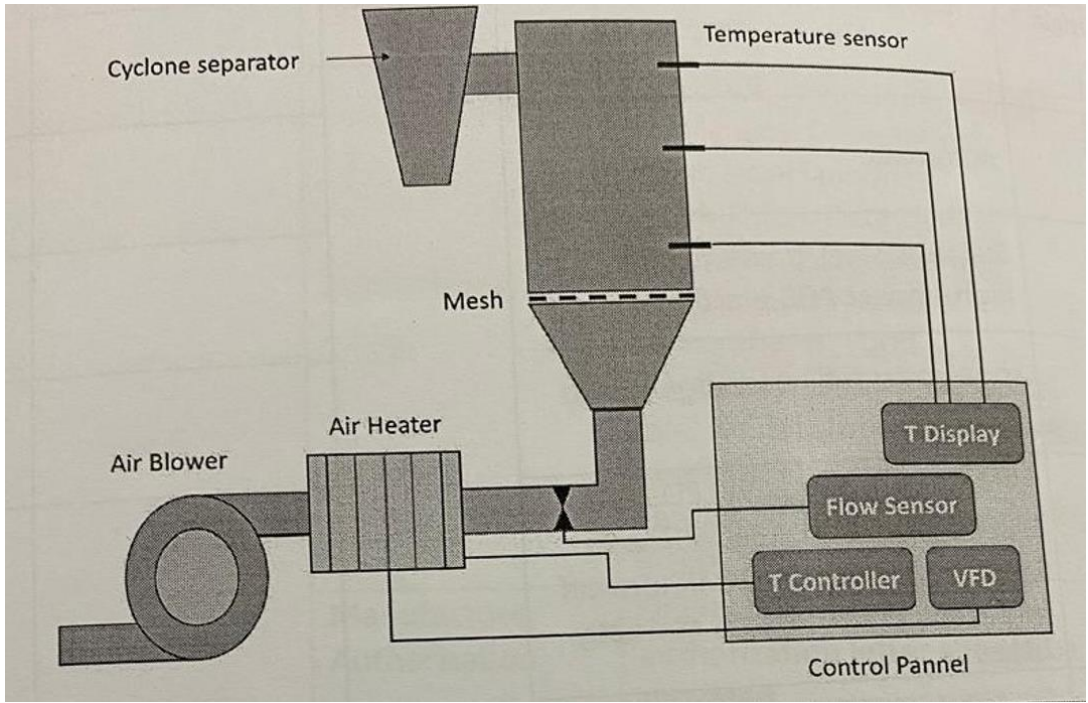
		Speed Control Knob (VFD)			
		Timer (0–60 min adjustable)			
		Pressure adjustment indicator			
		<b>Safety Features</b>			
		Full motor guard			
		Enclosed gear system			
		Emergency stop switch			
		Interlock on rolling cap			
		Thermal motor protection			
		Overload protection relay			
		Short-circuit protection			
		Electrical Safety:	Complies with IEC/CE standards, The unit must be connected to a receptacle with proper grounding		
		<b>Environmental Conditions</b>			
		Operating Temperature:	(20°C to 50°C)		
		Relative Humidity:	(≤80% non-condensing)		
		<b>Compliance and Documentation</b>			
		CE			
		ISO			
		IEC			
		User Manual			
		<b>Warranty:</b>	Minimum 1 Year		
		<b>Additional Information:</b>			
		Make:	Please specify		
		Model:	Please specify		
		Country of origin/Manufacture	Please specify		
		A manufacturer Authorization Letter should be provided			
		Brand name, Product Catalog, Catalog page and Model no should be available. Requested specification should be stated in the Catalog page and product web site.			

		If you fail to fulfill the requested specification by the university [equipment supply with wrong specification] the equipment would be rejected after goods delivery to the university.				
40	FBD Dryer	<b>Performance Requirements</b>		1		
		Batch Capacity:	8–15 kg wet tea per batch			
		Drying the 'Dhool' with about 55–65% moisture to produce made tea with about 3% moisture				
		Drying time	(15–25 minutes)			
		Rapid and even moisture removal				
		Minimizing scorching and case hardening				
		Uniform Drying	(±0.5% moisture)			
		<b>Mechanical Design Specifications</b>				
		<b><i>Drying Chamber</i></b>				
		Material:	(SS304 (standard))			
		Finish:	(Food-grade polish ( $R_a \leq 0.8 \mu\text{m}$ ))			
		Welding:	(TIG welded, ground smooth)			
		Configuration	(Rectangular fluidization chamber)			
		Removable product container				
		<b><i>Air Distributor Plate</i></b>				
		Material:	(SS304 perforated plate)			
		Hole Diameter:	(1.5–3 mm)			
		Open Area:	(8–15%)			
		Uniform hole distribution				
		Removable for cleaning				
<b><i>Heating System</i></b>						
Electric Heater						
Power Rating	(12–18 kW)					
Type	(Finned tubular heaters)					
Temperature Range	(Up to 200°C)					

	Temperature measurement	(K-type thermocouple with display at three different heights)			
	<b>Blower System</b>				
	Type	(Centrifugal blower)			
	Airflow	(50-100 CFM)			
	Motor Power	(2-3 HP)			
	Static Pressure	(300-600 Pa)			
	Flow sensor	(Hot wire anemometer type air flow sensor)			
	<b>Exhaust &amp; Dust Collection</b>				
	Type	Cyclone separator			
	Adjustable exhaust damper				
	<b>Structural Frame</b>				
	Material:	Mild Steel with powder coating			
	Heavy-duty support frame				
	Anti-vibration pads				
	Floor-mounted design				
	<b>Control System</b>				
	Main power switch				
	PID temperature controller				
	Digital temperature display				
	Batch timer (0-60 min)				
	Blower speed control	VFD			
	<b>Safety Systems</b>				
	Over-temperature cutoff				
	Heater interlock with blower				
	Emergency stop button				
	Thermal insulation (50 mm mineral wool)				
	Earthing & overload protection				
	Fire-resistant insulation				
	Electrical Safety:	(Complies with IEC/CE standards, The unit must be connected to a receptacle with proper grounding)			
	<b>Power Supply:</b>	(3-phase 400 V, 50 Hz)			
	<b>Environmental Conditions</b>				
	Operating Temperature:	(10°C to 40°C)			

Relative Humidity:	(≤80% non-condensing)
<b>Compliance and Documentation</b>	
IEC	
ISO 9001	
CE Marking (EU)	
User manual	
<b>Warranty:</b>	(1-3 Years)
<b>Additional Information:</b>	
Make:	Please specify
Model:	Please specify
Country of origin/Manufacture	Please specify

**Expected Design** – A similar design as shown in the figure below



		A manufacturer Authorization Letter should be provided			
		Brand name, Product Catalog, Catalog page and Model no should be available. Requested specification should be stated in the Catalog page and product web site.			
		If you fail to fulfill the requested specification by the university [equipment supply with wrong specification] the equipment would be rejected after goods delivery to the university.			
41	Acclimatization Chamber	Dimensions	Height - 6.6 Ft		
			Width - 4.6 Ft		
			Depth – 2 Ft		
		Roof	Plastic Green Sheet		
		light	4' long tube light provisions for each shelf		
		Switch	Separate switch for each tube light		
		Door	Lockable Double door		
		Covering Material	Should be covered four sides with 3mm thick transparent durable sheet		
		Fabrication Description	Structure should be with white color powder coated steel box bars 25 x 25mm		
			Three Stainless steel 1mm sheet 4.6 x 2 ft for shelves		
			Movable and lockable wheels (Clusters Wheels)		
			Shelf base supports		
			Three stainless steel shelves		
			Distance between each shelf 1.5Ft		
			Stand height - 2Ft		
			Air holes diameter - 1.5 cm		
	<b>Additional Information:</b>				
	Make:	Please specify			
	Model:	Please specify			

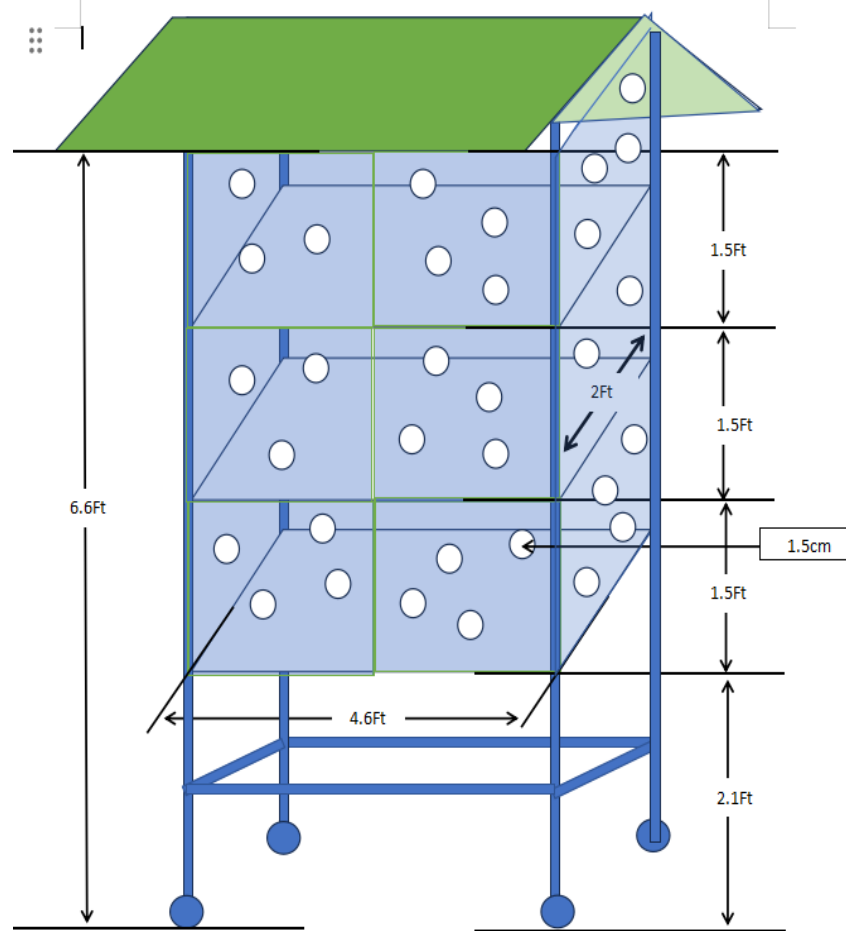
Country of origin/Manufacture | Please specify

A manufacturer Authorization Letter should be provided

Brand name, Product Catalog, Catalog page and Model no should be available. Requested specification should be stated in the Catalog page and product web site.

If you fail to fulfill the requested specification by the university [equipment supply with wrong specification] the equipment would be rejected after goods delivery to the university.

Expected design is given below.



42	pH Meter No 2	<b>Performance Requirements</b>		1		
		<b>Measurements</b>				
		pH				
		mV (ORP)				
		Temperature				
		<b>Measurement Specifications</b>				
		<b>pH Measurement</b>				
		Measurement Range:	(-2.000 to 16.000 pH)			
		Resolution:	0.01			
		Accuracy:	(±0.01 pH (±1 digit))			
		Calibration Points:	(1–5 point calibration)			
		Calibration Recognition:	(Automatic buffer recognition (NIST, DIN, custom))			
		<b>mV / ORP Measurement</b>				
		Range:	(±2000.0 mV)			
		Resolution:	(0.1 mV)			
		Accuracy:	(±0.2 mV)			
		Offset Adjustment:	(±200 mV)			
		<b>Temperature Measurement</b>				
		Range:	(-10.0 to 120.0 °C)			
		Resolution:	(0.1 °C)			
		Accuracy:	(±0.2 °C)			
		Compensation Range:	(0–100 °C)			
		<b>User Interface &amp; Software</b>				
		<b>Display Features</b>	LCD			
		Simultaneous display: pH, mV, temperature				
		Calibration status indicator				
		Electrode slope & offset display				
Stability indicator						
Date/time stamp						
<b>Safety Systems</b>						
<b>Safety &amp; Protection</b>						
Overvoltage protection						
Reverse polarity protection						

	Input short-circuit protection			
	ESD protection ( $\pm 8$ kV contact discharge)			
	Electrical Safety:	Complies with IEC/CE standards, The unit must be connected to a receptacle with proper grounding		
	<b>Accessories</b>			
	pH glass electrode			
	Temperature probe			
	Electrode holder arm			
	Stirrer			
	Buffer solutions:	(pH 4.01, pH 7.00, pH 10.01)		
	Electrolyte x 20 ml, Standard solution			
	Power adapter			
	Software and USB cable			
	Conductivity cell			
	Membrane caps 02			
	<b>Power Supply:</b>	Single-phase 220/240V, 50-60 Hz		
	<b>Data Out put</b>	PC directly via USB		
	<b>Memory Function</b>	Recalls up to 150 points		
	Stirring should be available			
	<b>Compliance and Documentation</b>			
	Calibration certificate			
	User manual			
	<b>Warranty:</b>	Minimum 1 Year		
	<b>Additional Information:</b>			
	Make:	Please specify		
	Model:	Please specify		
	Country of origin/Manufacture	Please specify		
	A manufacturer Authorization Letter should be provided			
	Brand name, Product Catalog, Catalog page and Model no should be available. Requested specification should be			

		stated in the Catalog page and product web site.				
		If you fail to fulfill the requested specification by the university [equipment supply with wrong specification] the equipment would be rejected after goods delivery to the university.				
43	Rotary Rheometer	Overview:	Rotary Rheometer with measurements modes: Controlled stress (CS), Controlled strain (CR), Oscillatory shear (SAOS/LAOS), Creep and recovery, Flow and viscoelastic measurements.	1		
		Type:	Benchtop rotational rheometer with oscillatory capability			
		Measured Properties:	Storage modulus (G') – elasticity Loss modulus (G'') – viscosity Complex viscosity ( $\eta$ )* Yield stress ( $\sigma_y$ ) Phase angle ( $\delta$ )			
		Strain Range:	0.01% - 100% or higher			
		Frequency Range:	0.01 – 100 Hz			
		Torque:	Minimum torque: ~200 $\mu\text{N}\cdot\text{m}$ or lower Maximum torque: ~125 $\text{mN}\cdot\text{m}$			
		Angular Velocity (Shear Rate Capability):	Angular velocity range: ~10 <sup>-8</sup> to 157 $\text{rad s}^{-1}$ Suitable for both very low shear (gel/solid-like materials) and high shear flow studies Custom fixtures for gels, pastes, and soft solids			
		Strain/Displacement Resolution	Angular resolution: < 10 nanoradians Normal Force Range: 0-10 N (to measure sample compression and normal stress effects) Normal force resolution: ~0.004 N			
		Temperature Control	Peltier plate system Range :0 -100 °C Accurate temperature stability : $\pm 0.1$ °C			
		Geometries & Accessories:	Preferred Geometries for Soft Gels :Vane geometry, Cone-plate geometry, optional geometries-Parallel plate			
		Weight:	~45kg			
Dimensions (W x H x D):	442 mm x 725 mm x 596 mm or similar					

		Sample Application:	Measurement of viscoelastic properties (storage modulus $G'$ , loss modulus $G''$ ), yield stress, and viscosity of protein starch gels and other soft food systems- Liquids, gels, pastes, dispersions, emulsions, polymer melts, starch gels, and food printing inks.		
		User Interface & Controls:	Digital Display: Rotation speed, bath temperature, runtime Control Panel (Optional): (PID microprocessor, Tactile buttons/keypad) Preset Programs: (Optional memory for common solvent profiles) Language: English (menu text)		
		Data Acquisition & Software:	Software :Required relevant software Functions :Real-time $G'$ , $G''$ , and complex viscosity plots 01 6,000,000 6,000,000 SAOS and LAOS amplitude/frequency sweeps Flow curve analysis, yield stress determination Lissajous curve analysis for nonlinear viscoelasticity Export in CSV, Excel, and graphical formats		
		Safety Features:	Over-temperature protection  Dry-run protection (water bath) Emergency stop switch  Lockable support stand		
		Electrical Safety:	Complies with IEC/CE standards, The unit must be connected to a receptacle with proper grounding		
		Stability	Anti-vibration feet for sensitive low-torque measurements		
		Accessories (Standard) :	:Need all other required accessories for standard operation		
		Power Supply	Single-phase 220/240V, 50-60 Hz		
		Environmental Conditions	Operating Temperature :(10°C to 40°C) Relative Humidity: ( $\leq$ 80% non-condensing)		
		Compliance and Documentation	E / ISO / RoHS compliant: Optional User manual		
		Warranty:	(2-3 Years)		

<b>44</b>	<b>Vacuum Pump</b>	Overview:	The vacuum pump shall be a Oil free, Chemical resistant, diaphragm vacuum pump compatible with water & organic solvents and with PTFE wetted materials.	1		
		Pump Type:	Power: 90 W - 100W  Pumping Speed: 30 - 35 L/min			
		Ultimate Vacuum (Pressure)	Ultimate vacuum: (Max. vacuum - 95 -100mbar)			
		Mechanical & Structural Characteristics :	diaphragm vacuum pump for laboratory filtration of aqueous and organic solvents mixtures using filter papers			
		Safety & Protection	Thermal overload protection Noise: ≤55 db Electrical protection: Complies with IEC/CE standards, The unit must be connected to a receptacle with proper grounding			
		Power Supply:	(Single-phase 220/240V, 50-60 Hz)			
		Environmental Conditions	Operating Temperature: (10°C to 40°C)			
		Accessories Compliance and Documentation	IEC  ISO 9001  CE Marking (EU)  RoHS User manual			
		Warranty:	1 Years			
<b>45</b>	<b>Sonicator Bath/ Ultra Sonicator Cleaner No 3</b>	Ultrasonic System:	Ultrasonic Frequency: (35-40 kHz) Ultrasonic Power Output: (100–300 W, adjustable) Operation Mode/Power Control: pulse mode, adjustable intensity Uniformity: (Even ultrasonic distribution throughout bath	2		
		Bath and Tank:	Tank Capacity: 5 L  Tank Material: Stainless steel (SUS 304 or equivalent), corrosion resistant			

			Drain Valve: Needed		
			Lid: (Removable stainless steel)		
		Housing Material:	(Powder-coated steel)		
		Temperature Control	Heating Function: (built-in heater) Temperature Range: (Ambient +5°C to 60)		
			Temperature Accuracy: ( $\pm 2^{\circ}\text{C}$ ) Temperature Display: (Digital LED display)		
		Timer and Controls	Timer Range: 1–99 minutes		
			Control Panel: (Digital)		
			Display: (Time, temperature, and power status)		
		Safety Features:	Overload and short-circuit protection		
			Overheating protection		
			Low-noise operation : $\leq 60$ dB		
			Insulated housing		
			Electrical Safety: Complies with IEC/CE standards, The unit must be		
			connected to a receptacle with proper grounding		
		Accessories	Sample racks and baskets: Removable mesh basket (Stainless Steel) for beakers, Stainless Steel handle, heat resistant Test tube holders		
			Sound-reducing enclosure		
		Power Supply:	Single-phase 220/240V, 50-60 Hz		
		Environmental Conditions	Operating Temperature: ( $10^{\circ}\text{C}$ to $40^{\circ}\text{C}$ )		
			Relative Humidity: ( $\leq 80\%$ non-condensing)		
		Installation:	(Bench-top)		

		Compliance and Documentation	CE / ISO / RoHS compliant			
			User manual and calibration certificate			
		Warranty:	1 Year			
		Additional Information:	Make: Please specify			
			Model: Please specify			
			Country of origin/Manufacture: Please specify			
46	Agitator Mixer	Performance Requirements:	Speed Range: 100 – 1200 RPM (variable)	1		
			Speed Accuracy: ( $\pm 1$ rpm or $\pm 1\%$ )			
			Capacity: 01 Litre			
			Motor Power: 150 W – 250 W			
		Timer	Range: (1 min – 99 min/ continuous mode)			
			Countdown with automatic stop			
			Audible alarm at cycle completion			
		Impeller Type:	Paddle, Optionally anchor/turbine			
		Application:	Mixing of liquids, slurries, or semi-solid materials			
		Construction & Materials:	Shaft Material: Food-grade stainless steel (304/316)			
			Motor: 150 W – 250 W (maintenance-free)			
			Feet: (Anti-slip rubber feet or leveling feet)			
			Type: Bench-top vertical agitator mixer			
		Control System:	Speed control : Digital speed			

			Over-speed detection and correction: Cleanably: Easy disassemble, sanitary design Display : LED, Digital display for speed and time		
		Safety Features :	Overload protection Motor overheat protection Anti-slip platform surface Noise Level: ≤ 60 dB Balanced drive mechanism for low vibration Stable operation at maximum rated load		
		Electrical Protection:	Overload Short circuit Electrical Safety: The unit must be connected to a receptacle with proper grounding		
		Power Supply:	Single-phase 220/240V, 50-60 Hz		
		Environmental Conditions:	Operating Temperature: (10°C to 40°C) Relative Humidity: (≤80% non-condensing)		
		Compliance and Documentation	RoHS Compliant: IEC/CE: ISO 9001:		

			User manual			
		Warranty:	Minimum 3 years			
		Additional Information				
47	Colorimeter	Measurement area :	Ø 50 mm	1		
		Measurement geometry :	0° viewing angle, diffuse illumination			
		Light source	Pulsed xenon lamp			
		Detector	Silicon photocell			
		Color systems				
		Color difference formula :	$\Delta E^*ab$ and user-defined formulas			
		Inter-instrument agreement :	$\Delta E^*ab \leq 0.8$			
			$L^*a^*b^*$ , $L^*C^*h$ , XYZ, Yxy and others			
		Repeatability	$\Delta E^*ab \leq 0.07$			
		Measurement time	Approx. 1 second			
		Calibration	User calibration function			
		Judgment function	PASS / WARN / FAIL			
		Data storage				
		measuring head only :	Up to 1,000 measurements			
		with DP-400 :	Up to 2,000 measurements			
		Target color storage	Up to 100 target colors			
		PC connection	Detachable			
		Data processor	Direct connection supported with optional software			
		Printer	DP-400			
		Display	Large LCD with backlight			
		Display languages :	6 languages (including English, Japanese)			
		Graph display :	Color-difference graph (with DP-400)			
		Text entry	Cellular phone-type text input			
		Power supply	Rechargeable battery / AC adapter			
Accessories	Accessories for powder, paste, opaque liquids					
	Standard accessories included					
Data compatibility	Compatible with CR-300 / CR-310 series					

	Typical applications	Large, uneven, textured surfaces; powders, pastes, food, textiles			
	Warranty	Minimum 1 year from date of supply			
	Additional Information				
	User manual :	To be supplied (hard copy or soft copy)			
	Installation & commissioning:	Needed			
	Training :	Basic operational training is needed			
	Spare parts availability :	Minimum 5 years			
	Compliance standards :	ISO / CIE compliant			
	After sale service	Authorized service support is needed			
	Make:	Please specify			
	Model:	Please specify			
	Country of origin/Manufacture:	Please specify			

## Section VI. Conditions of Contract (CC)

This Bidding Document is based on the standard bidding document for National Competitive Bidding (NPA/Goods/SBD 01). Section VI will not be provided with this bidding document. Bidders are instructed to refer the Section VI of the standard bidding document (NPA/Goods/SBD 01). The document is available at the website of NPA, [www.npa.gov.lk](http://www.npa.gov.lk)

## Section VII. Contract Data

The following Contract Data shall supplement and / or amend the Conditions of Contract (CC). Whenever there is a conflict, the provisions herein shall prevail over those in the CC.

<b>CC 1.1(i)</b>	The Purchaser is: Uva Wellassa University
<b>CC 1.1 (m)</b>	The Project Site(s)/Final Destination(s) is/are: Uva Wellassa University, Passara Road, Badulla
<b>CC 8.1</b>	For notices, the Purchaser's address shall be:  Deputy Bursar Uva Wellassa University, Passara Road, Badulla. 055-2226475/ 055-2226633
<b>CC 11</b>	Goods shall be supplies in compliance with the quality and the specification given.
<b>CC 15.1</b>	CC 15.1—The method and conditions of payment to be made to the Supplier under this Contract shall be as follows:  For Goods offered within Sri Lanka Payment shall be made in Sri Lankan Rupees within thirty (30) days of presentation of claim supported by a certificate from the Purchaser declaring that the Goods have been delivered and that all other contracted Services have been performed. <ul style="list-style-type: none"> <li>a) No Advance payment applicable for this contract</li> <li>b) Up to a maximum of ninety (90) percentage of the Contract Price, shall be paid on receipt of the Goods and confirm by the evaluation committee.</li> <li>c) Ten (10) percentage of the Contract price will be hold as Retention for a period of 12 months from the date of commissioning of equipment</li> <li>d) The Retention shall be paid on completion of Twelve (12) months. During that Period supplier shall correct all defects and confirmed by the purchase or his agent.</li> </ul>
<b>CC 17.1</b>	A Performance Security – 10% Performance security may be in any of the following way <ul style="list-style-type: none"> <li>(a) A Bank guarantee issued by a reputed bank operated in Sri Lanka.</li> <li>(b) Cash deposit at the Shroff Counter of the University</li> </ul>
<b>CC 26.1</b>	The liquidated damage (Late Delivery) shall be: If the supplier fails to deliver any or all of the goods by the date(s) specified above the purchaser may deduct from the payment a sum equivalent to 0.05% of the delivered price of the delayed good, for each day of delay.
<b>CC 26.1</b>	The maximum amount of liquidated damages shall be: 10 % from the contract sum.
<b>CC 27.3</b>	The warranty shall remain valid for a period of time specified with the specifications.
<b>CC 27.6</b>	The supplier shall remedy the defects within 3 Months from the date of information by the purchaser.

## **Section VIII. Contract Forms**

### **Table of Forms**

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3. Guarantee for Advance Payment.....	104

## Contract Agreement

THIS CONTRACT AGREEMENT is made

the [ insert: number] day of [ insert: month], [ insert: year].

BETWEEN

(1) [Insert complete name of Purchaser], a [insert description of type of legal entity, for example, an agency of the Ministry of..... or corporation and having its principal place of business at [insert address of Purchaser] (hereinafter called “the Purchaser”), and

(2) [Insert name of Supplier], a corporation incorporated under the laws of [insert: country of Supplier] and having its principal place of business at [insert: address of Supplier] (hereinafter called “the Supplier”).

WHEREAS the Purchaser invited bids for certain Goods and ancillary services, viz., [insert brief description of Goods and Services] and has accepted a Bid by the Supplier for the supply of those Goods and Services in the sum of [insert Contract Price in words and figures, expressed in the Contract currency (ies)] (hereinafter called “the Contract Price”).

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract referred to.

2. The following documents shall constitute the Contract between the Purchaser and the Supplier, and each shall be read and construed as an integral part of the Contract:

- (a) This Contract Agreement
- (b) Contract Data
- (c) Conditions of Contract
- (d) Technical Requirements (including Schedule of Requirements and Technical Specifications)
- (e) The Supplier’s Bid and original Price Schedules
- (f) The Purchaser’s Notification of Award
- (g) [Add here any other document(s)]

3. This Contract shall prevail over all other Contract documents. In the event of any discrepancy or inconsistency within the Contract documents, then the documents shall prevail in the order listed above.

4. In consideration of the payments to be made by the Purchaser to the Supplier as hereinafter mentioned, the Supplier hereby covenants with the Purchaser to provide the Goods and Services and to remedy defects therein in conformity in all respects with the provisions of the Contract.

5. The Purchaser hereby covenants to pay the Supplier in consideration of the provision of the Goods and Services and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

IN WITNESS whereof the parties hereto have caused this Agreement to be executed in accordance with the laws of Democratic Socialist Republic of Sri Lanka on the day, month and year indicated above.

For and on behalf of the Purchaser

Signed: [insert signature]

in the capacity of [ insert title or other appropriate designation ]

in the presence of [insert identification of official witness]

For and on behalf of the Supplier

Signed: [insert signature of authorized representative(s) of the Supplier]

in the capacity of [insert title or other appropriate designation]

in the presence of [ insert identification of official witness]

## Performance Security

[The issuing agency, as requested by the successful Bidder, shall fill in this form in accordance with the instructions indicated] ----- [Issuing Agency's Name, and Address of Issuing Branch or Office] .....

Beneficiary: Vice Chancellor, Uva Wellassa University, Passara Road, Badulla

Date: .....-.....--

Performance Bid Guarantee No.: .....

We have been informed that ----- [Name of Supplier] (hereinafter called "the Supplier") has entered into Contract No. ----- [Reference number of the contract] dated ----- with you, for the ----- Supply of ----- [name of contract and brief description] (hereinafter called "the Contract").

Furthermore, we understand that, according to the conditions of the Contract, a performance guarantee is required. At the request of the Supplier, we ----- [name of Agency] hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of -----

-----  
[Amount in figures] (-----) [amount in words], such sum being payable in the types and proportions of currencies in which the Contract Price is payable, upon receipt by us of your first demand in writing accompanied by a written statement stating that the Contractor is in breach of its obligation(s) under the Contract, without your needing to prove or to show grounds for your demand or the sum specified therein. This guarantee shall expire, no later than the .... day of ....., 20.. [Insert date, 28 days beyond the scheduled completion date including the warranty period] and any demand for payment under it must be received by us at this office on or before that date.

[Signature(s)]

## **Guarantee for Advance Payment**

[The issuing agency, as requested by the successful Bidder, shall fill in this form in accordance with the instructions indicated.]

Date: [insert date (as day, month, and year) of Bid Submission]

ICB No. and title: [insert number and title of bidding process]

[issuing agency's letterhead]

Beneficiary: Vice Chancellor, Uva Wellassa University, Passara Road, Badulla

ADVANCE PAYMENT GUARANTEE No.: [insert Advance Payment Guarantee no.]

We, [insert legal name and address of issuing agency], have been informed that [insert complete name and address of Supplier] (hereinafter called "the Supplier") has entered into Contract No. [insert number] dated [insert date of Agreement] with you, for the supply of [insert types of Goods to be delivered] (hereinafter called "the Contract").

Furthermore, we understand that, according to the conditions of the Contract, an advance is to be made against an advance payment guarantee.

At the request of the Supplier, we hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of [insert amount(s) in figures and words] upon receipt by us of your first demand in writing declaring that the Supplier is in breach of its obligation under the Contract because the Supplier used the advance payment for purposes other than toward delivery of the Goods.

It is a condition for any claim and payment under this Guarantee to be made that the advance payment referred to above must have been received by the Supplier on its account [insert number and domicile of the account]

This Guarantee shall remain valid and in full effect from the date of the advance payment received by the Supplier under the Contract until [insert date].

**[Signature(s) of authorized representative(s) of the issuing agency]**

### Check List

No	Required Specification	Bidder's Offer			
		Conformity		Page No	Remark
		Yes	No		
1	<b>Company Profile</b>				
2	<b>Business Registration</b>				
3	<b>VAT Registration</b>				
4	<b>List of Clients</b>				
5	<b>Past Three Year Experience in the industry</b>				
6	<b>Manufacturer Authorization</b>				
7	<b>Public Contract Act</b>				
8	<b>Bid Security</b>				
9	<b>Forms of Bids</b>				
10	<b>Price Schedule</b>				
11	<b>Bid Document Fee (Non – Refundable)</b>				
12	<b>Financial Statement</b>				
<b>Status</b>					

“Bidders must fill above Check List”

Duly authorized for signed on behalf of .....  
(Name of the Bidder)

Name : .....

Signature : .....

Designation : .....