



**Bio Science Research Centre
Sardarkrushinagar Dantiwada Agricultural University
Sardarkrushinagar – 385 506.**

**TENDER NOTICE
NO: SDAU-BSRC-PUR 1.1 to 1.2/2020-21**

Online tenders through e-procurement are invited from the manufacturers/ authorized dealers for supply of **Laboratory Instrument(s)/Equipment(s) and experienced parties for establishing hardening Unit for plant tissue culture** at BSRC, SDAU, Sardarkrushinagar. For more details visit the website: <https://au.nprocure.com>, www.nprocure.com, www.sdau.edu.in and www.statetenders.com. The last date for online submission of tenders along with relevant fees and documents is **30-01-2021**.

Date :11-01-2021

Head of Unit

**BIO SCIENCE RESEARCH CENTRE
S. D. AGRICULTURAL UNIVERSITY
SARDARKRUSHINAGAR – 385-506
Tender Notice SDAU-BSRC-PUR-1.1 to 1.2/2020-21**

Online Tenders, as per the schedule given below, are invited from reputed manufacturers / authorised dealers/ distributors for supply of Laboratory Instrument(s)/ Equipment(s) and Establishing of Hardening Unit for plant tissue culture at BSRC, SDAU, Sardarkrushinagar.

Separate Tender forms must be submitted for each items advertised in the tenders (from 1.1 to 1.2). A set of all required documents should be submitted separately for each items. Separate Tender fee and separate EMD should be furnished for each items advertised in the tenders (from 1.1 to 1.2) as per Table 1, otherwise the tender will be disqualified.

Tender Notice SDAU-BSRC-PUR-1.1 to 1.2/2020-21 available on the website <https://au.nprocure.com> or www.nprocure.com may be referred for the Tender Form, detailed terms & conditions etc.

1.	Last date for downloading and online submission of the tender documents	Till 30.01.2021 up to 17:00hrs
2.	Last date for Physical submission of Tender Fee, EMD along with relevant documents in Separate cover in the office of the Chairman Purchase Committee & Head of Unit Bio Science Research Centre, S. D. Agricultural University, Sardarkrushinagar, Dist.- Banaskantha, Gujarat-385-506 by Registered Post / Speed Post/Courier only.	Till 04.02.2021 up to 17:00hrs
3.	Opening of Primary Bid (Tender Form Fee and EMD Cover) (Physically Received)	05.02.2021 or thereafter
4.	Opening of Technical Bid (online)	06.02.2021 or thereafter
5.	Opening of Commercial Bid (online)	09.02.2021 or thereafter

Date: 11/01/2021

**Chairman Purchase Committee
&
Head of Unit
Bio Science Research Center
S. D. Agricultural University
Sardarkrushinagar**

Tenders for Laboratory Instrument(s)/Equipment(s) and Establishing of Hardening Unit for plant tissue culture from **1.1 to 1.2**

Company/Firm/Dealers/Distributors has to deposit separate tender fee and separate EMD (in favor of “SDAU Fund Account” drawn on SBI, payable at Dantiwada – 2760.) as mentioned in Table No. 1 for each items for which the tender is to be submitted.

**BIO SCIENCE RESEARCH CENTRE
SARDARKRUSHINAGAR DANTIWADA AGRICULTURAL UNIVERSITY
SARDARKRUSHINAGAR 385-506**

Tender Notice No.SDAU-BSRC-PUR-1.1 to 1.2/2020-2021

Date: 11-01-2021

TENDER BRIEF

Online Tenders are invited from reputed manufacturers/authorised dealers/distributors **for supply of Laboratory /Equipment(s) and Establishing of Hardening Unit for plant tissue culture (Turnkey project)** as mentioned specifically in the tender details.

INSTRUCTION TO BIDDERS FOR ONLINE TENDER PARTICIPATION

1. The tender documents can be downloaded from the website <https://au.nprocure.com>
2. The bids should be submitted online visiting website <https://au.nprocure.com>
3. The bids should be digitally signed. The details regarding digital signature certificate and related training involved will be available on the below mentioned address:

(n)Code Solutions

(A division of GNFC)

301, GNFC Infotower, Bodakdev,

Ahmadabad- 380 054 (India)

Tel : +91 79 26857316/17/18

Fax: +91 79 26857321.

www.ncodesolutions.com

4. The Bidder can get a copy of instructions for online participation from the website <https://au.nprocure.com>
5. The Bidder should get registration, if required on the website through the link “New Supplier” provided at the home page. The registration on the site should not be taken as registration or empanelment or any other form of registration with the tendering authority.
6. The application for training and issue of digital signature certificates should be made at least 72 hours in advance to the due date and time of tender submission.
7. All the queries regarding use of digital signature certificate should be addressed to personnel in (n) Code Solutions, Ahmadabad.
8. All the queries regarding tender specifications and any other clauses included in tender document should be addressed to personnel in tendering office at the address provided below:

Contact Details:

Chairman Purchase Committee & Head of Unit

Bio Science Research Centre,

Sardarkrushinagar Dantiwada Agricultural University,

Sardarkrushinagar, Distt- Banaskantha Gujarat – 385 506.

Mob. 94280 23027

Telefax: 02748-278433

email: bsrc@sdau.edu.in

GENERAL CONDITIONS OTHER THAN INVITATION TO TENDER AND INSTRUCTIONS TO TENDERER (ITIT)

1. Nature of requirements: Laboratory Instrument(s)/Equipment(s) and Establishing of Hardening Unit for plant tissue culture (Turnkey project)

Note:- Separate Tender forms must be submitted for each Laboratory Instrument(s)/Equipment(s) and “Establishing of Hardening Unit for plant tissue culture (Turnkey project)” advertised in the tenders (1.1 to 1.2). Attach product catalogue along with all documents separately for each items, otherwise tender will be disqualified. Bidder interested for quoting more than one Laboratory Instrument(s)/Equipment(s) should fill in separate tender forms and enclose the required documents and required tender fee and EMD separately, otherwise tender will be disqualified.

2. The Sardarkrushinagar Dantiwada Agricultural University (SDAU) shall in first instance prefer to deal with manufacturer. However, the manufacturer may affect delivery through its authorized dealer/ distributor mentioned in tender form, if desired. The authorized dealer must be Indian (proof for the same must be enclosed here with) for after sale services as well as other correspondences pertaining to it.

3. Authorized dealers/ distributors can quote their rates provided they attach a valid longevity certificate of authorized dealership along with declaration of after sales services liability issued from the Manufacturer/Principal Company.

4. PRIMARY BID (TENDER FEE AND EMD COVER)

Separate cover should contain Tender Fee and Earnest Money Deposit (EMD) as mentioned below. It may please be noted that Tender form without Tender fee or EMD will not be considered.

a. Tender fee (Non Refundable): Tender fee of respective item (mentioned in Table No 1) should be paid item wise separately (1.1 to 1.2) as mentioned in the tender document in the form of Demand Draft (DD) only in favor of “SDAU Fund Account” payable at SBI Dantiwada -2760.

b. Earnest Money deposit(EMD): EMD amount should be paid item-wise separately (1.1 to 1.2) as mentioned in the tender document in the form of Demand Draft (DD) only in favor of “SDAU Fund Account” payable at SBI Dantiwada -2760.

c. Uploading on-line as well as physical submission of original tender fee and EMD is mandatory.

Table : 1 Tender fee and EMD Details

Sr. No.	Name of Laboratory Instruments/ Equipments	Quantity	Tender fee	EMD in INR
1.1	Auto-multi probes sample preparation workstation with accessories	01	1500	30,000
1.2	Supplying, Installation and Commissioning of Hardening Unit System for Tissue Culture at Bio Science Research Centre, SDAU, Sardarkrushinagar	01	15000	9,75,000

Refund of Earnest Money Deposit: EMD will be refunded to unsuccessful bidder after the deal is finalized. However, same will be refunded to the successful bidder only after submitting required security deposit for respective items.

Forfeiture of Earnest Money: The earnest money will be forfeited in the following cases:

- When bidder withdraws or modifies the offer after opening of tender but before acceptance of tender.
- When bidder does not execute the agreement if any, prescribed within the specified time.

5. SECURITY DEPOSIT: The successful bidder has to deposit 5% of invoice value in the form of Bank Demand Draft in favor of “SDAU Fund Account” drawn on SBI, payable at Dantiwada-2760, prior to issue of purchase order to the office placing the order. This money will remain deposited in the University as security deposit till warranty period is over.

Refund of Security Deposit: The amount of security deposit will be refunded after the completion of warranty / guarantee period, after writing a letter to the Office where the instrument is installed.

Forfeiture of Security Deposit: The security deposit will be forfeited if,

1. Successful bidder fails to supply the items within the delivery period.
2. Supplier fails to comply specifications of instruments, installation/demonstration of the instruments.
3. Supplier is not providing satisfactory, after sale services and support.

6. TECHNICAL BID

The Technical Bid should contain copy of **Tender Form (TF)** including **ITIT** along with self attested copies of prevailing tax structure, Registration Certificate, latest company printed catalogue and other relevant documents as per check list (except Commercial Bid document). **Please note that scanned copy of any document uploaded by the Bidder must tally with physical submission of original. Further;**

- (a) The envelope should be marked as "**Technical Supporting Documents (Technical Bid)**". **It should be noted that technical bid is to be submitted online as well as physically.**
- (b) If the bidder fails to submit the supporting documents physically within time limit, the bidder will be disqualified.
- (c) The bids should be submitted on or before the time stipulated in Tender notice at the website <https://au.nprocure.com>
- (d) Technical bid should be separate for each tender item. All documents along with General conditions and ITIT must be filled separately for each tender item advertized in the tenders (1.1 to 1.2) otherwise tender will be disqualified.
- (e) Technical bid should be separate for each tender item contain technical bid sheet with all items supply in list format having 1) Sr. Number, 2) Part/ catalogue number 3) Part/model name and its details and 4) quantity in column format as quotation without price on letter head of bidder, otherwise tender will be disqualified.

7. COMMERCIAL BID

- (a) In the commercial Bid, price should be quoted in INR inclusive all taxes. Prices details should be filled as per details given in commercial bid form.
- (b) Sardarkrushinagar Dantiwada Agricultural University is entitled for exemption of Customs Duty as per Government Notification No.51/96-Customs dated 23rd July 1996, Notification No. 28/2003- Customs dated 01.03.2003, Notification No. 43/2017-Customs dated 30.06.2017 & Notification No. 47/2017- Integrated Tax (Rate) dated 14.11.2017, Notification No.10/2018- Integrated Tax(Rate) dated 25.01.2018 and Notification No. 45/2017- Central Tax (Rate) dated 14.11.2017, Notification No.45/2017- Union Territory Tax (Rate) dated 14.11.2017 & Notification No. 9/2018- Central Tax (Rate) dated 25.01.2018, Notification No. 9/2018- Union Territory Tax (Rate) dated 25.01.2018, as amended from time to time for research purpose only. If applicable, certificate will be provided by the University to the successful bidder on demand.
- (c) F.O.R destination delivery should be **inclusive of all the charges (eg. insurance, transportation, packaging etc.)**. However, any tax prevailing as per government rules & regulations should be mentioned separately on the tender item(s) quoted. **In case the bidder fails to provide such separate details in its bids, offers will be considered as inclusive of all taxes.**
- (d) The Commercial Bid should be submitted on or before the time stipulated in tender notice **online** only on the website <https://au.nprocure.com>
- (e) The change, addition, alteration in the tender rates on omission / misunderstanding / mistake or any other reasons would not be permitted.
- (f) The total cost must be inclusive of all necessary accessories, if not mentioned separately.

8. VALIDITY OF TENDER

The rate quoted shall initially be valid up to **31 March, 2021**. However, it may be extended by the University.

9. COMPREHENSIVE WARRANTY/GUARANTEE inclusive spares and labor for the laboratory Instrument(s)/Equipment(s) offered should invariably be stated in the tender, failing which standard clause to this effect adopted by SDAU i.e. minimum for 24 months for Tender Item No. 1.1 and 36 months for Tender Item No.1.2 shall apply. Further,

- (a) The Bidder shall guarantee regular and timely supply of all the spare parts required for the normal working of the laboratory Instrument(s)/Equipment(s) tendered for, a period of Warranty/Guarantee.
- (b) Bidder shall further guarantee that after completion of Warranty/Guarantee (as per tender conditions). Service & Support (for supply of required parts and consumable) will be provided up to 7 years. Bidder shall also guarantee that the rate of such spare parts will not be exceeding those you might be charging to the Director General of Supplies and Disposals / GeM, New Delhi or any other Government department.

10. DELIVERY PERIOD

The maximum delivery period will be six weeks from the date of order in case of ordinary purchases and two weeks in case of the emergency/urgent purchase.

11. PAYMENT

No advance payment will be made. The final payment shall be made by respective offices after satisfactory receipt of Laboratory Instrument(s)/Equipment(s)/Establishing hardening unit and its installation and training of staff, wherever applicable.

12. AUTHORISATION

If the Bidder is not a manufacturer, he should submit a letter from the manufacturer authorizing him to submit quotation on his behalf or attested copy of authorized dealership. Authority letter whenever submitted should be on letter head of the manufacturer with necessary seal and signature and must be inform the validity period for the same. Failing which the tender will be rejected.

The manufacturer should preferably have track record of supply/establishment of facility (controlled environment) for at least last three years to any Govt. Department / Educational / Agricultural University in the country (Attach relevant list or certificate pertaining to client satisfaction in this regard).

13. TERMS OF SUPPLY

- (a) The packing and the labels of all the items, to be supplied under the order, should be well labeled. If the items are packed in packets which are then placed or repacked within a box/carton/bottle/foil, these details shall be printed/ marked on both the internal/external packs and labels.
- (b) In the event of breakages or loss of stores during transit against requisition order the said quantity will have to be replaced by the A.T. holder. The purchaser will not pay separately for transit insurance and the supplier will be responsible for the intact supply as soon as possible but not later than 15 days from the date of arrival of stores at destinations.

14. Training: Training shall be provided free of cost to the deputed persons of this university by the vendor for each instrument quoted at vendor's application centre and also at University where the instrument is installed , if so desired by the University.

15. The conditional offer/s from bidders is/ are liable to be rejected.

16. No tender will be accepted after prescribed closing time for submission of the same. The delay will not be condoned for any reason whatsoever including postal / transit delay. However, if the last date of submission of tenders is declared as a holiday by the Government, the last date of submission of tenders will be considered as extended to the next working day.

17. The Bidder should read this document and the instructions / terms / conditions therein very carefully. Any Bidder who does not conform to the instruction / terms / conditions herein is liable to be rejected without any reference.

18. No modification should be done by the Bidder in the name of item, and in the specifications grade / quality / packing of the item given in the enquiry document.

19. If Bidder's quoted prices for any other institution/university/ government organization is found less than our university/institution or discount to any other institution/ university/ government organization found more than our university/ institution, the offer will be cancelled and the firm will be put in blacklist.

20. The Accepted Tender (A.T.) holder should supply the equipments in fresh and sound condition meeting with the specification and packing approved. Refurbished or second-hand equipment will not be allowed under any circumstances. If such case is noticed, then the laboratory Instrument(s)/Equipment(s) will be rejected out rightly and penal action will be taken against the A.T. holder.

21. All supply orders issued by the indenting office on or before the last date of the expiry of the validity of the tender will have to be accepted by the A.T. holder and the delivery for all such orders will have to be effected as per the schedule specified in the order.

22. The software's, operating systems (OS) and user manual for laboratory Instrument(s)/Equipment(s) and their peripherals should be installed and licensed copy should be provided in the form of DVD & Pan drive/ flash drive with necessary license key.

23. In case of any disputes, the decision of the SDAU in this regard will be final and binding. For all legal matter court jurisdiction shall be “**Palanpur**”, Gujarat.
24. All provisions as mentioned in the Gujarat State Purchase Policy – 2016 will be abided to the vendors.

I/We.....(Name of the Bidder/Proprietor/Partner /Director) hereby undertake to supply laboratory Instrument(s)/Equipment(s)conforming to the Tender Enquiry specification (**1.1 to 1.2**) and abide by all terms and conditions of the tender enquiry as well as invitation to tender and instructions to bidders.

Place :
Date :

Signature:
Name:
Designation:
Stamp of the firm:

Invitation to Tender and Instructions to Tenderer (ITIT)

1. Bidders or their authorize representative are at liberty to remain present at the opening time of the tender.
2. **Separate Tender forms must be submitted for each Laboratory Instrument(s)/ Equipment(s) and Establishing of Hardening Unit for plant tissue culture advertized in the tenders (from 1.1 to 1.2) also for each brand/model quoted.** A set of all required documents should be submitted separately for each **Laboratory Instrument(s)/ Equipment(s)**. Separate Tender fee and separate EMD should be furnished for each Laboratory Instrument(s)/Equipment(s) advertized in the tenders (from **1.1 to 1.2**), as per instructions given in Table No. 1, otherwise the tender will be disqualified.
3. Bidder should give specification compliance statement point wise showing / highlighting items part no., serial no. as quoted in their quotation for comprehensive technical comparison. Proof of compliance should be mentioned point wise in the catalogue. Failing in compliance and proof of compliance may cause cancellation of the bid without any further notice.
4. Incorrect / fraudulent information submission may lead to disqualification / debar. Please ensure that the data be furnished correctly.
5. (a) The Bidder may quote rate for F.O.R./Free Delivery to the indenting office of SDAU. The SDAU has its Research Stations spread over North Gujarat and Kutch. The bidder should state the earliest and clear delivery period. The bidder has to confirm receipt of supply order and acceptance thereof immediately. In absence of this no claim shall be considered.
(b) When the analysis or testing of the supplied laboratory Instrument(s)/Equipment(s) has to be undertaken in Laboratories /Test house inside/outside Gujarat State, all kind of expenditure including inspection charge will have to be paid by the bidder.
6. If the demurrage charges occur due to delay in sending the document/air cargo receipt, the amount of the demurrage will be borne by the vendor / supplier. No charges other than customs duty shall be affected by the change in the F.O.R. price. This clause shall remain in operation only up to the date of shipment corresponding to the delivery period specified in the schedule to the agreed terms and not withstanding any extension of time, if any, unless it proves to the satisfaction of the SDAU that the delay in shipment was due to the causes entirely beyond the control of the foreign principal / manufacturer. The decision of the SDAU in this regard shall be final and binding.
7. (a) Ex-stock offers of those on Bidder's own import license will be preferred. It will be Bidder's responsibility to inform this office within the validity period of the tender in the event of the laboratory Instrument(s)/Equipment(s) offered ex-stock being sold elsewhere. Failure to comply with this instruction shall be construed to mean that the laboratory Instrument(s)/Equipment(s) are available ex-stock during the validity period. No cognizance shall be taken of the intimation that the laboratory Instrument(s)/Equipment(s) have been sold out prior to receipt of order if such intimation is received after acceptance of order at the Bidder's end.
(b) Taxes, if leviable and same are being claimed extra should be clearly stated, failing which the rates quoted in the tender will be construed as inclusive of all taxes. Break -up showing the rate and element of taxes should be shown when rates are quoted inclusive of taxes.
(c) Party or their representative may remain present at the time of the opening of Technical Bid.
8. (a) The Bidder should indicate the rates in metric system of weight and measures or in any equivalent weights and measures, thereof showing conversion rates. Non-compliance in this respect will render the tender liable for rejection.
(b) Rates should be quoted per "unit" as specified in the schedule. Non-compliance will render the tender liable for rejection.
(c) The prices should not be negotiable. If needed, parties quoting lowest shall be invited for the negotiations/ clarifications.
9. The SDAU does not pledge himself to accept the lowest or any tender and reserves the right to consider or reject any or all tenders and invite fresh tenders if need arise or to accept the tender in full or part or divide the quantity amongst one or more bidders without assigning any reasons. Further, the SDAU reserves the right of selecting the brand and accepting or otherwise any of the conditions stipulated in the tender.
10. In the event of an order being placed against this tender and if Bidder fail to supply any laboratory Instrument(s)/Equipment(s) in accordance with the terms and conditions of Acceptance of Tender or fail to replace any laboratory Instrument(s)/Equipment(s) rejected within such times as may be stipulated, the SDAU shall be entitled to purchase such laboratory Instrument(s)/Equipment(s), without notice to the Bidder, from any other source and at such price as the university shall in the sole discretion think fit. If such price exceeds the rate set out in the schedule to acceptance of tender, the Bidder shall be responsible to pay the difference of the price at which such laboratory Instrument(s)/Equipment(s) have been purchased by the SDAU, and the price calculated at the rate set out in the schedule.

11. Termination of contract:

If the Bidder fail to deliver the laboratory Instrument(s)/Equipment(s) or any part thereof, within the contract period of delivery or the laboratory Instrument(s)/Equipment(s) are not found in accordance with the prescribed specifications SDAU shall exercise its discretionary power either:

(a) To purchase elsewhere on Bidder's account and at his risk laboratory Instrument(s)/Equipment(s) so undelivered or others of a similar description without canceling the contract in respect of the laboratory Instrument(s)/Equipment(s) not yet due for delivery, or

(b) To cancel the contract:

In the event of action taken under clause (a) above, the Bidder shall be liable for any loss which the SDAU may sustain on that account but he shall not be entitled to any saving on such purchases made against default.

The decision of the SDAU shall be final as regards the vary number of units, accept the quotation fully or partially and shall not be bound to give reasons for rejecting the whole or part of the quotation.

12. Extension of time:

(a) As soon as it is apparent that contract dates cannot be adhered to, an application shall be sent to the ordering office of SDAU along with copy to the Director of Research, SDAU before due date.

(b) Without prejudice to the foregoing rights, if such failure to deliver in proper time as aforesaid shall have arisen from any cause which SDAU may admit as a reasonable ground for an extension of the time (and its decision shall be final) it may allow such additional time as considered justified in the circumstances of the case.

13. In addition to these general conditions, if any special conditions mention in respective tenders shall also be applicable.

14. Non-compliance with any of the above conditions shall construe breach of the same and will render the offer liable for rejection.

15. The Bidders are instructed to specify clearly in their tenders as to in which respect their tender deviate from the tender enquiry. If deviations are not specified in detail, it will be presumed that the tendered offer is exactly to the specifications of the tender enquiry.

16. Bidders are required to show detailed breakup of all taxes prevailing at the time separately with the respective amounts, even if their offers are inclusive of all taxes.

17. Bidders should send descriptive literature (**not rates/ price**) along with other documents for item quoted in the tender notice.

18. Bidders are advised to indicate in their offer against each item, whether the item is imported or indigenous.

19. The SDAU may, if found necessary to do so, consider for extension of tender beyond the original validity period, subject to the original terms and condition provided in advertised Tender and the Bidder shall accept the same unless specially stipulated to the contrary in the tender.

20. In the case, rate accepted on "FOR Destination" the date on which the goods are received at destination shall be considered as the date of delivery.

21. Tender should be submitted on-line showing legibly the **tender number, due date, name of company/brand of the item**.

22. Tender Fee / EMD and other relevant documents of the tenders are to be sent in separate sealed cover to 'The Chairman, E-Tendering Committee & Head of Unit, Bio Science Research Centre, S. D. Agricultural University, Sardarkrushinagar, Dist.-Banaskantha, Gujarat-385506' by the date and time stated in the notice by Registered Post/Speed Post/Courier only. Late receipt will disqualify the tender and the SDAU will not, in any way be responsible in this regard.

23. The technical bid may be opened on 06/02/2021 (tentative) or thereafter for scrutiny followed by commercial bid opening either on the same date or any other next date of completion of technical scrutiny.

24. The tender is liable for rejection if instrument/equipment are not fulfilling as per required specifications.

25. If bidder quotes any special term and condition in the tender which is not found suitable to the authority, those conditions will not be considered.

26. Installation of the laboratory Instrument(s)/Equipment(s)/Trunk project will have to be made **within 6 weeks of supply**.

27. Vendor giving wrong information on specification/documents will be **black listed for a period of 5 years**.

28. All questions, disputes or differences arising under, out of or in connection with the contract shall be subject to the exclusive jurisdiction of the court within the local limits of whose jurisdiction the place situated from which Acceptance of Tender is issued.

Special additional conditions for tender Item number 1.2

Note: Vender must agree with the following conditions for Item number (Turnkey project) 1.2

- 1. This project is turnkey based project only single vender should complete this project by integrating all the items mentioned in item no 1.2.**
- 2. Bidders must have experience (minimum three years) of Installation/Supply of such materials for hardening units/Plant tissue Culture Lab and must produce copy of such order/s in technical bid.**
- 3. All bidders have to submit unit/sub unit/component wise rates /price for each item in protected Excel/ pdf format to be uploaded along with financial bid.**
- 4. Vender should mention make/brand, models quoted items and submit well indexed well bound unit/sub unit/component/equipment/item wise technical documents for each items in technical bid for verification.**
- 5. University may give order by omitting/ adding of unit/sub unit/component of the project.**
- 6. Unit rates of consumables/ fixers etc. quoted by Vender in this tender will be bound to provide all the materials as price quoted up to warranty period, if additional material is required.**
- 7. Bidder can visit the site before offering the tender for taking any measurements and information's.**
- 8. Full and final payment will be made after completion of work as per university guidelines.**
- 9. The total price quoted in single figure (i.e.sum of all items mentioned under A to D2) will only be considered for bid comparison.**
- 10. Optional items may or may not be ordered in this project, unit price submitted can be used as supplementary order if required.**
- 11. Any item/ unit/sub unit/component may be omitted by the university during work if not found suitable or not as per need of the university.**
- 12. Successful bidder should complete project in separate phases which may vary as per project requirements for proper implementation and functioning of project.**
- 13. All the required consumables for making fully functional and operated for one years should be included in the bid.**
- 14. Bidder must offer any other necessary accessories even not mentioned in this bid as an integrated part of this.**
- 15. All the expenses and labor required for transportation, installation, consultancy, all the risk pertaining to commissioning of this project of each and every items included and must be borne by successful bidder. For that he should submit notarized affirmation with technical bid.**

Name of the Firm:

Authorized Signature:

Name:

Designation:

Seal of firm:

TECHNICAL BID SUBMISSION FORM

PART-I (Tender Supporting Documents)

Current Tender Details:

Tender Notice No.:

Type of Tender:

Last Date & Time for submission of Bid:

1) Name of Laboratory Instrument(s)/Equipment(s):

2) Name of **company/brand** :

3) Name of the Manufacturer :

4) Category (Indigenous / Imported) :

5) Required supporting documents :

Sr.No.	Document / Certificate Page No. Of the Tender Document	Remarks	Page no
1	Tender Fee Amount, D. D. No. and Date		
2	E.M.D. Amount, D. D. No. and Date		
3	List of Installations/Users/Customers with address, phone No. and email address.(at least 3 purchase order for quoted item preferable)		
4	Copy of GST registration and Copy of TAN of the Bidder – firm		
5	Copy of Permanent account number (PAN)of the Bidder - firm		
6	C.A. Certificate for the manufacturing showing year wise production sales of the quoted item for the last 3 years.		
7	Manufacturing License/Product Permission/Registration Certificate with C.S.P.O./C.M.S.O./ S.S.I./K.V.I.C./ N.S.I.C./D.G.S.& D.		
8	Letter of Authority of Foreign Principal OR its subsidiary company with copy of agreement (In case of Foreign articles) (MUST BE NOTARIZED)		
9	IEC Certificate for imported items		
19	Partnership deed/Memorandum of article/ Registration of firm etc.		
11	Document of 100% Subsidiary Company and provide Affidavit by Subsidiary Company duly attested by Notary public {if applicable}		
12	Confirmation statement for terms and conditions of payment, delivery period and place.		
13	A.E.R.B. Certificate {if applicable}		
14	I.S.O. Certificate. / QCI / B.I.S. Certificate etc or certification issued from internationally acclaimed agency		
15	Technical specification point wise compliance statement		
16	Original Company Printed Product Catalogue		
17	Copy of valid import license for imported items		
18	Guaranty/Warranty obligation		
19	Manufacturer/Authorization certificate showing validity for the current year		
20	Vendor's Profile / Company details		
21	Affidavit as attached on scanned paper of non judicial stamp of Rs 100/-, duly attested by Notary public		
22	Last two (2) financial years income tax returns of the Bidder Firm		
23	Total Pages of the tender document duly stamped & signed by the Bidder - firm		

Note: 1) All photocopied documents must be attested by gazette officer/ self attested.
2) Photocopy of all the documents must be attached physically and scanned copy be with e-tender.

DECLARATION

It is verified that all the certificates/permissions/documents are currently valid as on date and have not been withdrawn/cancelled by the issuing authority. It is further verified that the certificates are as per the format and it is clearly and distinctly understood by us that the tender is liable to be rejected if on scrutiny any of these certificates is found to be not as per the prescribed format.

We further undertake to produce on demand the original certificate/permission / document for verification at any stage during the processing of the tender.

We solemnly declare that we have attached all the documents mentioned here in above and in the tender. We also understand that non-compliance of any documents will be treated as non respective tender and we will loose our claim to participate in the Tender Enquiry automatically and our tender will be liable to reject.

Name of the Firm:

Authorized Signature:

Name:

Designation:

Seal of firm:

**TECHNICAL BID SUBMISSION FORM
PART-II**

Current Tender Details:

Tender No.:

Type of Tender:

Last Date & Time for submission of Bid:

- 1) Name of Laboratory Instrument(s)/Equipment(s):
- 2) Name of **company/brand** :
- 3) Name of the Manufacturer :
- 4) Category (Indigenous / Imported) :
- 5) (A) Basic facilities/infrastructure such as power supply, installation and commissioning of equipment required mentioned as hereunder:
(B) Details of after sales services station.

1	Address of nearest Manufacturer's Service Centre.	
2	Name of Service Engineer (With Office, Residence Phone/ Cell No. and Email address.)	
3	Address of nearest depot for parts and other Consumable stores (With Office, Residence Phone/ Cell No. and Email address.)	

Note:

1. The specifications available in the item offered shall be mentioned clearly against each tender specification.
2. Detailed specifications chart, designs drawing etc. for equipment offered are to be provided along with original literature.
3. For any imported equipment, part of equipment, valid documentary evidence regarding foreign make as well as import of goods is to be provided by the Bidder along with consignment.
4. Any item, material, consumable required for installation and commissioning of equipment to be brought by supplier at the time of installation of equipment.

Remarks if any:

DECLARATION

We solemnly declare that we have attached all the documents mentioned here in above and in the tender. We also understand that non-compliance of any documents will be treated as non-respective tender and we will lose our claim to participate in the Tender Enquiry automatically and our tender will be liable to be rejected.

Name of the Firm:

Authorized Signature:

Name:

Designation:

Seal of firm:

COMMERCIAL BID FORM
(Online Submission Only)

Current Tender Details:

Tender No.:

Last Date & Time for submission of Bid:

- 1) Name of Instrument / Equipment/ **Establishing of Hardening Unit for plant tissue culture** :
- 2) Make & Model :
- 3) Name of the Bidder :
- 4) Name of Manufacturing **company/brand**:
- 5) Price of Main Unit along with essential accessories :

S. N.	Item Description	Number of unit/ Items	Unit price (INR)	Total Price in INR	Custom duty / (at concessional rate to Educational Institute) (Enter '0' if not applicable)	GST in (INR) (Enter '0' if not applicable)	Any other tax if Applicable (Enter '0' if not applicable)	Total Price (F.O.R.) In INR (4 to7)
	1	2	3	4	5	6	7	8
A	Price of Main Unit							
B	Price of all essential accessories							
	Total F.O.R. price in ` INR (A to B)							Total

Important Note: Give the description of all essential accessories with their respective price in detail as below

B: Description of all the essential accessories.

S. N	Name of essential Accessories/ Consumables/ Items	Number of unit	Unit price of essential accessories (INR)	Total Price in INR	Custom duty / (at concessional rate to Educational Institute) (Enter '0' if not applicable)	GST in ` (INR) (Enter '0' if not applicable)	Any other tax if Applicable (Enter '0' if not applicable)	Total Price (F.O.R.D.) in INR (4 to 7)
	1	2	3	4	5	6	7	8
1								
2								
n								

Note: Total FORD price in INR (A+B) will be used for price comparison.

C. Optional Accessories / Extra Consumables/ other Items

S. N	Name of Optional Accessories/ Consumables/ Items	Price per unit (INR)	Number of Unit / Quantity	Total price of Accessories/ Consumables / Items in INR	Any tax Applicable in ` (Enter '0' if not applicable) (INR)	Total Price (F.O.R.D.) in INR (4 to 5)
	1	2	3	4	5	6
1						
2						
n						

Remarks if any:

Maintenance contract

Sr No.	Type of contract	Rate for 1 ST year in ` (INR)	Rate for 2 ND year in ` (INR)	Rate for 3 RD year in ` (INR)
1	Comprehensive Maintenance Contract (CMC)			
2	Annual Maintenance Contract (AMC)			

Note:

(1)	Price must be quoted in above format with breakup. Quoting of consolidated price without breakup will not be considered.
(2)	Optional item shown in Technical Bid should be quoted separately for each optional Accessories / Extra Consumables/ other Items and will not be considered for price comparison.
(3)	All terms and conditions of supply shall be applicable as per tender terms. Any terms and condition enclosed with Commercial Bid shall be ignored or in such a case offer is liable to be rejected.
(4)	Please enclose annexure of tax declaration certification.
(5)	The price quoted for AMC & CMC Maintenance contract will be applicable after completion of comprehensive warranty/guarantee period (as per tender condition).
(6)	Sardarkrushinagar Dantiwada Agricultural University is entitled for exemption of Customs Duty as per Government Notification No.51/96-Customs dated 23 rd July 1996, Notification No. 28/2003- Customs dated 01.03.2003, Notification No. 43/2017-Customs dated 30.06.2017 & Notification No. 47/2017- Integrated Tax (Rate) dated 14.11.2017, Notification No.10/2018- Integrated Tax (Rate) dated 25.01.2018 and Notification No. 45/2017- Central Tax (Rate) dated 14.11.2017, Notification No.45/2017- Union Territory Tax (Rate) dated 14.11.2017 & Notification No. 9/2018- Central Tax (Rate) dated 25.01.2018, Notification No. 9/2018- Union Territory Tax (Rate) dated 25.01.2018, as amended from time to time for research purpose only. If applicable, certificate will be provided by the University to the successful bidder on demand. Therefore, considering the exemption of custom duty and central excise the rates may be quoted.
(7)	Local agency commission if any, will not be allowed.
(8)	If required, custom exemption certificate issued by the concerned authority shall be provided by the consignees.
(9)	TDS as applicable will be deducted from payment
(10)	The price/rates for Packing Forwarding, Insurance and Installation charge for the instrument should be included in the price of main unit/instrument/essential accessories/optional accessories.

DECLARATION

We solemnly declare that we have attached all the documents mentioned here in above and in the tender. We also understand that non-compliance of any documents will be treated as non-respective tender and we will loose our claim to participate in the Tender Enquiry automatically and our tender will be liable to reject.

Name of the Firm:

Authorized Signature:

Name:

Designation:

Seal of firm:

AFFIDAVIT
(TO BE PHYSICALLY SUBMITTED)

(To be submitted IN ORIGINAL on Non-Judicial Stamp Paper of Rs.100/- duly attested by first class magistrate/Notary Public)

I/We age..... years residing atin capacity ofM/s.....hereby solemnly affirm that

1. All General Instructions, General Terms and Conditions as well as Special Terms and Conditions laid down on all the pages of the Tender Form have been read carefully and understand properly by me which are completely acceptable to me and I agree to abide by the same.
2. I/We have submitted following Certificates/Documents for T.E. as required as per General Terms and Conditions as well as Special Terms and Conditions of the Tender.

Sr. No.	Name of the Document
1.	
2.	
3.	
..	

3. All the Certificates/Permissions/Documents/Permits/Affidavit are valid and current as on date and have not been withdrawn/cancelled by the issuing authority.
4. It is clearly and distinctly understood by me that the tender is liable to be rejected if on scrutiny at any time, any of the required Certificate/Permissions/Documents/Permits/Affidavits is /are found to be invalid/wrong/incorrect/misleading/fabricated/expired or having any defect.
5. I/we further undertake to produce on demand the original Certificate/ Permission/ Documents/ Permits for verification at any stage during the processing of the tender as well as at any time asked to produce.
6. I/We also understand that failure to produce the documents in "Prescribed Proforma" (Wherever applicable) as well as failure to give requisite information in the prescribed Proforma may result in to rejection of the tender.
7. My/Our firm has not been banned/debarred/black listed at least for three years (excluding the current financial year) by any Government Department/State Government/Government of India/Board/Corporation/Government Financial Institution in context of purchase procedure through tender.
8. I/We confirm that I/We have meticulously filled in, checked and verified the enclosed documents/certificates/Permissions/permits/affidavits/information etc. From every aspect and the same are enclosed in order (i.e. in chronology) in which they are supposed to be enclosed. Page numbers are given on each submitted document important information in each document is "highlighted" with the help of "marker pen" as required.
9. The above certificates/documents are enclosed separately and not on the Proforma printed from tender document.
10. I/WE say and submit that the Permanent Account Number (PAN) given by the Income Tax department is which is issued on the name of..... **(Kindly mention here either name of the Proprietor (in case of Proprietor Firm) or name of the tendering firm whichever is applicable).**
11. I/We understand that giving wrong information on oath amounts to forgery and perjury and I/We am/are aware of the consequences thereof. In case any information provided by us are found to be false or incorrect, you have right to reject our bid at any stage including forfeiture of our EMD/PBDG/Cancel the award of contract in this event. University reserves the right to take legal action on me/us.
12. I/We have physically signed and stamped all the above documents along with copy of tender documents (page no. to).
13. I/We hereby confirm that all our quoted items meet or exceed the requirement and are absolutely compliant with specification mentioned in the bid document.
14. My/Our company has not filed any Writ Petition, Court Matter and there is no court matter filed by State Government and its Board Corporation is pending against our company.
15. I/We hereby commit that we have paid all outstanding amounts of dues/taxes/cess/charges/fees with interest and penalty.
16. In case of breach of any tender terms and conditions or deviation from bid specification other that already specified as mentioned above, the decision of Tender Committee for disqualification will be accepted by us.

Date :
Place:

Stamp & Sign of the Bidder

Signature & Seals of the Notary

Tender Item No.	Name of Item and Specifications
1.1	<p data-bbox="204 241 1367 280">Auto-multi probes sample preparation workstation with accessories</p> <p data-bbox="1050 286 1367 324" style="text-align: right;">Required Quantity : 01</p> <p data-bbox="204 331 1367 398">Sample preparation workstation automated with accessories: The complete system should be fulfill following minimum specifications</p> <p data-bbox="204 405 1367 443">1- Auto-multi probes Sample Preparation Workstation with accessories (SPW)</p> <p data-bbox="204 450 1367 488">Model:</p> <p data-bbox="204 495 1367 562">The Auto-multi probes/Automated Sample Preparation system / workstation with accessories</p> <p data-bbox="204 568 1367 712">The system should be configured to conduct the most popular QuEChERS sample preparation methods for Pesticide Residues analysis in Food and other agro commodities. Applying Acetonitrile Extraction and Partitioning with Magnesium Sulfate, Clean-up by Dispersive SPE—</p> <p data-bbox="204 719 1367 786">OR Solid Phase Extraction SPE/μSPE/mini SPE) with standard 0.1, 1, 3, and 6 mL SPE cartridges, mixing, evaporating, reconstitution and suitable dilutions etc.</p> <p data-bbox="204 792 1367 898">Sample preparation work station must be independent work flow as well as attachable to chromatography system like LC- Q-TOF/ GC-Q-TOF where act as sample preparation work station cum injector</p> <p data-bbox="204 920 1367 1032">Sample preparation workstation main unit should have robotic x-y-z automation platform for multifunctional sample preparation for standalone operation and it also can be mounted either on LC/GC system for auto injection.</p> <p data-bbox="204 1039 1367 1106">Sample preparation steps are performed during the analysis of the preceding sample for best system utilization and highest sample throughput.</p> <p data-bbox="204 1113 1367 1180">Sample preparation steps are performed in a controlled and highly accurate and reproducible manner for best possible results.</p> <p data-bbox="204 1187 1367 1254">Every step should be selectable by software base menu in method for sample preparation</p> <p data-bbox="204 1261 1367 1294">Main unit</p> <p data-bbox="204 1301 1367 1335">Main unit must be configured with attachment of different module as per specification</p> <p data-bbox="204 1341 1367 1476">The robotic work station efficiently provides reliable processing of complex tasks. Syringe holders and syringes should integrate in special syringe modules for variable syringes, which can be exchanged automatically within a running sequence when using different flexibility.</p> <p data-bbox="204 1482 1367 1516">It should have base x-y movement head line/rail/platform</p> <p data-bbox="204 1523 1367 1588">It should have 3 or more universal syringes holding modules for each liquid syringe of different range of volume cater from 1 μL to 5000 μL or better</p> <p data-bbox="204 1594 1367 1628">It should have a tray holder with minimum 3 trays for more than 50 vials of 1.8 to 2ml</p> <p data-bbox="204 1635 1367 1668">It should have standard wash stations/ module for 5 numbers 10ml vials or better</p> <p data-bbox="204 1675 1367 1740">It should have automated syringe tool exchanges facilities minimum 3 syringes tool module of different size syringes or better for efficiently performance.</p> <p data-bbox="204 1747 1367 1780">It should have all module mounting kits and accessories</p> <p data-bbox="204 1787 1367 1877">It should have PC control interfaces 1 LAN to connect to computer, 2 PAL Bus to connect active modules , 1 interface and 2 USB or better for fulfill fully automation functions</p> <p data-bbox="204 1883 1367 1995">It should have fully required all components and accessories such as trays, tray holders, module parking, cartridge holder for all types, vial and bottle holders, waste and wash device, for fully function without manual interaction</p> <p data-bbox="204 2002 1367 2054">It should supply with any device/ module/ accessories for fully and automatic at maximum functional abilities</p>

	<p>System to be quoted and supply with Tool kit, installation items for application and functionalization of system.</p> <p>Software</p> <ul style="list-style-type: none"> • System license software to control and programming all function and device/ module under one software. • Software should be able to operate independently and should able to control for all modules on Robotic Rail and functions. • Software should able to add Priority samples to the system at any point in the standard analysis sequence • Software should have sample preparation Builder function to automate all sample preparation steps as per desire function method : like Standard addition, Derivatization, Sample transfer, Incubation and Agitation, Extraction, Mixing , Conditioning, Dilution, Weighing, Solid Phase Extraction, Washing, Evaporation & Sample Introduction. • Software should able to control, exchange syringes or dispensing pump as per method set up. • Software should have Intelligent sequence editor with dill –down functions to generate new sequence extremely easily and quickly • Software should have LOG file and Service LOG file functions to provide traceability and make trouble-shooting easier. • Software should have built-in maintenance function, simplifying maintenance planning and improving the overall operation. • Software should provide an at-a-glance graphical overview of all sample preparation steps, the total analysis time for the entire batch of samples. Based on the scheduler overview, sample preparation and analysis times are easily optimized for highest throughput. • It should be upgradable free of cost upto 10 year from date of installation <p>2- Computers system for software installation and instrument operation, data storage and analysis</p> <ul style="list-style-type: none"> • Computer with specifications should be compatible and capable to operation functional working of the complete system with licensed software for 24x7 hrs without interruption and Data station should be compatible to process all operation of system • Computer with Intel Core i7 Processor Intel original M/B, or better, 32Gb DDR3 RAM, or better, 1 Tb HDD or better configuration with, DVD RW (CD RW capable), graphic card Ethernet ports, internet and USB, HDMI, VGA and Audio in etc ports. Computer should be along with latest licensed window OS and other necessary softwares. LED monitor screen minimum 27” or better, 3840x2160 UHQ (4K) resolutions with in-built speakers 8W+8W.Working on AC 100-250Vac, 50/60Hz . Laser 6-button mouse, keyboard. <p>3- Pre requisite for Automated Sample preparation workstation with accessories for installation and working of the complete system:</p> <ul style="list-style-type: none"> • Vendor should be quote and supply installation kits /any other material/ items requirement as a cost of tender price for instrument fully working status. • Any specific requirements other than above should be mention in tender offer either as standard accessories or as separate with specification and quantity • Vendor should be supply and installed for the working of the system, all accessories such as vials, syringe tubing, module, electric device etc for safe and precursory installation and maintenance during guarantee period.
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<ul style="list-style-type: none"> • Vendor should be quote, provide and must be supply any spare parts, routing replacement items with code for future required for tuning/ calibration/ service / maintenance/ repaired to keep system in full functional condition of system for 3 years excluding consumable. 	
<p>Power supply: Power supply: 230V, 50/60Hz uninterrupted with equipped with UPS and battery beck up will be available from the University.</p>	
<p>4- Essential spares to run instruments</p>	
<p>These items should not be included as standard items quoted in offer for full functional system but as purely extra consumable</p>	
Specifications and name and code	Quantity
Syringes each size to cater 1µ to 1000µl & 5ml compatible to system	• 3 each size
Vial and cartridge holding trays	• 2 each type
Tubing, adaptors , frits, joints, and any replaceable item for operation of system	• 1 set
GC-mini SPE/µSPE QuEChERS Cartridges for pesticide extraction	• 1000 nos.
LC-mini SPE/ µSPE QuEChERS Cartridges for pesticide extraction	• 1000 nos.
Vials and bottles specific to providing model of SPW	• 2 set
Any other vendors should suggested item : as per required for fully function system for five years with maintenance or replacement or repairs to be mention separately	• Q S
<p>5-Other term and conditions</p>	
<ul style="list-style-type: none"> • Point wise compliance sheet with vendor’s specifications values must be provided in enclosed with tender, otherwise offer will be technically rejected. Claimed specification in sheet must be mansion page number of the technical bid document 	
<ul style="list-style-type: none"> • Warranty should be comprehensive of complete system including the third party items should have as per general term and condition (Three years complete warranty/ guarantee (mean servicing maintenance, labors, spare-parts, repair with/or replacements etc). (Conditional warranty will not be acceptable) from the date of installation and One year free AMC after completion of complete warranty /guarantee period. • Spares required during warranty years trouble free operation should be included in the offer and supplied with system. Warranty including necessary numbers of visits of application engineer after installation and functional training. • Written service maintenance schedule with replacement/ spare part items to be submitted along with offer. 	
<p>Vendor should be supply any spares parts, routing replacements item required for tuning/ calibration/ service/ maintenance/ repaired to keep system in functional working conditions without trouble free operation during warranty /guarantee period (It should be listed along with offer except consumables)</p>	
<ul style="list-style-type: none"> • Servicing: All preventive maintenance as well as break down service should be provided free of cost under guarantee/ warranty period. • AMC: Specify separately quote the AMC charges for 1st and 2nd years (2 years) after guarantee / warranty period including calibration of the system. • Vendor should install free of cost at our site with analysis of few samples and developed a method with complete report to be printout. 	
<p>Training: The supplier has to impart ON- site operational training immediately after the installation</p>	

1.2 Supplying, installation and commissioning of hardening unit system for tissue culture at Bio Science Research Centre, SDAU, Sardarkrushinagar (Turnkey project)

TECHNICAL SPECIFICATION	
A	This project include design, development, manufacturing and commissioning with following items from B1 to D2
B1	<p>TEMPERATURE CONTROL SYSTEM WITH ALL ACCESSORIES</p> <p>B1.1 FAN and PAD COOLING SYSTEM: Cellulose Pad: Cross fluted Cellulose cooling pads of 1.5 meter height with 150 mm thickness covering the area properly, PVC uniform water distribution system with each pad have aluminum frame with fittings with the water pumping system maximum flow rate: 120-150 Lm⁻¹ minimum with returning piping total 2 set 1 each for C1.7 and C1.8. Co-axial fan/ fan pad system (IS marked): (14 in nos) Sufficient cooling pads- 36" with louvers, 1 HP-single phase ISI standard electric motor containing 6SS blades mounted in aluminum frame having air blowing capacity of 10600 cfm (300 cm), followed by aluminum/plastic louvers. Each fan must have regulators, 7 fan in each for C1.7 and C1.8.</p> <p>B1.2: SHADING SYSTEM: Plastic films for greenhouses- Specifications (IS 15827:2009) Fixed properties - 200 micron thick, UV stabilized, Thermic diffused, Anti dust, Anti drip. Optional property - IR Reflective Cooling 1 each for C1.7 and C.1.8.</p> <p>B1.3: HIGH TEMPERATURE STERILIZATION UNIT/HORIZONTAL DOUBLE DOOR AUTOCLAVE WITH FOLLOWING SPECIFICATIONS (One) Unit made up of Stainless Steel of SS-304 grades or better, The pressure adjustable from 5 psi to 20 psi with automatic pressure control switch, which controls the pressure with an accuracy of +/- 1 psi. Triple walled with a steel jacket, separate boiler, inner and outer chamber, jacket and boiler made of stainless steel. Low water cut off to protect the heaters from running dry and to ensure that the machine is automatically switched off in case the desired water level falls below the prescribed level, auto safety door lock, mounted on rigid tabular stand. Spring loaded safety valve of stainless steel. Inner dimensions of chamber cylindrical/rectangular of 500 L or more, 9kW (approx.). Electrically heated, Working pressure: 1.2 -1.5kg/sq. cm. There should be provision for vacuum for drying of racks and porous loads. Automatic Pressure Control Switch- To cut-off the current from the heating elements, when the desired/ set pressure value level is attained inside the chamber and restarts the mechanism once the pressure inside the chamber falls from the desired level. Automatic Water Cut-off Device –Temperature Indicator to indicate the temperature inside the chamber. Timer with Alarm System - To regulate the sterilization time of the media to be sterilized and when the desired time is passed, with a buzzer, to that the completion of sterilization cycle. Two spare rubber gaskets and one electric element must be provided. Equipment quoted should comply with Indian Standards Institutions Guidelines or any other National or International Guidelines. Voltage regulator of appropriate rating to be included to cope with 160-260 V. Installation in the wall between two rooms included. Service on-site after every six month during warranty period. List of spare parts which would be supplied with instrument. Onsite calibration of the equipment must be done once in a year as per NABL guidelines.</p> <p>B1.4: REFRIGERATOR FOR STORAGE OF STALK SOLUTIONS AND CHEMICALS: 2 Nos. Technology equivalent to LG GC-B247SQUV Capacity (687 Liter); Inverter Linear Compressor Multi Air Flow Cooling Technology; Exterior Finish Matte; Exterior Display; MOIST ‘N’ FRESH; Open Door Alarm; Tempered Glass Shelves; Interior 3 Lamp LED; Door Basket ; Normal Ice Tray; -4 Tempered glass Freezer Shelves; Drawers 4 Door Basket; Height (mm) 1790 Width (mm) 912 Depth (mm) 738; Voltage 230 Volts Wattage 125 Watts; Double-door</p> <p>B1.5 Heating system for C1.7 and C1.8 Heat Convector to maintain required temperature, by electric heat convector system 2.5 KW with independent auto operations. Complete uniform heat circulation system has been given, so that the heat can be blown in the complete area of 200 square meter (2 set).</p>
B2	<p>HUMIDITY CONTROL SYSTEM WITH ALL ACCESSORIES</p> <p>B2.1 FOGGING SYSTEM: Overhead fogging system of 28 lph 4 way fogger (zero drain) hanging type fine fogger nozzle to be fixed in LLDPE pipe of diameter 16 mm and other accessories. Number of foggers should be sufficient to meet the requirement in three environmental control chamber of size 200 square meter each. (3 Complete Set), 1 Each for C1.7 to C1.9.</p> <p>B2.2 DRIP IRRIGATION SYSTEM: Drip irrigation system required in 3 environmental control chamber of size 200 square meter each. Drip irrigation system as per requirement. 16mm drip line of 0.45 cm x 2 lph, with standard header and filtration manifolds, fertilizer injector with suitable pump set size and tank- The complete set (Applicable only BIS standards for all irrigation components as well as water tank), (3 Complete Set) 1 each for C1.7 to C1.9.</p> <p>B2.3 AIR CURTAIN –total 3 Nos. Three air curtain for door size of 1.2 m Down Flow: Up to 8'-0" Velocity: 20.0 m/s @ High Speed / 16.0 m/s @ Low Speed, along with overheating protection.</p> <p>B2.4 AIR SHOWER UNIT WORKING SIZE (900x900x1830mm) (Two Nos.) Material of Construction: Main Structure with MS Powder Coated construction Inside Working Area: SS-304. Bottom do with Aluminum Checker Plate (4" above from floor). Both Side Entry / Exit Door: GI Powder Coated duly Double Skinned Cleanliness: Class 1,00,000. Velocity at Nozzle: 10 ± 5 M/S. Nos. of Nozzle: 15 - 20 Nos. Shower operation – Semi Automatic – By Push Buttons / Non-Contact Switch, Both the doors controlled by electromagnetic interlocking.</p> <p>B2.5 PROVIDING AND INSTALLING CLEAN ROOM SYSTEM CLASS 10000 (Clean Air System) without Cooling and Humidity control in total approx area 161 (approx.) m² and height 2.80m. The area include the room C1.1 to C1.3, laminar air flow room, adjoining area, common passage etc., All the associated civil work/modifications etc. If required in existing structure including false sealing and additional door will be in the scope of vendor.</p> <p>B2.6 PROVIDING AND INSTALLING AHU System: System must maintain the class 10000 in C1.4, C1.5 and</p>

TECHNICAL SPECIFICATIONS FOR ITEMS IN TENDER NO SDAU-BSRC-PUR-1.1 TO 1.2/2020-21

	<p>C1.6. Temperature, humidity and light control that is to maintain temperature range 15°C to 35°C ±5°C and humidity RH 40% - 85% ±10% (throughout the year on environmental conditions approximately temperature 5°C to 50°C and humidity ranges 20 to 99 % RH at Sardarkrushinagar location) in C1.4 to C1.6. All the associated civil work/modifications etc. will be accomplished by the vendor.</p> <p>B 2.7 Static Pass Box made of SS-304 with Door Interlocking Working Area: 750 x 750 x 750 mm 02 Nos should be installed where required.</p>
<p>B3</p>	<p>LED LIGHTING SYSTEM WITH ALL ACCESSORIES</p> <p>B3.1 COLOR LED T8 1200mm 22W or more lights of: 5 Nos. (Red 620-630nm), 5 Nos. (Blue 455-465nm), 5 Nos. (Infra Red 730-735nm), 5 Nos. (UV 385-395 nm), 5 Nos. (Far Red 850 nm).</p> <p>B3.2 WHITE LED lights: T8 1200mm 22W or more LED lights 10 Nos.</p> <p>B3.3 FULL SPECTRUM 50W OR MORE LED GROW LIGHT 5 UNIT: E27 660nm 460nm 510nm IR UV Lamp which contain 10 Red: 4 Blue: 1 Orange: 1 White: 1 IR: 1 UV LEDs. The design of LED light must be according to need at the time of rack fitting.</p>
<p>B4</p>	<p>CO₂ CONTROL SYSTEM WITH ALL ACCESSORIES</p> <p>B4.1 CO₂ GENERATOR: A natural gas, 4 burners CO₂ Generator. It is suitable for spaces 6.25 × 6.00 m or smaller in C1.6. It is powder-coated steel enclosures that resist moisture, rust, and discoloration. Its built-in solid-state electronic ignition module creates a spark to light the burners. The unit is also equipped with a safety tip over feature that shuts off the gas source if the unit is tipped or falls over.</p> <p>B4.2: CO₂ MONITOR required in chamber C1.6: 1200P CO₂ Monitor is a desktop and wall mountable instrument that measures CO₂ concentration in air; The instrument displays the real-time value of CO₂ concentration in ppm, temperature and relative humidity; The measured CO₂ value in ppm (parts-per-million) will be displayed on the LCD with three states indication: Good (0 to 800ppm), Normal (800 to 1200ppm), Poor (>1200ppm); It has built-in storage for continuous data logging; Powered by USB, or AC adapter to be supplied with ; Monitor CO₂ Carbon Dioxide concentrations; Maintenance free NDIR (non-dispersive infrared) CO₂ sensor; Automatic Baseline Calibration (ABC) with disable feature for use in areas with continuously elevated CO₂ levels (>400ppm); Triple LCD simultaneously displays CO₂, Temperature and Humidity; Visible and Audible CO₂ warning alarm when concentration level exceeds high or low user set point; Min/Max CO₂ value monitor; Desktop or wall mount; Complete with Universal USB cable and optional AC adapter; Operating Temperature : 0-50 °C; Storage Temperature : -20°C ~ 60°C; Operating & storage RH : 0-95% (non-condensing) ; CO₂ Sensor : Measuring range : (0-1500) ppm; Accuracy : ± 50ppm or ± 5% of reading; Warm-up time : <20 seconds; Temperature Measurement :Operating temperature : 0°C-90°C; Display resolution : 0.1°C ; RH Measurement :Measuring range : 5~95%;Accuracy : ±5%; Display resolution : 1%.</p> <p>B4.3: AIR QUALITY MONITOR FOR ISO 7/8 CLEAN ROOM Air Born Particle Count Test, Air Velocity Measurement, Air Change per Hour Report, HEPA Filter Leakage Test, Air Pattern Test to be attended by NABL Calibrated Instrument in room C1.2 to C1.6.</p>
<p>B5</p>	<p>AUTOMATED SOFTWARE CONTROLLING SYSTEM WITH ALL ACCESSORIES</p> <p>B5.1 MICROPROCESSOR BASED AUTOMATION CONTROL PANEL: For Temperature and Humidity for room no. C1.4 to C1.6.</p> <p>B5.2 CONTROL PANEL: Control panel which includes temperature & humidity Control System 1 Complete Set each for item no C1.7 and C1.8.</p> <p>B5.3 ALL IN ONE DESKTOP : Preferred brand type HP/ Lenovo/Dell having 4GB RAM, 1TB, Windows 10 with Wireless Keyboard and Mouse Intel Core i5 (7th Gen) 3.1 GHz Windows 10 and licensed office; Anti-Glare LED-Backlit Display with Wide Viewing Angle (IPS) Display Size not less than 23 inch Resolution 1920 x 1080 3D Support ; Internal Speaker Integrated Graphic Processor Rear -(2) USB 2.0, Side -(2) USB 3.0 Bluetooth HDMI VGA Wireless: 802.11ac + Bluetooth, Dual Band 2.4&5 GHz, 1x1; Working table: Total set in 1 Nos.</p> <p>B5.4 REMOTE MONITORING SYSTEM WITH ACCESSORIES: Remote monitoring of light, temperature and humidity in the chamber C1.4 to C1.6 and temperature and humidity in C1.7 and C1.8 shall be supplied with software based monitoring.</p> <p>B5.5 MONITORING SYSTEM: – One Intel Core i5 8th Gen - (8 GB RAM /1 TB HDD, Windows 10 Home with latest office; Laptop having 15.6 inch LED screen), having all in one printer equivalent to HP laser jet pro M1136; One additional 32" LED 4K resolution Monitor for viewing, One USB Key board and Mouse extra, for integrating modems by software to control units of items in Chambers C1.4 to C1.9 and as and where required.</p> <p>B5.6 PHOTOPERIODIC SIMULATOR for C1.2 toC1.6: Digital Base Timer for Light (Display Digital) Specifications: Executive Switches ON/OFF lights at the time set by user, despite power failures. Being digital, there are less moving parts, hence more reliable.; Photoperiodic repeat cycle 24 hrs minimum ON/OFF period 1 minutes. Backup auto recharging NICAD. Powered output directly drives up to 100 tube lights 22W each. Thermal safety with 15A cutout. Accuracy ±10 sec/day. Input: 200-240 VAC. Phase-singles. Work at ambient temperature: 5° to 45°C and RH up to 85% normally for chambers C1.2 to C1.6 Total 5 Nos.</p> <p>B5.7: LIGHT SPECTRUM ANALYZER 1 NO. LED Spectrum Analyzer Pocket Chroma Meter Can Measure CCT, CRI, Spectrum etc: It makes traditional laboratory instrument available for the production on-line quality acceptance, thus greatly improved the efficiency of fluorescent lamp, CFL, LED.; Chroma Coordinates (x, y, u, v, duv), CCT (Correlated Color Temperature), CRI (Color Rendering Index), Dominant Wave, Peak Wave, Flux RGB Ratio, Half</p>

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	Width, Purity, Spectrum diagram. test (lx) or flux test (lumen) with the integrating sphere.; LCD Display and can measure all of the chroma color parameters and illuminance directly; It can test flux additional with the integrating sphere; Rang of wavelength: 380nm~780nm (visible sight); Accuracy of wavelength: $\pm 0.5\text{nm}$; repeatability: $\pm 0.2\text{nm}$; Accuracy of chromaticity coordinate: ± 0.003 ; resolution: 0.0001; Correlated Color Temperature range: 1500~25000K ($\pm 3\%$); resolution: 1K; Power supply: 3.7V Li-Battery and charger; Weight: less than 1kg ; Communicate the PC via USB/RS-232, the English software can be run in Win10/7
B6	<p>WATER PURIFICATION SYSTEM WITH ALL ACCESSORIES</p> <p>B6.1: PROVIDING AND FIXING FULLY AUTOMATIC ONE INSTITUTIONAL RO Reverse osmosis system having filtration capacity of minimum 500 LPH along with 2 nos of 5000 L unbreakable 3 layer white Plastic water tank (1 tank is to be used as feeding tank and 1 tank is to be used as storage tank of filtered water) System must have configuration of different level of TDS in output water (filtered water)- At least three year comprehensive warranties and maintenance service with spare parts and consumables which are to be supplied in advance with these units. The RO Unit should be installed in by constructing Polycarbonate sheet Room size 300cm L X 180 cm B X 210 cm H having non transparent PC top and ventilation window having SS Net to prevent rodents and birds etc. Cabinet provided storage shelf for spare parts and consumables with lockable door. Complete set up with installation and commissioning. This RO system require for C1.7 to C1.9.</p>
B7	<p>pH REGULATION AND MONITORING SYSTEM: Providing and fixing pH regulation system along with fertigation system: Ferti-Bridge Control System for EC, pH. Supply & Installation of Ferti-Bridge Control System for maintaining EC and pH of nutrient solution. Each with providing and fixing pH regulation system in nutrient supplying systems as mentioned in this document for chambers C1.7 to C1.9 with all accessories that can regulate pH ranging from 5.0 to 8.0 with accuracy of ± 0.1. (If already price are quoted in other place then need not to be quote here).</p>
B8	<p>ADJUSTABLE RACK SYSTEM</p> <p>B8.1 Tissue Culture Mobile Compactor having 2 Bay Racks Total - 03 Nos. for C1.3 Size :- 2575mm L X 750 mm W X 2500 + 200 mm Ht. GI POWDER COATED Sheet, Angle, Channel etc.; No. of Shelf- 07 Nos. (with provision for manual height adjustment), No. of Track- 06 Nos., No. of Tray/Rack- 84 Nos. (Without Tray); Drive- Mechanical and Manual; Provided positions for 28 No. of White LED Tube / Rack such - 03 Nos.; Provided positions for 28 No. of Grow RBG Light / Rack such - 01 Nos ; Lights must be more than $500 \mu\text{mol m}^{-2}\text{s}^{-1}$ PPF; Electrical- ISI Mark with Switch, Copper Wire, Timer, Dimmer etc. Hardware – Standard, Rust free coating, Minimum heating effect/heat dissipation, Energy saver with individual switching arrangement for each shelf, Separate control panel for each rack Automatic 0-24 hour digital control photo periodic timer.</p> <p>B8.2: Tissue Culture Mobile Compactor of Size :- 4500mm L X 750mm W X 2500mm Ht. Total 3X5=15 Nos. for C1.4 to C1.6 Rack Size :- 4500mm L X 750 mm W X 2500mm Ht. Type – 3 Bay; Rust free coated, MS GI Powder coated Angle and Channel etc.; No. of Shelf- 04 Nos. (with provision for manual height adjustment); No. of White LED Light/ Rack -24 Nos. in three racks in a chamber; No. of Grow RBG PAR Light per Rack- 24 Nos. in three racks in a chamber; Lights must be more than $500 \mu\text{mol m}^{-2}\text{s}^{-1}$ PPF; Electrical- BIS mark with Switch, MCB, Copper Wire, etc., Minimum heating effect/heat dissipation, Energy saver with individual switching arrangement for each shelf, Separate control panel for each rack Automatic 0-24 hour digital control photo periodic. Note: If item quoted elsewhere need not to be quoted here</p>
B9	<p>Transport trolleys</p> <p>B9.1: TRANSPORT TROLLEYS FOR CULTURE: SS304 (430mm W X 900mm L X 900mm Ht.) MOC- SS 304 Pipe 25mm Diameter X 16G Thick Shelf- SS 304 Sheet 1mm Thick – 06 Nos. Wheel- SS Bracket 4” Diameter 01 Nos. With Break & 01 Nos. Without Break; Total No. 2.</p> <p>B9.2: Step Trolley. Size : 450mm W X 900mm L X 900mm Ht. MOC- SS 304 Pipe 25mm Diameter X 16G Thick; Shelf- SS 304 Sheet 1mm Thick – 03 Nos.; Wheel, - SS Bracket 4” Diameter; 01 Nos. With Break & 01 Nos. Without Break: Total No. 2</p> <p>B9.3: ELEVATOR TRANSPORT TROLLEYS FOR CULTURE: to carry out 450X50 cm² Baskets having loaded Media bottles/Culture Tube Racks and facility to elevate top platform up to top selves of racks in pre-hardening unit Plateform size 1.2m X 0.6m, Inbuilt ladder and Hand operated elevator for platform Can hold load of one person and culture trays total weight more than 120 kg. Total No. 1</p> <p>B9.4: TRANSPORT TROLLEYS :Hand drawn transport trolleys for pots and potting material up to 100kg load Plate form size 1m X 0.5m Total No.1</p> <p>B9.5: TRANSPORT TROLLEYS: Hand drawn transport trolleys for pots and potting material up to 500 kg load Plate form size 150cm X 100cm Total No.1</p>
B10	<p>Power backup cum Generation system:</p> <p>B10.1 UPS OF 15KVA: THREE PHASE FOR ONE HOURS BACKUP: NO. 1 DSP controller with an IGBT based rectifier, power factor closer to unity (0.99). It is designed to deliver at 0.9 PF for 15kVA. can be connected with 12V VRLA / 2V VRLA batteries in an external , External Isolation Transformer Features, IGBT Based Rectifier / sine wave Inverter. Dust Filter as standard INPUT: 330 V to 460 V, 3 Ph., 50 C/S. OUTPUT:400 V $\pm 1\%$, 3 Ph., 50 C/S. O\P.</p> <p>B10.2 Silent diesel Generator Set with all accessories and Installation with works at site with required Cables of 500 meter or more and materials at the site 100 KVA or more, all the additional requirement for installation of diesel generator set will be in the scope of vendor.</p>
B11	<p>BOTTLE WASHER: (One complete unit) It should be Rotary Bottle washing type, compact and highly efficient machine</p>

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	<p>with elegant look. That meets the GMP requirements of washing for glass and plastic Bottles. The machine operates on the Rotary principle with "GENEVA" mechanism and requires manual loading and unloading of Bottles; which manual loaded and unload on rotating platform and are cleaned in series of operations. Bottles are hold in Bottle holders that are specially designed to accommodate Bottles with varying neck diameter and Bottle diameter. The Bottles are placed in an inverted position in these cup shaped holders; Spraying showers does the external cleaning of the Bottles. Solenoid valves are provided to enable the regulation of wash timings and sequence of various washing media to suit specific requirement.; Output 10 Bottle Per minute; No. of Container Holder 32 Jet; Direction of Machine Clock wise; Electrical Specification; Main Motor: 0.5 HP / 220 Volts / 50 Hz.; Pump Two Nos. 1 HP X 2 = 2 HP 220 Volts / 50 Hz; Electric Heater 3 Kw.; Tank Capacity 75 Liters. S.S. 304 (2 Nos.); Wash Cycle First Wash: - 300 Liters/Hour Approx at 15 PSI.(Detergent Water).; Second Wash :- Minimum Consumption as such, water loss during; recirculation shall be compensated.(Steam/Hot Water).;Third Wash :- 600 Liters/Hour Approx at 15 PSI. (D.M. or DL. Water).; Fourth Wash :- 15 PSI (Air).; Out Side Wash :- 800 Liters/Hour Approx at 15 PSI (Ordinary Water).</p>
B12	<p>WATER CIRCULATING SYSTEM WITH STRUCTURE: Required water circulating system mentioned in respective sections use as possible use safe submersible type rust proof motors and heavy piping of high grade for Pot Culture, Polly bag Culture, Hydroponic work in respective Chambers form C1.7 to C1.9. Items quoted for this at other place must not quoted in this section so that no repetition in pricing.</p>
B13	<p>WATER SANITATION AND FILTRATION SYSTEM RO+milliq to supply sanitize water for tissue culture: Water Purification System to convert tape water into type I and II water. It should have the following purification technologies, Pretreatment Module, Reverse Osmosis, Electrodeionisation (EDI) module, Dual Wavelength UV lamp, Dual column Ultra Purification Cartridge, Inline Ultrafilter to filter out endotoxin, proteins and nucleases, and should have recirculation facility to maintain purity of water. Integrated reverse osmosis, ultra pure water set, sterilizing filters, ultra filters and capacity. System should have dispense rate min 2 lit./ min, choice of two dispense options – Type II water from cylindrical storage tank of 30 ltr. Capacity and Type I water from automatic volume dispenser with capacity of 0.1 to 25 ltr. Type I water 1. Resistivity at 25°C, 18 MΩ cm 2. Conductivity: 0.055 μS/cm 3. TOC with UV: < 5 ppb 4. Bacterial Content : < 0.1 CFU/ml 5. Endotoxines : < 0.01 EU/ml 6. Rnase:0.01 ng / ml 7. Dnase:< 4 pg / μl Type II water 1. Water production minimum : 5 ltr./hour 2. Resistivity at 25°C, 10 MΩ cm 3. Conductivity: < 0.1 μS/cm 4. Flow rate : 15 L/hr 5. TOC: 30 ppb 6. Bacteria: < 1cfu/ml System should be supplied with storage tank and with other complete accessories Following Consumables for three years should be provided: 1. Progard® TS2 Pretreatment Pack 2. Progard® TNP 2 Pretreatment Pack 3. Quantum® TEX Polishing Cartridge 4. Quantum® TIX Polishing Cartridge 5. Photooxidation UV Lamp 6. Photooxidation UV Lamp A10® TOC Monitor 7. Bactericidal UV Lamp 8. Vent Filter for PE Tank (Type 2 Water)</p>
B14	<p>REAGENT DISPENSER SYSTEM B14.1 MEDIA DISPENSOR: We intend to purchase instrument capable of accurate digital drives that offers a maintenance-free motor and preferably have a graphical interface for ease in setting up the operation easier and faster. The system should meet the below mention specifications: Basic system configuration: Manual and Automatic modes of operation, Capacity to dispense atleast 1 to 500 ml with < ± 2% accuracy, Programmable system for automatic dispensing ,Minimum time interval should be 0.1 second, Number of doses should be atleast 500 in numbers, Max. flow rate should be atleast 750 ml/min, Quality certification for machine and accessory is compulsory. Spares / peripherals: Necessary attachment / accessory / part required for optimum working of system should be supplied with the system at no extra cost, A complete set of tubing should also be supplied at no extra cost, Note : Training is to be given onsite and which should be divided into two parts, Warranty of instrument will start only after the successful and satisfactory installation of the instrument and not after supply / delivery of instrument, All the above information for Autodispenser should be clearly mentioned on instrument brochure and / or a certificate from the manufacturing company is to be attached, Any peripherals / spares other than above mentioned required for the system should be supplied along with the system, A certificate from the original instrument manufacturer company will be required confirming about the availability of all essential spares / parts for at least 05 years, The bidder may also visit the Department for room, power supply etc. requirement before submitting the instrument quote, No modification or requirement will be provided for the system at the time of installation by the Department. If there is a need of any utilities during the installation of instrument, then the requirement has to be fulfilled / supplied by the bidder.</p>
C1	<p>CONSTRUCTION OF ENVIRONMENT CONTROL CHAMBERS C1.4 to C1.6 Pre-hardening cum culture room unit 03 complete set. Each Chamber Size: 625cm x 600 cm = 37.5m² x 3 Nos. i.e. 112.5 m² A).Partition and wall side 80 mm Thick With Glass Windows and 50 mm Thick False Ceiling and of Puffed Double Skin Powder coated Rustproof GI Sheet 22G Thick B) Sliding Door - 03 Nos. GI Powder coated Sheet 22G Thick Double Skin - 50 mm Thick. With Glass Window as per clean room system C) Flooring- 3 mm Thick Epoxy Flooring with Coving Corners; D). Electrical- In each Room – 03 Nos. Top of chamber mounted LED Light with necessary Switches & Wiring. Construction of chamber that give Air, light, temperature and humidity Control System in C1.4, C1.5 and C1.6; Electrical: Power cords and ground plugs to operate on 220 V / 440 V single or three phases. Power sockets on the panel. Photoperiodic light dark cycle in chamber C1.4 to C1.6 must be controlled for 0-24 hours. Total light intensity in the chamber C1.4 to C1.6 should be adjustable. Light, temperature and humidity must be controlled and remotely monitored. Clean room system of class 10000 for all the three chamber from C1.4 to C1.6. Note: The item quoted elsewhere in the tender need not to be quoted here.</p>

C1.7 HARDENING UNIT FOR NFT HYDROPONIC CULTURE: 25 X 8 METER

Galvanized Structure, Area 200 Sq. m., Size 25 m. X 8 m., No. of Bay 1 no., Length 25 m., Width 8 m., Side Height 3 m, Centre Height 4.2m, One side protection wall for the poly house with Rust Proof GI Wire Netting approx area 40 square meter.

Greenhouse Frame: Structure will be made by hot galvanized steel design as per IS875 standards. End walls, side walls Partition wall, framing with hot galvanized steel. All members to be fitted with Galvanized nut bolts and clamps.

Pipes: Pipes sections to be used for different Structural member will be as below

- (a) Columns: 70 mm x 70 mm in 2 mm thick, hot dip galvanized pipe.
- (b) Trusses: Top & Bottom cord 48 x 48 x 2mm; pipe; structural member should be fitted with zinc plated nuts & bolts without welding. Centre support of at least 50x50 mm pipes to be provided along the length.
- (c) Purlin and Girt: 48 x 48mm x 2mm thick.
- (d) Nuts and other metallic parts protected against corrosion.

Pre Entry Room: Double Door Annex- of size 4mx3m (L xWxH) covered with 6mm thick polycarbonate sheet qty. 01 Nos -

Doors: Size: 2m x 1.2m, aluminum sliding door normally lockable, covered with clear 6mm polycarbonate glazing 602Nos.

Air Curtain with auto on/off when door opening/closing at main entry – 1Nos

Covering: Greenhouse covering- The covering on roof, sides, partition, front and back wall with 6mm clear double walled Polycarbonate sheet along with aluminum extrusion fixture with EPDM rubber gasket and sealant.

Cellulose Pad: Cross fluted Cellulose cooling pads of 1.5 meter height with 150 mm (6 inch) thickness covering the area properly, PVC uniform water disturbing system with each pad have aluminum frame with fittings with the water pumping system 120-150 lpm minimum , 20 m length

Pump with accessories (ISI) marked 2 hp single phase (submersible motor- Crompton or approved equivalent) with a minimum discharge 120-150 lpm to distribute water uniformly over pad with 3 layer white plastic tank of 1000 lit and 1 extra mono block motor 1 hp 120-150 lpm (Crompton or approved equivalent) For wetting of pads having length of 20 m.

Co-axial fan/fan pad system (IS marked) Sufficient cooling pads- 36" with louvers, 1 HP-single phase ISI standard electric motor containing 6SS blades mounted in aluminum frame having air blowing capacity of 10600cfm (300cmm), followed by aluminum/plastic louvers. Each fan must have regulators. (7 no).

Electrical control panel It consist of Temperature and Humidity control, Piltz and photoperiodic timer, MCB, Relay, switches, RYB indicator, panel, Volt meter, MS body duly painted etc. 1 no.

Heating system Special Heat Convector to maintain required temperature, By electric heat convector system 2.5 KW with independent auto operations. Complete uniform heat circulation system has been given in this heat, so that the heat can be blown in the complete area.

Electrical connections Standardized cable of desired load with ISI mark to be used for HAF and general purpose requirement where it is necessary One no CFL should be fitted inside the buffer room for visibility during dark time

Plastic water tank & RWH mechanism 2000 liter 3 layer white plastic tank with fittings 3 No.

Side walls Brick wall of size 0.3 meter thick with 1.0 meter height for cooling pad with both side plaster, brick wall of size 0.25 meter thick, 0.25 meter height for periphery.

Air mixing and exhaust fans Air mixing fans of suitable size (4 Nos) for uniform distribution and exhaust fans of suitable size (2 Nos) for removal of heat from top .

Civil work under the stands path as per requirement for piling and foundation Structure is to be erected on CC pilling, Floor: small pieces rocks in bottom and sand on the top

Climate control Fogging system Overhead four way fogging system sufficient for 200 sq.m of area with 1 HP mono block electric pump and online water filter (Disc filter), 1000ltr unbreakable 3 layer white Plastic water tank, hanging type fine fogger nozzle to be fixed in LLDPE pipe of diameter 16 mm and other accessories. Auto control sensory mechanism specific for overhead humidity generation fogging system, controller to avoid the water logging condition in the unit (Jain/Netafim or approved equivalent) 28 LPH 4 way fogger (zero drain)

Roof Cooling System Roof cooling provides an extra possibility to lower the temperature in the greenhouse. Rooftop sprinklers create a thin film of water on the folio, which will be evaporated by the sun.

This supply lines should be fed by PVC underground sub main lines, which are connected to the underground PVC main line

Miscellaneous Corrosion free, stainless steel washbasin for chamber with drainage points, water connections with tap. ISI standard materials should be provided. General Lights and electric points inside greenhouse should be provided for additional machines

Note: The item quoted elsewhere in the tender need not to be quoted here.

NETS

Green/Black/Red shed net as screen with manually operated expanding & retracting mechanism inside the green house.

Planting System: Nutrient Film Technique (NFT) Flat Bad Stand Design) Size: 150cm x 900cm Material : GI Square Pipe of 25 x 50 mm, welded all pipe Stand Fix with Foundation in land, Height : 3 FT; **NFT Details** 150cm x 900cm stand : 8 NFT channel per Stand ; 9.0 meter length of per Channel; 44 Net Pot per Channel 2" size of Net Pot 'A' **Frame Stand**

Design: Size : 1.5 x 9.0 meter Material : GI Square Pipe of 25 x 50 mm, welded all pipe Stand Fix with Foundation in land, Height : 6 FT NFT Details 1.5 x 9.0 meter A frame : 12 NFT channel per Frame 9.0 meter length of per Channel; 44 Net

Pot per Channel; 2" size of Net Pot **Number of Stand in Unit** Flat bad 150cm x 900cm = 2 stand; **NFT Channel** Details 100 x 55mm channel Top Openable. Material: Food grade UPVC, UV Treated, mix with CP End Cover with Spout and without Spout end cap. **Nutrient System** Total 4 Nutrient Systems in Unit EC and pH control by Automatic Dosing unit Concentrated Solution tank: 4 Nos. of 20 liter, Working solution tank: 200 liter tank for each system that can fit below the Nutrient control system for each system having separate Stand **Preferably Rectangular White in color.**

If there is a need of any utilities during the facility creation, then the requirement has to be fulfilled / supplied by the bidder.

Floor Filling with 15 cm thick gravels and 10 cm thick stone dust

Note: Items quoted for this unit at other place must not quoted in this section so that no repetition in pricing.

HARDENING UNIT POT CULTURE

C1.8: POLYCARBONATE HOUSE : 25m x 8 m

Structure should be according to C1.7 and planting system will be made of bench Benching system Plastic Tray support to on benches to facilitate aeration and removal of excess water. Aluminum frame with square mesh on top of platform with GI stands for keeping plants, Dimension: 6m x 1.2 m x 0.60 m (L×W×H) covering entire greenhouse (Total 14 nos). This station should be shoved always for making it moved and rust resisting coating, Benches should provide the framing required for putting tunnel at an interval of about 5 ft with maximum height of about 1 m at the center of tunnel. Fitting provision for plastic in tunnel is required. Labelling plate for each bench at bottom of aluminum frame should be attached. One side protection wall for the poly house with Rust Proof GI Wire Netting approx area 40 square meter.

(Items quoted for this unit at other place must not quoted in this section so that no repetition in pricing)

C1.9.: NET HOUSE: 25m x 8 m: Product Gable roof net house

Size 200 sqm (25m X 8m) (Bay size 4 x 3.5 m) Height 4.2 m from floor area. Gable shaped roof, Side Height 3 m, Centre Height 4.2m, Structural design The structural design must withstand wind speed of minimum 130 km/hr. Structure Complete structure should be made of galvanized steel tubular pipes or equivalent section of light class conforming Indian Standards IS: 1161- 1998, the structural member should be joined with fasteners properly. Columns 60 mm OD, 2.0 mm thick Trusses, purlins and hockey 48 mm OD, 2.0 mm thick Member for Truss, purlins & others 42 mm OD, 2.0mm thick, Entrance Door One hinge lockable doors of size 2.5 m width & 2.5 m height double leaf made in plastic/FRP sheets mounted in suitable strong frame. Cladding (Covering) material SS Mesh on all four side and roof of the net house Green/Black/Red shed net as screen with manually operated expanding & retracting mechanism inside the net house. Fixing of cladding materials All ends/joints of net house to be fixed with aluminum strip with suitable locking arrangement. Civil work Depth of foundation need be kept at 60 cm or more depending upon soil type and prevailing wind conditions. GI pipes of 48 mm light class conforming to Indian Standards IS: 1161-1998 or equivalent sections should be grouted in cement concrete mixture with 1:2:4 ratios. Plinth 1 feet plinth with 6 inches of thickness protection around the structure, Drip irrigation System with fogging & misting facility. The system must have Sand Filter, Screen Filter, Control Valves, Bypass Assembly, Air Release Valve, Non Return Valve, Throttle Valve, Flush Valve, Venturi Injector with manifold, PVC pipes, LDPE plane lateral, Emitting pipe, foggers & misters to be fixed w.r.t design. Water tank and fittings & accessories (applicable only BIS standards for all irrigation components as well as water tank). Footpath 0.5m wide and 10 cm thick footpaths made of cement concrete ratio of 1:2:4 should be provided inside the greenhouse for required intercultural operation.

C1.10 LAB STOOL: Specially designed for work on Laminar air flow in labs with convenient adjustable height. A durable, comfortable chair/stool. Vinyl molded seat/back and with adjustable foot-ring. Seat is adjustable between 43 and 56 cm. **Total 10 Nos.**

C1.11: WALL MOUNTED STORAGE UNIT. Size: 600 mm x 600 mm x 300 mm (L x H x D): With double door glass shutter having one self with lock and key , powder coated **Total Nos. 6.**

C1.12: Garment Gowning Cabinet 01 Nos.

Size :- 900mm W X 500mm D X 1500mm Ht.; Structure- GI POWDER COATED Sheet 20 G Thick; Body, Shelf, Doors No. of Shelf- 03 Nos.; Paint- Powder Coated Electricals - 02 Nos. 4ft UV Tube lights.

C1.13: Lockers cabinet .: Size :- 1000mm W X 450mm D X 1800mm Ht; Structure- GI POWDER COATED GI Sheet 0.8mm; 12 No. of boxes/cabinet : **1 Nos.**

C1.14: Cross Over Bench 01 Nos. Size : - 300mm W X 2400mm L X 500mm Ht. Structure using - SS 304 Sheet 30 G Thick SS 304 Sq. Pipe 25 X 25 X 16G Thick SS 304 Pipe 12mm Diameter X 16G Thick

C1.15: Acid Alkali Storage Cabinet-01 Nos. Size: - 900mm W X 500mmD X 1800mm Ht. Structure- GI POWDER COATED Sheet 20 G Thick; No. of Shelf- 04 Nos. Blower- 0.5 HP 3PhzMotor; Inside Lining- PP /FRP; Paint - Powder coated

C1.16: Bottle Storage Rack 02 Nos. Size: - 1150mm W X 750mm D X 2500mm Ht. Structure- GI POWDER COATED Sheet 20 G / 16G & 3mm Thick. No. of Shelf- 10 Nos. No. of Tray/Rack- 60 Nos. (without Tray) Paint - Powder Coated

C1.17: Two set of glass doors of Width 2000 mm X Height 2500mm in the space of 2000mm width and 2800 mm height with spring loaded auto-door closer and door lock. Other work require to make air tight system will be performed by vendor. The door will be either sliding type or double skin door as per requirement air tightening of clean air system norms ISO7 and 8 (as and where required) .

C1.18: Glass Partitioning: 12mm toughened Glass approx total up to 40.0 m² along with two Glass doors of Width 2000 mm X Height 2500mm with spring loaded auto-door closer and door lock. If required it should comply air tightening as per clean air system norms ISO7 and 8 (as and where required) .

	C1.19 Two tier Rack for Working at Laminar flow: Made up of SS304 750mm X 100mm : 4Nos
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D1	<p>Inputs required to make functional above units</p> <p>D1.1 PROPAGATING MATERIAL: 1. Ginger 2.Turmeric 3. Mint 4. Stevia 5. Potato etc. of all the spp. Should be at least 100 No. each to be utilized for demonstration of working unit, Authorizations and make are not compulsory.</p> <p>D1.2 SEEDS: 1.Vegetables: 1. Cherry Tomato, 2. Broccoli 3. Spinach 4. Asparagus 5. Lettuce etc. of all the spp. Should be at least 100 No. each to be utilized for demonstration of working unit , authorizations not required mention the source.</p> <p>D1.3 GLASSWARE (Borrosil or equivalent make)</p> <p>D1.3.1.Bottles 400ml for plant Tissue culture Work 500 No.</p> <p>D1.3.2.Test tubes 25mm 150mm Rim Less 500No</p> <p>D1.3.3.Test tubes 32mm 150mm Rim Less200No</p> <p>D1.3.4.Test tubes 38mm 200mm Rim Less500No</p> <p>D1.3.5. Flask Erlenmeyer 300ml Neck diameter 50mm, bottom diameter 87mm,Height 156mm rim less : 200 Nos.</p> <p>D1.4 CHEMICALS (Plant tissue culture or AR grade required for demonstration of unit)</p> <p>D1.4.1. Ammonium nitrate or its substitute which provide ammonium ion 5 Kg</p> <p>D1.4.2. Calcium chloride 2 Kg</p> <p>D1.4.3. Magnesium sulphate 2 Kg</p> <p>D1.4.4. Potassium nitrate 5 Kg</p> <p>D1.4.5. Potassium phosphate monobasic 2 Kg</p> <p>D1.4.6. Boric acid 1 Kg</p> <p>D1.4.7. Cobalt chloride hexahydrate 1Kg</p> <p>D1.4.8. Copper sulphate pentahydrate 1Kg</p> <p>D1.4.9. Ferrous sulfate-7H₂O 1 Kg</p> <p>D1.4.10. Ethylenediaminetetraacetic acid disodium 1 Kg</p> <p>D1.4.11. Manganese sulphate monohydrate 1 Kg</p> <p>D1.4.1. Sodium molybdate-2H₂O 1Kg</p> <p>D1.4.2. Potassium Iodide 1 Kg</p> <p>D1.4.3. Zinc sulphate heptahydrate 1Kg</p> <p>D1.4.4. Myo-Inositol 1 Kg</p> <p>D1.4.5. Nicotinic acid (free acid) 500 g</p> <p>D1.4.6. Pyridoxine HCl 500g</p> <p>D1.4.7. Thiamine hydrochloride 500g</p> <p>D1.4.8. Glycine 500 g</p> <p>D1.4.9. Glutamine 1 Kg</p> <p>D1.4.10. Ca-pantothenate 1Kg</p> <p>D1.4.11. Sodium dihydrogen phosphate dehydrate 2 Kg</p> <p>D1.4.12. Biotin 250 g</p> <p>D1.4.13. Calcium nitrate 1 Kg</p> <p>D1.4.14. Activated charcoal 5 Kg</p> <p>D1.4.15. Polyvinylpyrrolidone 2 Kg</p> <p>D1.4.16. Propanol 2 L</p> <p>D1.4.17. Sucrose 50 Kg</p> <p>D1.4.18. Agar 20 Kg</p> <p>D1.4.19. Sodium hypochloride 50 L</p> <p>D1.4.20. Mercuric chloride 1 Kg</p> <p>D1.4.21. Bavistin 2 Kg</p> <p>D1.4.22. Topsin M 2 Kg</p> <p>D1.4.23. Dithane M-45 2 Kg</p> <p>D1.4.24. Chloramphenicol 500 g</p> <p>D1.4.25. Copper oxychloride 2 Kg</p> <p>D1.4.26. Vitavax T 2 Kg</p> <p>D1.4.27. Streptomycin sulphate 100 g</p> <p>D1.4.28. Tetracycline hydrochloride 100 g</p> <p>D1.4.29. Neomycin sulfate 100 g</p> <p>D1.4.30. Indole acetic acid 100 g</p> <p>D1.4.31. Indole butyric acid 100 g</p> <p>D1.4.32. Naphthalene acetic acid 250 g</p> <p>D1.4.33. Gibberellic acid GA₃ 100 g</p> <p>D1.4.34. Absciscic acid 100 g</p> <p>D1.4.35. 2, 4-Dichlorophenoxy acetic acid 250 g</p> <p>D1.4.36. 2-Naphthoxyacetic acid 100 g</p> <p>D1.4.37. 6-(γ,γ-Dimethylallylamino)purine 100 g</p> <p>D1.4.38. 6- Benzylaminopurine 100 g</p> <p>D1.4.39. Thidiazuron 100 g</p>
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D1.4.40. Buffer solution for hydroponic 100 liter

D1.5 PLASTIC WARES (Tarson or equivalent made))

D1.5.1. Autoclaveble Lid for Bottles 400ml for Plant Tissue culture Work 500 No.

D1.5.2. Square Pot of PP with Rounded corners Drain Holes at Narrowed bottom Approx.110x110mm² Top 125x125mm² height 170mm 1000 Nos.

D1.5.3. Square Pot of PP with Rounded corners Drain Holes at Narrowed bottom Approx. 70X70mm² and Top 80x80mm² height 100mm: 1000 Nos.

D1.5.4. Pots for pot-culture 13 cm diameter top, 10cm diameter base and 10 cm depth 1kg capacity UV stable 500 Nos.

D1.5.5. Pots for pot-culture 17 cm diameter top, 12.5 cm diameter base and 13 cm depth 2kg capacity UV stable 250 Nos.

D1.5.6. Pots for pot-culture 19 cm diameter top, 14 cm diameter base and 15 cm depth 3kg capacity UV stable 200 Nos.

D1.5.7. Pots for pot-culture 23 cm diameter top, 17 cm diameter base and 18 cm depth 5kg capacity UV stable 100 Nos.

D1.5.8. Pots for pot-culture 26 cm diameter top, 24 cm diameter base and 22 cm depth 10kg capacity UV stable 50 Nos.

D1.5.9. Polycarbonate or high class autoclavable plastic bioreactor, two functional set with 24 bioreactor (each of size 180x150x150 mm or better) and along with all accessories like motor, aerator, timer etc. (equivalent to the website <http://www.plantform.se/>).

D1.6: Miscellaneous (Authorizations not required mention make)

D1.6.1. Rack For 25mm Test Tube Structure- SS 304 Wire Diameter 3mm Capacity - 05 X 04 = 20 Nos. **100 Nos.**

D1.6.2. Rack For 25mm Test Tube Structure- SS 304 Wire Diameter 3mm Capacity - 05 X 06 = 30 Nos. **100 Nos.**

D1.6.3. Rack For 25mm Test Tube Structure- SS 304 Wire Diameter 3mm Capacity - 05 X 10 = 50 Nos. **-100 Nos.**

D1.6.4. Rack For 32 mm Test Tube Structure SS 304 Wire Diameter 3mm Capacity -0 5 X 04 = 20 Nos. **25 Nos.**

D1.6.5. Rack For 32mm Test Tube Structure- SS 304 Wire Diameter 3mm Capacity - 05 X 06 = 30 Nos. **25 Nos.**

D1.6.6. Rack For 32mm Test Tube Structure- SS 304 Wire Diameter 3mm Capacity - 05 X 10 = 50 Nos. **25 Nos.**

D1.6.7. Rack For 38 mm Test Tube Structure SS 304 Wire Diameter 3mm Capacity - 05 X 04 = 20 Nos. **100 Nos.**

D1.6.8. Rack For 38 mm Test Tube Structure SS 304 Wire Diameter 3mm Capacity - 05 X 06 = 30 Nos. **50 Nos.**

D1.6.9. Rack For 38 mm Test Tube Structure SS 304 Wire Diameter 3mm Capacity - 05 X 10 = 50 Nos. **50 Nos.**

D1.6.10. Bottle Tray for rack of Cabinet C1.2 to C1.3, Size: 355mm X 355mmX 76mm Ht, SS 304 Wire 3mm & 4mm Dia with Mirror Finish: **1000 Nos.**

D1.6.11. SS Cap for Rim Less Test tubes 25mm **500No.**

D1.6.12. SS Cap for Rim Less Test tubes 32mm **200No.**

D1.6.13. SS Cap for Rim Less test tubes 38mm **500No.**

D1.6.14. SS Cap for Nek diameter 50mm rim less 300ml Erlenmeyer Flask **200No.**

D1.6.15. Disposable Apron (XL) **50No.**

D1.6.16. Disposable Apron (Medium) **50No.**

D1.6.17. Disposable Shoe Cover for TITAN 100 Shoe Cover Dispenser **500No.**

D1.6.18. Disposable Cap **500No.**

D1.6.19. Disposable Mask **500No.**

D1.6.20. Phyta Jar (Equi. To Himedia PW1302 Vented Plant TC Container) **100Nos.**

D1.6.21. Phyta Jar (Equi. To Himedia PW1303 Vented Plant TC Container) **100Nos.**

D1.6.22. pH Meter : Equivalent to Lurton PH201 **1Nos.**

D1.6.23. Digital TDS Meter with Temp. Measurement **1Nos.**

D1.6.24. Handheld Refract meter for Salinity (0-100%) **1Nos.**

D1.6.25. pH Electrode for flat agar plates equivalent to Horiba 6261-10C **1 nos.**

D1.6.26. Whatmann No. 1 filter paper 10 pack

D1.6.27. LED lights (UV 385-395 nm), 24W T5 180 to 280 Volt: **5 Nos.**

D1.6.28. LED lights (Blue 455-465nm), 24W T5 180 to 280 Volt: **5 Nos.**

D1.6.29. LED lights (Red 620-630nm), 24W T5 180 to 280 Volt: **5 Nos.**

D1.6.30. LED light.(Infra Red 730-735nm), T5 24W 180 to 280 Volt: **5 Nos.**

D1.6.31. LED light (Far Red 850 nm) T5 24W 180 to 280 Volts: **5 Nos.**

D1.6.32. White LED Light (Sun Spectrum) T5 24W 180 to 280 Volt: **20 Nos.**

D1.6.33. Grow RBG Light 24W T5 180 to 280 Volt: **20 Nos.**

D1.6.34. Battery Operated Agricultural Sprayer >12 liters operated by a 12V 7Ah battery ,four types of nozzle and a maintenance kit extra washers. **2 Nos.**

D1.6.35. Vermiculite for Polly bag culture **50 Kg**

D1.6.36. Perlite for Polly bag/ Pot Culture **50 Kg**

D1.6.37. Glass water double distillation one unit minimum cooling water requirement 1 L per minute, Pyrogen Free, with borosilicate boiler, borosilicate Condenser & Quartz Heater, horizontal Type

D1.6.38. Fire extinguishers: (10 no.) ABC Types Fire extinguishers effective for all types of fire like Class A, B and C types of fires as well as Electrical fires and also ABC Powder Type (Stored Pressure) Fire Extinguisher, Multipurpose uses, certification of ISI, ISO and CE or equivalent with 5 years Warranty capacity 2 Kg

D1.6.39. Dehumidifier according to requirement

Note: Any item other than above for Conduction of whole operations for one year in C1.4 to C1.9 with reasonable output in all the seasons for relevant crop is must be supplied by vendor treated as inclusive.

TECHNICAL SPECIFICATIONS FOR ITEMS IN TENDER NO SDAU-BSRC-PUR-1.1 TO 1.2/2020-21

D2	Operational charges (Labor charge): Other expenses and TECHNICAL MAN POWER SUPPORT one Technical and two support persons for conduction of whole operations for one year(from the date of acceptance of purchase order by bidder) in C1.4 to C1.9 with reasonable output in all the seasons for defined crops which can be grown under controlled conditions. i.e. Conduct all the operations for hardening, Hydroponic and Aeroponics systems at production level for. And also all the expenses and labor required for transportation, installation, consultancy, all the risk pertaining to commissioning of this project of each and every items included and must be borne by successful bidder. For that he should produce notarized affirmation with technical bid for completion of project including insurance /compensation to manpower and even any expenses not mentioned above must be also included.
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Special additional conditions for tender

1. This project is turnkey based project only single vendor should complete this project by integrating all the items mentioned .
2. Bidders must have experience (minimum three years) of Installation/Supply of such materials for hardening units/Plant tissue Culture Lab and must produce copy of such order/s in technical bid.
3. All bidders have to submit unit/sub unit/component wise rates /price for each item in protected Excel/ pdf format to be uploaded along with financial bid.
4. Vendor should mention make/brand, models quoted items and submit well indexed well bound unit/sub unit/component/equipment/item wise technical documents for each items in technical bid for verification.
5. University may give order by omitting/ adding of unit/sub unit/component of the project.
6. Unit Rates of consumables/ fixers etc. quoted by Vendor in this tender will be bound to provide all the materials as price quoted up to warranty period, if additional material is required.
7. Bidder can visit the site before offering the tender for taking any measurements and information's.
8. Payment will be made after completion of work as per university guidelines (No advance payment will be granted).
9. The total price quoted in single figure (i.e. sum of all items mentioned under A to D2) will only be considered for bid comparison.
10. Any item/ unit/sub unit/component may be omitted by the university during work if not found suitable or not as per need of the university.
11. Any minor essential work or modification in the existing structure require for the completion or installation of product should be accomplished by the bidder.
12. Successful bidder should complete project in separate phases which may vary as per project requirements for proper implementation and functioning of project.
13. All the required consumables for making fully functional and operated for one year should be included in the bid.
14. Bidder must offer any other necessary accessories even not mentioned in this bid as an integrated part of this.
15. All the expenses and labor required for transportation, installation, consultancy, all the risk pertaining to commissioning of this project of each and every items included and must be borne by successful bidder. For that he should submit notarized affirmation with technical bid.

Name of the Firm:

Authorized Signature:

Name:

Designation:

Seal of firm:

APPENDIX

C1.3







