

**OFFICE OF THE PRINCIPAL,  
KHARIAR AUTONOMOUS COLLEGE  
KHARIAR,  
Dist:NUAPADA,ODISHA,PIN:766107**

**LABORATORY WORKSTATION WITH  
EQUIPMENTS/CHEMICALS/GLASSWARE**

No: 25262902/OHEPEE/2022-23/001 (A)

Date-20-03-2023

Sealed Tender (Two Bid) are invited from Registered Manufacture/Firms/ Suppliers/ Authorized Dealers having PAN, GSTregd. with 5 Years Audited Balance sheet and IT return copy for the supply of items as published in the college website by Regd. post/Speed post/Courier within should be reach the undersigned by 5.00 p.m. on 10-04-2023. The item shall be purchased from IDP funds under OHEPEE The details of the requirement with specification and terms condition are to be downloaded from Principal's office/ College Website. [www.khariautocollege.in](http://www.khariautocollege.in). The undersigned reserves the rights to cancel part or whole of tender/quotation without specifying any reason thereof.

The Tenderers have to fill the unit price and total amount in the respective columns in the list given below. Finally, they have to mention the total price of all the laboratory equipments, % of discount if any and the final price after the discount.

Principal  
Khariar Autonomous College

**OFFICE OF THE PRINCIPAL**  
**KHARIAR AUTONOMOUS COLLEGE KHARIAR,**  
**Dist:NUAPADA,ODISHA,PIN:766107**  
**Session-2022-23**

**TENDER FORM**

Tender No & Date	No: <b><u>25262902/OHEPEE/2022-23/001(A)</u></b> Date: <b>20-03-2023</b>
Name of The Tenderer	<b>Principal, Khariar Autonomous College, Khariar</b>
List of Items	See in <b>Annexure-II</b>
Date of publication of tender notification on official website and newspapers	Date: 20-03-2023
Sale of Tender Form commence from	Date: 21-03-2023
Last date for sale of tender form	Date: 10-04-2023 before 1.00 p.m.
Last date for submission of duly filled in Tender form	Date: 10.04.2023 before 5.00 p.m.
Date & Time for opening of Tender	Date: 18-04-2023 at 11.00 a.m.
Date and Time of the opening of Technical Bids	Date: 18-04-2023 at 11.00 a.m.
Date and Time of the opening of Financial Bids	To be intimated by Email to Qualified Bidder.
Place of opening of Tender	<b>Office of the Principal, Khariar Autonomous College, Khariar</b>
Cost of Tender Form	Rs. 1,000.00 (Non-refundable) by shape of DD/ Online (NEFT/IMPS) Account Name: PRINCIPAL KHARIAR AUTONOMOUS COLLEGE KHARIAR A.C No- 37578377545 IFS Code: SBIN0001323 Bank: State Bank of India, Khariar Branch, Nuapada-766107, Odisha.
Earnest Money in Rupees	@02% (Refundable) of the total Quoted value (Basic Value) Excluding GST.

## **CHECK LIST**

The tenderers are hereby instructed to arrange and submit the following required documents as per the checklist

Sl. No.	Name of Document	Yes/No
1	Bidder Details( <b>Annexure-I</b> )	
2	Technical specification & Technical Compliance ( <b>Annexure-II</b> )	
3	Registration certificate of the manufacturer, if any	
4	GST Registration Certificate	
5	PAN Card Copy	
6	Income Tax return of preceding <b>05</b> financial years	
7	Audited Financial Statement of preceding <b>05</b> Financial years	
8	ISO Certificate if any	
9	Other documents required for eligibility and qualification	
10	Dealership/ Authorization Certificate (In case of Dealer) -Up to Date	
11	Original catalogue	
12	Earnest Money Deposit (EMD)/ Bid Security	
13	Price schedule in prescribed format ( <b>Annexure-III</b> )	
14	Self-declaration for not having been black listed ( <b>Annexure-IV</b> )	
15	Guarantee/Warranty ( <b>Annexure-V</b> )	
16	Bank Guarantee Format ( <b>Annexure-VI</b> )	
17	Letter of Willingness ( <b>Annexure-VII</b> )	
18	The tenderers should have minimum 03 nos. of similar work orders during last three years in any of the Government organization	
19	Photocopies of the work order and Installation report of similar items	
20	Original Tender form Duly Signed & Stamp on each Page as Token of Acceptance	

Signature and with seal of tenderer

Date :

**Note – If tender is not submitted in above manner by the tenderer, may be treated as non-responsive & liable to be rejected**

## **NOTICE INVITING TENDER**

The Principal, **Khariar Autonomous College, Khariar** invites sealed tenders under **"TWO BID SYSTEM"** from reputed suppliers of good standards for selection of a supplier for the purpose of supplying different items to **Khariar Autonomous College, Khariar**.

### **"TWO BIDS SYSTEM"**

Tenderer should take due care to submit the tender in accordance with requirement in sealed covers. Bids received shall be evaluated as per the Criteria prescribed in the tender document.

The College will not entertain any modifications subsequent to opening of bids and bids not conforming to tender conditions shall be liable to be rejected. Therefore, bidders are advised to submit their bids complete in all respects as per requirement of tender document specifying their acceptance to all the clauses of Bid Evaluation Criteria, General terms and conditions and compliance to the Scope of Work requirement etc.

**i) Technical Bid** shall consist of all technical details along with commercial terms and conditions.  
**AND**

**ii) Financial Bid** shall indicate item-wise price for the items mentioned in the technical bid.

The technical bid and the financial bid should be sealed by the bidder in separate covers duly superscribed as **"Technical Bid"** and **"Financial Bid"** respectively. **Both these sealed covers should then be kept in a bigger cover** which should also be sealed & duly superscribed as "Tender for Supplying (Name of the item) to **Khariar Autonomous College**". **The Letter of Willingness, Tender Fee DD receipts towards cost of Tender form, Check List and the EMD draft should be kept in the Bigger Cover.**

In case of any clarification required relating to the tender, the same can be sought from:

(A) Principal, Khariar Autonomous College. Mobile No.- 9437625140

(B) Coordinator, OHEPEE, Khariar Autonomous College Mobile No- 9437428344  
at least 02 days before the last date of submission of Tender.

Tender documents for supply of different items can be obtained from college office on all working days between 10.00 a.m. to 1P.M. on payment of a non-refundable cost of Tender form of Rs 1000/- in the form of a Demand Draft (DD) drawn in favour of Principal, **Khariar Autonomous College**. payable at SBI, Khariar.

The tender document can also be downloaded from the official website- [www.khariarautocollege.in](http://www.khariarautocollege.in) of the college. The tenderer who have downloaded the tender document from the website should send a Demand Draft of Rs 1000/- (non-refundable) drawn in favour of Principal, **Khariar Autonomous College**. payable at SBI, Khariar, towards the cost of tender document in the bigger cover. The tender document is not transferable to any other person.

## **ELIGIBILITY CRITERIA**

**The bidders who are desirous for above work require fulfilling the following conditions:**

- A. Must be registered under GSTAct with Up-to-date GSTR-3B Statement (Last 3 Qtr).
- B. Must have annual turnover for the last 3 years should not be less than Rs 20 Lakhs. The bidder must submit copy of audited balance sheet and profit & loss account along with the acknowledgement of Income Tax Return as a proof in the **TechnicalBid**.
- C. Should not have been blacklisted by any State Govt. / Central Govt. / PSU India. A self-declaration is required as per **AnnexureIV**.
- D. Supplier should have ISO/ NABL / Equivalent Quality Product Certification.
- E. Bidder Should have Udyog Aadhar/ MSME/SSI Registration Certificate.
- F. The Tenderer must be a Reputed Original Equipment manufacturer (OEM) / or the authorized Dealer of an OEM should provide all documents relating to their manufacturing/ sales capabilities. Must have Odisha Office for after sales & Service (If OEM/ Dealer outside of the State). Tenderers who have their own sales and service station in Odisha should only quote.
- G. Proof of Establishment of Firms / Manufacturing unit/ Dealership certificate from the OEM to be attached with **Technical Bid**.
- H. The tenderers should have minimum 03 nos. of similar work orders during last three years in any of the Government organization. Photocopies of the work order and Installation report of similar items to be attached with Technical Bid.
- I. The bidder should Quote all the items as per technical specification mentioned in **Annexure II and must Enclosed Technical Compliance Sheet in Technical Bid**, The list of items available with the tenderer. Original Technical Catalog as Proof of Technical Specification should be enclosed by bidder merely Copy & Paste of Technical Specification will be outright Rejected.
- J. The bidder should Compile as per **Annexure II**, duly filled in, signed and complete in all respects. No alteration / modification in the format shall be permitted.
- K. A self-declaration that the tenderer has not been blacklisted by any State Government/ / Central Govt. / PSU in India as per **Annexure IV**.
- L. Performance Statement- **Annexure-V**
- M. If any Technical conflict arises while evaluating the Technical Bid, **Principal of Khariar Autonomous College** may ask for **Live Demonstration** of same product in front of the Purchase committee.

## 1. LIST OF ITEMS:

**Supply of Laboratory Workstation with equipments/Chemicals/Glassware to Khariar Autonomous College.** The items have been described in Annexure-II, A bidder can submit financial bid for any number of items however preference should be given those who have quoted Maximum Items.

## 2. BIDDER:

The term Bidder shall mean Company, Firm, Agency or the Individual to whom the Contract is awarded and shall include its/ his/ her/ its heirs and legal representative. Successful Bidder is referred to as "Party" in this tender document.

## 3. EARNEST MONEY DEPOSIT (EMD)

EMD, otherwise known as Bid Security is to be submitted by the bidder along with the bid in shape of bank draft or Banker's cheque in favour of **Principal, Khariar Autonomous College** payable at Khariar . No other mode of payment will be accepted amount deposited against any other tender will not be considered for adjustment against this tender.

The amount of EMD to be submitted by the bidder shall be @**02%** of the Total Quoted value of the items. The Offers not accompanied by the required EMD are liable to be rejected.

- (i) The EMD will be returned to the unsuccessful bidders after expiry of the final bid validity period or within 30 working days from the date of issue of the work order whichever is earlier without any interest and the EMD of the successful bidders shall be returned without any interest after Supply of goods. or It can also be adjusted against part of Performance Security after intimation to the Principal in writing. The EMD of the bidder will be forfeited if the bidder misleads the authority/not willing to accept the offer/Supplies sub-standard material.

## 4. MODE OF PAYMENT

- (i) Payment shall be made through Net Banking/NEFT/ RTGS transfer only after satisfactory supply of the said items.
- (ii) The principal shall be at liberty to withhold any of the payments in full or in part.
- (iii) No advance payment will be made in any case
- (iv) The 100% payment shall be given within 30 days after satisfactory installation of the equipment / material supplied & necessary training of operating personnel.

## 5. MODE OF SUBMISSION OF TENDER

- A. Tender should be submitted by tenderers in prescribed form.
- B. Tenderers should submit their offer in two parts as under:
  - (a) Technical Bid, consisting of technical details, drawing/catalogues/ brochures, data sheets or models etc. **(Annexure-II)**
  - (b) Financial Bid on prescribed format attached with the tender document **(Annexure-IV)**
- C. Proposals complete in all respect should be submitted to the Principal, **Khariar Autonomous College** through **Speed Post/ Registered Post only**. Delivery in person shall not be accepted.
- D. All details asked for in the Annexure(s) should be properly filled in and each page of tender should be Stamped & Signed by the tenderer. Failure to attach Annexures required may invalidate the tender.
- E. Any tender which is not found in the proper form or is received late due to postal delay or otherwise shall in no case be accepted.

- F. The bidder is expected to examine all instructions, forms, terms and specifications in the bid document. Failure to furnish all information required as per the tender document or submission of bids not substantially responsive to the bidding document in every respect will be at the bidder's risk and may result in rejection of the bid.
- G. Offers should be typed and Price be quoted in words as well as in figures. In case of any discrepancy or variation in between figures and words is found, the offer in words shall be finally acceptable. Disagreement with this provision shall entail the bid as non-responsive and subsequently rejected.
- H. Tender documents are not transferable.
- I. Incomplete tenders or tender received after due date and not accompanied with earnest money deposit shall be rejected.
- J. In no case the bidding manufacturer or the bidder, otherwise can authorize any other agency whatsoever to supply the items to purchaser and receive payment in respect thereof.
- K. No amendment or supplementary attachment in the bidding document shall be allowed or entertained after the bid having been submitted to the purchaser. No representation there to at any stage shall be entertained.
- L. **Principal, Khariar Autonomous College** reserves the right to reject any or all offers or increase/decrease in quantities, call for acceptance the offer in full or in part, without assigning any reasons thereof.
- M. ISO certified Company should have established service team & network across the state.
- N. The principal is not bound to accept the tender quoting the least in the financial bid. The principal reserves the right to place order for a part of the quantity offered. The rates quoted by the bidder shall be valid for any such part.
- O. They should be registered for GST/CST/ST & Income Tax and should enclose copies of relevant certificates.
- P. Tenderer will have to produce all these original documents at any time as deemed by the Institute.

## 6. TERMS & CONDITIONS

The tenderers are requested to follow the below mentioned instructions:

- A. Failure to comply with the conditions will result in forfeiting of the tender. Please cross out any mistakes and rewrite the same and countersign.
- B. Cost involved in submitting the bids, attending the tender opening meeting, arrangements for the demonstration /presentation etc. shall be borne by the bidder.
- C. No tenderer shall be allowed to withdraw the tender rates after opening of the tender. If any tenderer withdraws the rates, the EMD amount deposited by him shall be forfeited and he shall be disqualified from participating in any future tender of the Institute.
- D. Rates should be offered unconditionally and if rates are submitted with any condition the tender shall be rejected.
- E. Tenderer shall have to quote item wise rates; consolidated rates shall not be considered and tender shall be liable to be rejected outrightly.
- F. Tenderers/Manufacturer should have extensive **experience of at least 05 years** of designing, manufacturing, Supplying, installation and commissioning of the required item.
- G. It is a compulsory requirement that the items offered make and model, as quoted by the bidder must be supplied, installed and must be in good working condition.
- H. Tenderers should quote for the whole set of items required and should be willing to undertake responsibility of commissioning, warranties and after sales service. Part offer/offers not as per given specification will not be considered.
- I. Tenders should comply all the terms and conditions given in the tender document and be quoted for the specification given in the tender documents.

- J. Notwithstanding anything stated herein above, the principal reserves the right to assess the tenderers capability and capacity to perform the contract, should the circumstances warrant such assessment.
- K. In case any part of the equipment supplied being found to be non-functional the entire unit of equipment shall be taken as non-functional
- L. **Principal, Khariar Autonomous College** reserves the right to change the quantity/ upgrade the criteria/ drop any item or part thereof/extension of delivery date at any time before placing the purchase/ work/ supply order.
- M. Right of Acceptance: The college authority is not bound itself to accept the lowest tender. It is the sole discretion of the principal to place order for better quality.
- N. Signing of Tender: The individual signing the tender (or the documents in connection with it) must specify whether he/she is signing as:
  - (i) A sole proprietor of the farm, or constituted attorney of such proprietor.
  - (ii) A partner of the farm, if it be a partnership, in which case he/she must have the authority to refer to arbitration, disputes if any, concerning the business of the partnership, either by virtue of the partnership agreement or power of attorney.
  - (iii) Authorized signatory of the farm, if it is a company, a letter of the authority in this respect must be enclosed along with the bid.
  - (iv) A person signing the tender form or any part thereof, on behalf of another, shall be deemed to warrant that he/she has the authority to bind the other and if on inquiry it appears that the person so signing has no authority do to so, Principal may without prejudice to other Civil and Criminal remedies, cancel the contract and hold the signatory liable for all costs and damages.

## 7. PRICES

Farm will submit the prices (all inclusive) for each item to be quoted on prescribed format attached with the tender document including charges for installation and commissioning with at least One year (12 months) Warranty from the date of satisfactory installation and commissioning of the equipment.

The price ranking will be carried out as under:

1. The prices of optional items if not required as per technical specifications will be excluded for ranking purpose.
2. The ranking will be determined as under. Total Price (Cost) = Price quoted with all accessories as per technical specifications along with all the taxes and charges (if any). All these calculations must be clearly written by the bidder in price bid.
3. Offer with any price variation clause will not be accepted. The rates quoted in ambiguous terms such as "Freight on actual basis", "taxes as applicable extra" or "packing & forwarding extra" will render the tender liable for rejection.
4. G.S.T. or C.S.T. or as applicable Tax must be reflected in the financial bid and the tax amount is to be clearly indicated separately but included in the lump sum price.
5. Bids shall be accepted with price quoted invariably in Indian Currency.
6. No increase in price shall be allowed even if claimed on the grounds of any statutory increase or fresh imposition of any other tax later.
7. Discount, if any, offered by the bidder shall not be considered unless specifically indicated in the price schedule and shall be taken into account for consideration only if it is quoted clearly with net price taking all such factors like discount, free supply etc. to arrive at net price.
8. Prices: The tenderers are required to quote as per "Annexure" (Financial Bid) in a Separate Envelope. The rates quoted shall include the cost of Material, labour, Transport & Packaging etc., as required for the completion of work.

## 8. VALIDITY OF BID:

The bid will remain valid for 2 months from the date of opening of financial bid. The quoted price will remain firm and in case of acceptance of the tender the prices will remain firm till execution of the complete order and will not be subject to the price escalation on any account whatsoever.

## 9. TECHNICAL BID EVALUATION

Sl. No	Description	% Weightage
1	General documents (GST/VAT/PAN/ITR)	
2	EMD/TENDER FEES	
3	ISO Certificate	
4	MSME UDYOG AADHAR /SSI Certificate	
5	TECHNICAL CATALOG/ LITERATURE/DRAWINGS /	
6	PHYSICAL DEMONSTRATION AT COLLEGE	
7	PO COPY (CENTRAL INST/ RESEARCH INST/ UNIVERSITIES (UGC) / RUSA COLLEGES WITH INSTALLATION COPY	
8	AFTER SALES CAPACITY / (PROOF) SERVICE WORK ORDER COPY	

- A. Tenderers/Manufacturer should have extensive experience of at least 05 years of designing, manufacturing, Supplying, installation and commissioning of the required item.
- B. It is a compulsory requirement that the items offered make and model, as quoted by the bidder must be supplied, installed and must be in good working condition.
- C. Tenderers who have their own sales and service station (With GST Registration) in Odisha should only quote.
- D. Tenderers should quote for the Complete Experiments ("No Optional accessories") as required without Alternative Model and should be willing to undertake responsibility of commissioning, warranties and after sales service. Part offer/offers not as per given specification will not be considered.
- E. Tenders should comply all the terms and conditions given in the tender document and be quoted for the specification given in the tender documents.
- F. Notwithstanding anything stated herein above, the principal reserves the right to assess the tenderers capability and capacity to perform the contract, should the circumstances warrant such assessment.

## 10. FINANCIAL BID EVALUATION & AWARD OF CONTRACT

- A. Least Cost Selection Method" will be followed. (Technically Evaluated "L1" )
- B. Price Evaluation- Total Value Method, Preference will be given to those parties who have quoted all the items.
- C. The farm, who will Technically Qualified in Technical bid evaluation with **highest % weightage** & submits the lowest financial priceproposal (Department Wise ANNEXURE) shall be declared as the eligible bidder and shall be communicated for further process leading to issue of "Supply Order".
- D. The eligible bidder will be intimated by the principal by email / speed post and will be asked to acknowledge the "Letter of Intent (LoI)/ Work Order.
- E. Once the Supply Order is issued by the college, the concerned farm must supply and install the required number of items within 45 days from the date of issue of the supply order. No further time will be allowed without any valid reason and without prior approval of the same from the principal.

## 11. TEST AND INSPECTIONS

Upon completion of the installation work, the tenderer/supplier shall facilitate inspection of the equipment by the principal or his authorized representative, to inspect & test the equipment and to confirm that they are installed in conformity to the required specifications and are serving the desired purpose. Any defect or failure to serve the desired purpose, discovered during the inspection will be promptly rectified and made good to the satisfaction of the principal or his authorized representatives.

## 12. GUARANTEE/ WARRANTY (Annexure-V)

The tenderer shall furnish along with their quotations the under noted Guarantee/Warranty:

- A. The Guarantee/ Warranty shall be for a period of at least 12 months from the date of satisfactory installation and handing over the equipment and of works conducted there with covered under the contract in working order. During the guarantee period the replacement of any part(s) of the equipment or rectification of defect of works will be free of cost. If the down time exceeds seven consecutive days at any one time, the guarantee period will be extended beyond afore said 12 months by a duration equal to the total down time during the period of warranty.
- B. The tenderer should produce written guarantee stating that the equipment being offered is latest model and that spares for the equipments will be available for a period of at least five years after its supply to the purchaser.
- C. The tenderer whose tender is accepted shall furnish the warranty (Where Ever Applicable) in **Annexure-V** along with Bill.
- D. The manufacturer and the tenderer should guarantee the entire unit against defects of manufacture, workmanship and poor quality of components.
- E. The tenderer shall bear all cost of such replacement, including freight, if any, of such replace or repaired equipment and/or other articles but without being entailed to any extra payment on that or any other account. All documents required for replacement in part/parts will be made available by the indenter.

## TRAINING OF PERSONNEL

The successful tenderer will be required to undertake to provide training for personnel, involved in the use of equipment at site.

### **13. LEGAL JURISDICTION**

All questions, dispute of difference arising under out of or in-connection with the contract if concluded shall be subject to the exclusive jurisdiction of the court within KHARIAR

### **14. FRAUD AND CORRUPTION**

It is required that the purchasers as well as bidders/ suppliers observe the highest standard of ethics during the process of procurement and execution of contracts. In pursuance of this policy, the purchaser defines for the purpose of this provision the terms set forth below as follows:

- A. "Corrupt practice" means the offering, giving, receiving or soliciting of anything of value to influence the action of a public official in the procurement process or in execution of contract.
- B. "Fraudulent practice" means a misrepresentation of facts and/or concealment of facts in order to influence the procurement process or the execution of a contract to the detriment of the purchaser, it includes collusive practices among bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive level sand to deprive the purchaser from the benefit so free and open competition.
- C. In case of above forbidden practices adopted by any farm being detected, the purchaser shall have right to declare the farm in eligible and subsequently debar the farm either for an indefinite period or for a stated period of time for participation in any tender, award of contract and initiate appropriate legal action as per court of law.

## **Bidder Details**

1. Name & Postal address of Bidder:

Telephones/ Mobile Nos.:

E-mail:

Name & address of Owners/ Partners/ Directors:

2. Nature of Farm/ Agency/Company (Sole/ Partnership/ otherwise) :
3. Copy of GST Registration Certificate :
4. Copy of PAN Card of the Farm :
5. Audited financial statement (Balance sheet & Profit loss) of preceding :  
Five financial years
6. Income Tax return of preceding 5 financial years :
7. Undertaking certifying that the Farm is not black listed in Annexure :
8. Each page of tender form duly signed in :
9. EMD with the tender submitted. :
10. Date of Establishment of organization/ company/ agency :
11. Whether agreed to abide by all the terms & conditions of this tender :

Place: Signature of the Proprietor/ Authorized Signatory

Date: Rubber Seal indicating complete address

**All above enclosures must be valid (wherever applicable)**

(Name & Signature of the tenderer with seal)

Place:

Date:

## **LAB WORKSTATION FOR DEPARTMENT OF PHYSICS**

**WORKSTATION & INSTRUMENT MAKE: OMEGA,JEYPORE®, INDOSAW, SPANCOTEK, AELAB/GODREJ**

### **A. Smart Lab Workstation for Analysis & Verify Stefan`s law of radiation and to determine Stefan`s constant via heat Radiation Method**

#### **Technical Specification**

Smart Lab Station Output- LED 7 segment Display Via Galvanometer & Thermostatic Hotplate. Smart Lab Station Size 1800 x 1200 MM x 900 MM Made out of 25 x 25 x 1.2 MM thick MS pipe with top made out of 15 MM thick Granite as per SEFA-2016 standard .There shall be Box arrangement both the side with 1 Shelf inside made out of 0.80 MM CRCA with Power Socket & Storage Unit Stefan`s Constant radiation Apparatus on stand with black & silver disc Cu-Cn-Cu thermocouple on a rigid insulated board with two junctions in cotton wool. Oil bath with mustard oil, capacity 100 ml. Electrical heating steam arrangement , Cotton wool in a cylindrical copper enclosure on the stand for junctions of cu-cn thermocouple. water bath copper, Super sensitive micro meter as galvanometer fixed on board. Steam boiler 2 litre. Capacity with plastic tubing with pinch cock. Hot plate thermostatic controlled single phase(8"). Two mercury thermometer 110 ' C for black body appt. One mercury thermometer 360 ' C for oil both. One 250 ml glass beaker , one plastic funnel. Two spiral connecting wires with connectors.

The D-Frame and horizontal member is made of 1.6mm thick CRCA Pure Epoxy coated Mild Steel Optional-Reagent Shelf is of depth 150mm for wall side table and 300mm for Island Table. Master Upright is available for the system .

### **B. Smart Lab Workstation for Analysis of Op-Amp IC 741 as integrator & Differentiator, Adder &Subtractor and study frequency response.**

#### **Technical Specification**

Smart Lab Station Output- LCD 7 Inch Smart Lab Station Size x 1200 MM x 900 MM Made out of 25 x 25 x 1.2 MM thick MS pipe with top made out of 15 MM thick Granite as per SEFA-2016 standard .There shall be Box arrangement both the side with 1 Shelf inside made out of 0.80 MM CRCA with Power Socket & Storage Unit for Instruments, Input Signal- 200KHz/ Sine Square & Triangle Digital Output : 70Mhz Via BNC/ PC, DC Supply: +12V &-12V Fixed, AC Signal:10KHz AC Voltage:1V, OPAMP-IC741 , Capacitor:0.01µF-2nos,100pF, Resistor- 1KΩ ,10KΩ-2nos , 100KΩ-2nos 1MΩ,10MΩ

The D-Frame and horizontal member is made of 1.6mm thick CRCA Pure Epoxy coated Mild Steel Optional-Reagent Shelf is of depth 150mm for wall side table and 300mm for Island Table. Master Upright is available for the system.

## **C. Smart Lab Workstation for Analysis of Electron Particle Movement and measure e/m by Millikan's oil drop Digital & Study Tunnel Diode Characteristics**

### **Technical Specification**

Smart Lab Station Output- 22Inch LCD Type Smart Lab Station Size 1800 x 1200 MM x 900 MM  
Made out of 25 x 25 x 1.2 MM thick MS pipe with top made out of 15 MM thick Granite as per SEFA-2016 standard .There shall be Box arrangement both the side with 1 Shelf inside made out of 0.80 MM CRCA with Power Socket & Storage Unit for Instruments On board with Volt meter On board

Technical Specification

Millikan's Apparatus

Input Voltage : AC 220V, 50Hz, Output Power : 5W., Plate Voltage : 0~500V DC, Plate Distance : 5±0.2mm.  
Total Magnification : 30X, Linear field of vision : =3mm., Scale division : 2±0.01mm., Objective lens : 100 lines/mm.,Atomizer-Bottle material : Glass, Sprayer : Throat double pipe sprayer, Inbuilt Fixed DC regulated power supply, Tunnel Diode : IN 3717, DC Voltmeter : 0-600mV (Digital), DC Ammeter : 0-50mA (Digital)

The D-Frame and horizontal member is made of 1.6mm thick CRCA Pure Epoxy coated Mild Steel  
Optional- Reagent Shelf is of depth 150mm for wall side table and 300mm for Island Table. Master Upright is available for the system.

## **D. Smart Lab Table for Analysis of wavelength of laser source using diffraction Grating , using diffraction of single/Double slit and- Analysis of inverse square law, Polarization Of Light Using Laser Source**

### **Technical**

### **Specification**

Smart Lab Station Output -Diode Laser, Smart Lab Station Size - 1800 x 1200 MM x 900 MM  
Made out of 25 x 25 x 1.2 MM thick MS pipe with top made out of 15 MM thick Granite as per SEFA-2016 standard. There shall be Box arrangement both the side with 1 Shelf inside made out of 0.80 MM CRCA with Power Socket & Storage Unit .OPTICAL BENCH-**Black, Aluminium alloy**, Type :**Hexagonal section**, Scale : 0-100cm, LC : 1mm, DIODE LASER- Peak wave length: 635nm Operating voltage: 5V DC, Operating current: 250mA, Optical power: 0.4-0.8mW, Laser product: Class II,POLARIZER / ANALYZER-Angle : Adjustable (0°-90°), Frame :Suitable dia avoids scattering of lights PHOTODETECTOR- Silicon photocell, SINGLE WIRE- Frame size : 50mm x 50mmClear aperture : 15 mm dia. (approx.), Wire thickness : 0.5mm (approx.)  
CROSS WIRE- Frame size : 50mm x 50mm,Clear aperture : 15 mm dia. (approx.),Wire thickness : 0.5mm (approx.), PIN HOLE PHOTO DETECTOR- Detector : Silicon photocell, Terminals : 4mm safety socket,  
DIFFRACTION SLIDE SET (IMPORTED)- Frame Size : 50mm x 50mm, Slit : Width=0.06mm, Diffraction grating : 80 lines / mm & 300 lines / mm , Single slit : Tapered, Double slit : Tapered  
Circular apertures: 1.0, 0.60, 1.40, 0.30 mml dia  
Polaroids : 50x50mm linearly polarized

The D-Frame and horizontal member is made of 1.6mm thick CRCA Pure Epoxy coated Mild Steel  
Optional- Reagent Shelf is of depth 150mm for wall side table and 300mm for Island Table. Master Upright is available for the system.

**ANNEXURE-II**  
**LAB WORKSTATION FOR DEPARTMENT OF CHEMISTRY**

**WORKSTATION & INSTRUMENT'S MAKE:-SHIMADZU/ PERKIN ELMER/  
AELAB/SPANCOTEK/GODREJ  
GLASSWARE- BOROSIL(R) /RIVERA/ BOROSILICATE  
CHEMICAL MAKE: THERMO/HIMEDIA/MERCK/NICE/QUALIGEN**

**A. SMART pH METRYWORKSTATIONWITH SERIES ANALYSIS**

**Technical Specifications :** Smart Lab Workstation 6x4x3 with Sink and Chemical Storage Unit. The complete M.S. material of cabinet should be pre-treated (degreased, Zinc phosphate) and epoxy powder coated for better corrosion resistance. The thickness of powder coat should be 45-50 microns, which passes the test of Salt Spray for 1000 hours, It's made out of 25 x 25 x 1.2 MM thick MS pipe with top made out of 15 MM thick steel grey Granite .There shall be Box arrangement both the side with 1 Shelf inside made out of 0.80 MM CRCA . There Shall be 1 No of Reagent Rack of 750 MM width with 4 nos of electrical socket and switch .All the metal Components shall be duly powder coated after necessary pre-treatment's .There shall be 1 nos of SS Basin with 1 nos PVC Taphould have a high temperature withstanding capacity with excellent electrical insulation properties, shutter front, Bottom panel, Top front, Drawer separator, shelf, Alignment channel is of 1.2mm, removable facility should be provided Back panel, Shutter cover, Fr. Rack strip, Top cover panel. Top unit should be Granite as per SEFA-2016 standard. There shall be Box arrangement both the side with 1 Shelf inside made out of 0.80 MM CRCA & Power Socket

**Microprocessor Automatic -BIG Graphical LCD with PC Connectivity**

pH Meter Temperature Compensation, Combination pH  
Electrode and RTD Probe, LCD Display Useful for pH and  
Redox Potential Measurements. Range 0.00 to 14.00, Touch  
Button Calibration (Table Model)

Type : Microprocessor Based in Series 3 nos

Display : 16 x 4 Alphanumeric

Range : 0 to 14 pH, 0 to 1000mV, 0 to 70°C

Resolution : 0.01 pH, 0.1 mV, 0.1° C , Accuracy : ± 4 %

Included Accessories : Instruments -3 nos ,PC Connectivity Cable -3 Nos, Software, pH Electrode,  
Temperature Probe 3 nos, 3 Buffers, Electrode Stand-3 nos and Operating Manual

The D-Frame and horizontal member is made of 1.6mm thick CRCA Pure Epoxy coated Mild Steel  
Optional- Reagent Shelf is of depth 150mm for wall side table and 300mm for Island Table. Master  
Upright is available for the system .Sink is Available for 900mm height only,It should be made up  
thick high density and elastic poly propylene/SS with good resistance to organic solvents, Electrical  
Socket should be Provided along with table.

## **B. SMART DO METRY WITH SERIES ANALYSIS WORKSTATION**

### **Technical Specification**

Smart Lab Workstation 6x4x3 with Sink and Chemical Storage Unit. The complete M.S. material of cabinet should be pre-treated (degreased, Zinc phosphate) and epoxy powder coated for better corrosion resistance. The thickness of powder coat should be 45-50 microns, which passes the test of Salt Spray for 1000 hours, It's made out of 25 x 25 x 1.2 MM thick MS pipe with top made out of 15 MM thick steel grey Granite .There shall be Box arrangement both the side with 1 Shelf inside made out of 0.80 MM CRCA . There Shall be 1 No of Reagent Rack of 750 MM width with 4 nos of electrical socket and switch .All the metal Components shall be duly powder coated after necessary pre-treatment's .There shall be 1 nos of SS Basin with 1 nos PVC Taphould have a high temperature withstanding capacity with excellent electrical insulation properties, shutter front, Bottom panel, Top front, Drawer separator, shelf, Alignment channel is of 1.2mm, removable facility should be provided Back panel, Shutter cover, Fr. Rack strip, Top cover panel. Top unit should be Granite as per SEFA-2016 standard. There shall be Box arrangement both the side with 1 Shelf inside made out of 0.80 MM CRCA & Power Socket, Microprocessor Automatic DO Meter Digital (Microprocessor Based), Function: Dissolved Oxygen/ Temperature Simultaneously Display, Range: DO 0 to 20 ppm, Temperature 0 to 700 C, Resolution: DO 0.01 ppm, Temperature 0.10 C, **Acc: ±0.1 ppm**

#### **Display: 16x2 Alphanumeric**

Measuring Cell: Amperometric Gold/ Silver Electrode, Temperature Compensation: Automatic

#### **Memory: Storage of 100 samples**

Dimension: 275x187x94 mm (approx), Power Supply: 230/10V AC, 50Hz, Accessories: Instruments 2no, DO Cell-2 Nos, Cell Stand-2 Nos, Temperature Probe-2 Nos

The D-Frame and horizontal member is made of 1.6mm thick CRCA Pure Epoxy coated Mild Steel Optional-Reagent Shelf is of depth 150mm for wall side table and 300mm for Island Table. Master Upright is available for the system .Sink is Available for 900mm height only, It should be made up of thick high density and elastic poly propylene/SS with good resistance to organic solvents, Electrical Socket should be Provided along with table

## **C. SMART DIGITAL BASED AUTOMATIC MELTINGWORKSTATION**

### **Technical Specification**

Smart Lab Workstation 6x4x3 with Sink and Chemical Storage Unit. The complete M.S. material of cabinet should be pre-treated (degreased, Zinc phosphate) and epoxy powder coated for better corrosion resistance. The thickness of powder coat should be 45-50 microns, which passes the test of Salt Spray for 1000 hours, It's made out of 25 x 25 x 1.2 MM thick MS pipe with top made out of 15 MM thick steel grey Granite .There shall be Box arrangement both the side with 1 Shelf inside made out of 0.80 MM CRCA . There Shall be 1 No of Reagent Rack of 750 MM width with 4 nos of electrical socket and switch .All the metal Components shall be duly powder coated after necessary pre-treatment's .There shall be 1 nos of SS Basin with 1 nos PVC Taphould have a high temperature withstanding capacity with excellent electrical insulation properties, shutter front, Bottom panel, Top front, Drawer separator, shelf, Alignment channel is of 1.2mm, removable facility should be provided Back panel, Shutter cover, Fr. Rack strip, Top cover panel. Top unit should be Granite as per SEFA-2016 standard. There shall be Box arrangement both the side with 1 Shelf inside made out of 0.80 MM CRCA & Power Socket. No. of Samples: 1 Sample at a Time

Temperature Range: **Ambient to 300° C**

Temperature Accuracy: 1° C at 200° C & 2.5° C at 275° C

Temperature Sensor: Platinum Resistance PT100

Selectable Heating Modes: Slow, Medium, Fast

Display: 128x64 Graphical LCD No. of Keys: 4

Memory: Storage Up to 1000 Results

The D-Frame and horizontal member is made of 1.6mm thick CRCA Pure Epoxy coated Mild Steel Optional-Reagent Shelf is of depth 150mm for wall side table and 300mm for Island Table. Master Upright is available for the system .Sink is Available for 900mm height only,It should be made up thick high density and elastic poly propylene/SS with good resistance to organic solvents, Electrical Socket should be Provided along with

table

## D.SMART UV SPECTROPHOTOMETRY METRY WORKSTATION

### Technical Specification

Smart Lab Workstation 6x4x3 with Sink and Chemical Storage Unit. The complete M.S. material of cabinet should be pre-treated (degreased, Zinc phosphate) and epoxy powder coated for better corrosion resistance. The thickness of powder coat should be 45-50 microns, which passes the test of Salt Spray for 1000 hours, It's made out of 25 x 25 x 1.2 MM thick MS pipe with top made out of 15 MM thick steel grey Granite .There shall be Box arrangement both the side with 1 Shelf inside made out of 0.80 MM CRCA . There Shall be 1 No of Reagent Rack of 750 MM width with 4 nos of electrical socket and switch .All the metal Components shall be duly powder coated after necessary pre-treatment's .There shall be 1 nos of SS Basin with 1 nos PVC Taphould have a high temperature withstanding capacity with excellent electrical insulation properties, shutter front, Bottom panel, Top front, Drawer separator, shelf, Alignment channel is of 1.2mm, removable facility should be provided Back panel, Shutter cover, Fr. Rack strip, Top cover panel. Top unit should be Granite as per SEFA-2016 standard. There shall be Box arrangement both the side with 1 Shelf inside made out of 0.80 MM CRCA & Power Socket Light Source- Tungsten/ Deuterium Lamp with 4-Position 10mm Cell changer Output : USB/Parallel Port via Software, Type- UV ,Optical System: Ct Grating Hromator  
Wavelength Range: 190 Nm-1020 Nm  
Wavelength Accuracy:  $\pm 1$  Nm  
Spectral Bandwidth: 2 Nm  
Wavelength Repeatability: 1 Nm  
Stray Light:  $\approx 0.3\%$  T@220nm  
Photometric Accuracy:  $\pm 0.5\%$  T  
Photometric Repeatability: 0.2% T  
Stability:  $\pm 0.004$  A/H @500 Nm, Work Pattern: T,A,C  
Display Area: 4 Lcd, Zero Setting: Automatic,

The D-Frame and horizontal member is made of 1.6mm thick CRCA Pure Epoxy coated Mild Steel Optional- Reagent Shelf is of depth 150mm for wall side table and 300mm for Island Table. Master Upright is available for the system .Sink is Available for 900mm height only, It should be made up thick high density and elastic poly propylene/ SS with good resistance to organic solvents, Electrical Socket should be Provided along with table

For Analysis of above Experiments following Additional Chemicals & Consumables Required as per ANNEXURE-III

### ANNEXURE-III

LIST OF CHEMICALS & CONSUMABLES	
1	Buffer Solution Bottles (Any One )
2	Calorie meter- Copper Size 3X4
3	Fusion Tube
4	G3 Crucible
5	Reagent Droppers/Glass Dropper
6	Spatula
7	Specific gravity bottle
8	Stalagmometer
9	Tong
10	2,4 Dinitrochloro Benzene-25gm
11	Acetamide-250gm

12	Aluminum Sulphate-500gm
13	Ammonia solution sp.gr.0.91 (25% NH <sub>3</sub> )-500ml
14	Calcium Oxide-500gm
15	Copper foil-100gm
16	Ethanol
17	Glucose/D Glucose-500gm
18	Glycerine-500ml
19	Manganese Chloride-500gm
20	Calcium Chloride-500gm
21	Schiff's Reagent-125ml
22	Nessler's Reagent-125ml
23	Zinc Sulphate-500gm
24	Bromine Water-500ml
25	Bleaching Powder-500gm
26	Para-Nitrophenol-250gm
27	Specific gravity bottle(25ml)
28	Ethanol
29	Nitric Acid-500ml
30	Glycerin-500ml
31	Ferrous Sulphate-500gm
32	Silver Nitrate-10gm
33	Acetaldehyde-500ml
34	Acetic Acid(Glacial)-500ml

**ANNEXURE-II**  
**LAB WORKSTATION FOR DEPARTMENT OF BOTANY**

**WORKSTATION & INSTRUMENT'S MAKE:-SHIMADZU/ PERKIN ELMER/  
AELAB/SPANCOTEK/GODREJ  
MICRSCOPE: OLYMPUS/MAGNUS/AELAB/SPANCOTEK  
GLASSWARE- BOROSIL(R) /RIVERA/ BOROSILICATE  
CHEMICAL MAKE: THERMO/HIMEDIA/MERCK/NICE/QUALIGEN**

**A. SMART SPECTROPHOTOMETRY METRY WORKSTATION WITH  
SOFTWARE**

**Technical Specification**

Smart Lab Workstation 6x4x3 with Sink and Chemical Storage Unit. The complete M.S. material of cabinet should be pre-treated (degreased, Zinc phosphate) and epoxy powder coated for better corrosion resistance. The thickness of powder coat should be 45-50 microns, which passes the test of Salt Spray for 1000 hours, It's made out of 25 x 25 x 1.2 MM thick MS pipe with top made out of 15 MM thick steel grey Granite .There shall be Box arrangement both the side with 1 Shelf inside made out of 0.80 MM CRCA . There Shall be 1 No of Reagent Rack of 750 MM width with 4 nos of electrical socket and switch .All the metal Components shall be duly powder coated after necessary pre-treatment's .There shall be 1 nos of SS Basin with 1 nos PVC Taphould have a high temperature withstanding capacity with excellent electrical insulation properties, shutter front, Bottom panel, Top front, Drawer separator, shelf, Alignment channel is of 1.2mm, removable facility should be provided Back panel, Shutter cover, Fr. Rack strip, Top cover panel. Top unit should be Granite as per SEFA-2016 standard. There shall be Box arrangement both the side with 1 Shelf inside made out of 0.80 MM CRCA & Power Socket

**Wavelength Range: 325 Nm-1000 Nm**

Wavelength Accuracy:  $\pm 2$  Nm

**Spectral Bandwidth: 2 Nm**

Wavelength Repeatability: 1 Nm

Stray Light:  $\approx 0.3\%$  T@220nm

Photometric Accuracy:  $\pm 0.5\%$  T

Photometric Repeatability: 0.2% T

Accessories- Software & Interface Cable

The D-Frame and horizontal member is made of 1.6mm thick CRCA Pure Epoxy coated Mild Steel  
Optional- Reagent Shelf is of depth 150mm for wall side table and 300mm for Island Table. Master Upright is available for the system .Sink is Available for 900mm height only, It should be made up thick high density and elastic poly propylene/SS with good resistance to organic solvents, Electrical Socket should be Provided along with table.

## **B. SMART WORKSTATION WITH DIGITAL OVEN PID BASED& AUTOCLAVE**

Smart Lab Workstation 6x4x3 with Sink and Chemical Storage Unit. The complete M.S. material of cabinet should be pre-treated (degreased, Zinc phosphate) and epoxy powder coated for better corrosion resistance. The thickness of powder coat should be 45-50 microns, which passes the test of Salt Spray for 1000 hours, It's made out of 25 x 25 x 1.2 MM thick MS pipe with top made out of 15 MM thick steel grey Granite .There shall be Box arrangement both the side with 1 Shelf inside made out of 0.80 MM CRCA . There Shall be 1 No of Reagent Rack of 750 MM width with 4 nos of electrical socket and switch .All the metal Components shall be duly powder coated after necessary pre-treatment's .There shall be 1 nos of SS Basin with 1 nos PVC Tap should have a high temperature withstanding capacity with excellent electrical insulation properties, shutter front, Bottom panel, Top front, Drawer separator, shelf, Alignment channel is of 1.2mm, removable facility should be provided Back panel, Shutter cover, Fr. Rack strip, Top cover panel. Top unit should be Granite as per SEFA-2016 standard. There shall be Box arrangement both the side with 1 Shelf inside made out of 0.80 MM CRCA & Power Socket

Oven (Digital- 14X14X14 , With SS-304 Digital PID Controller , Suitable for temperature up to 250C. External body is made of S.S 304 grade with scratch proof and heat resistance paint, Internal structure including door and chamber are manufactured from either SS/Aluminium, The double walled chamber is filled with high grade insulation to prevent heat loss, heating element is roped in beds and placed at bottom and two sides, Temperature is controlled with a capillary type thermostat and ready by a thermometer, supported on heavy rubber feet to prevent with indicator, temperature control and on/off switch

Auto Clave -Vertical - Double Walled- 22ltr Capacity, Portable made of SS , All joints are Argon welded and polished to mirror finish, S.S. ,water Immersion heater specially designed to save electricity

The D-Frame and horizontal member is made of 1.6mm thick CRCA Pure Epoxy coated Mild Steel  
Optional- Reagent Shelf is of depth 150mm for wall side table and 300mm for Island Table. Master Upright is available for the system .Sink is Available for 900mm height only,It should be made up thick high density and elastic poly propylene/SS with good resistance to organic solvents, Electrical Socket should be Provided along with table.

### **C. SMART PH METRY WORKSTATION WITH MICROSCOPE (Illumination LED Lighting System)**

#### **Technical Specifications**

Smart Lab Workstation 6x4x3 with Sink and Chemical Storage Unit. The complete M.S. material of cabinet should be pre-treated (degreased, Zinc phosphate) and epoxy powder coated for better corrosion resistance. The thickness of powder coat should be 45-50 microns, which passes the test of Salt Spray for 1000 hours, It's made out of 25 x 25 x 1.2 MM thick MS pipe with top made out of 15 MM thick steel grey Granite .There shall be Box arrangement both the side with 1 Shelf inside made out of 0.80 MM CRCA . There Shall be 1 No of Reagent Rack of 750 MM width with 4 nos of electrical socket and switch .All the metal Components shall be duly powder coated after necessary pre-treatment's .There shall be 1 nos of SS Basin with 1 nos PVC Taphould have a high temperature withstanding capacity with excellent electrical insulation properties, shutter front, Bottom panel, Top front, Drawer separator, shelf, Alignment channel is of 1.2mm, removable facility should be provided Back panel, Shutter cover, Fr. Rack strip, Top cover panel. Top unit should be Granite as per SEFA-2016 standard. There shall be Box arrangement both the side with 1 Shelf inside made out of 0.80 MM CRCA & Power Socket

Microprocessor Automatic BIG Graphical LCD with PC Connectivity

pH Meter Temperature Compensation, Combination pH

Electrode and RTD Probe, LCD Display Useful for pH and

Redox Potential Measurements. Range 0.00 to 14.00, Touch

Button Calibration (Table Model)

Type : Microprocessor Based in Series 3 nos

Display : 16 x 4 Alphanumeric

Range : 0 to 14 pH, 0 to 1000mV, 0 to 70° C

Resolution : 0.01 pH, 0.1 mV, 0.1° C , Accuracy : ± 4 %

Included Accessories : Instruments -1nos ,PC Connectivity Cable -1 Nos, Software, pH Electrode, Temperature Probe 1 nos, 1 Buffers, Electrode Stand-1 nos and Operating Manual

Compound(Medical) Microscope with Illumination LED Lighting System . Technical Specifications :U Shaped heavy cast iron base with 90/45 degree inclinable body, Stage Plate Size 12 X 120 Mm With Stage Clips separate knobs for coarse and fine motion are provided on the body, revolving triple nose piece carrier the objectives, illumination is by plano-concave reflector, a bright field condenser is fixed to the stage. Maximum 600x. Objective is achromatic and par-focal, Series Achromatic Objective 10x/Na 0.25 & 40x/ Na 0.65(SI, 100x/ NA 1.25 (SL, Oil)

The D-Frame and horizontal member is made of 1.6mm thick CRCA Pure Epoxy coated Mild Steel Optional- Reagent Shelf is of depth 150mm for wall side table and 300mm for Island Table. Master Upright is available for the system .Sink is Available for 900mm height only,It should be made up thick high density and elastic poly propylene/SS with good resistance to organic solvents, Electrical Socket should be Provided along with table.

## **D.SMART LCD BASED PHOTOCOLORIMETRY WORKSTATION**

### **Technical Specification**

Smart Lab Workstation 6x4x3 with Sink and Chemical Storage Unit. The complete M.S. material of cabinet should be pre-treated (degreased, Zinc phosphate) and epoxy powder coated for better corrosion resistance. The thickness of powder coat should be 45-50 microns, which passes the test of Salt Spray for 1000 hours, It's made out of 25 x 25 x 1.2 MM thick MS pipe with top made out of 15 MM thick steel grey Granite .There shall be Box arrangement both the side with 1 Shelf inside made out of 0.80 MM CRCA . There Shall be 1 No of Reagent Rack of 750 MM width with 4 nos of electrical socket and switch .All the metal Components shall be duly powder coated after necessary pre-treatment's .There shall be 1 nos of SS Basin with 1 nos PVC Taphould have a high temperature withstanding capacity with excellent electrical insulation properties, shutter front, Bottom panel, Top front, Drawer separator, shelf, Alignment channel is of 1.2mm, removable facility should be provided Back panel, Shutter cover, Fr. Rack strip, Top cover panel. Top unit should be Granite as per SEFA-2016 standard. There shall be Box arrangement both the side with 1 Shelf inside made out of 0.80 MM CRCA & Power Socket

Wavelength Range: 400-700 nm

Filters: Minimum Built in 8 Digital Filters

Filters Wavelength: 405nm,450nm,480nm,520nm,540nm,578nm,600,620nm,680nm,700nm.

Detector: Silicon Photo Diode

Light Source: Highly Accurate LED Source

Dimension: 275 x 187 x94mm (approx)

Power: 230 ± 10 V, 50 Hz

Accessories: Set of Test Tube- 5nos, Test Tube Holder: 1Nos Detector: Silicon Photo Diode, Zero Adjustment: Auto Zero

Accuracy: ±0.01 O.D., Stability: ±0.02 O.D./ Hour

Light Source: Highly Accurate Laser Source

Amplifier: Micro Controlled Based, Volume: 1ml Minimum

Dimension: L210xB160xH80 mm (Approx)

Power: 230±10% AC, 50Hz

PC Connectivity Cable- 1 Nos

The D-Frame and horizontal member is made of 1.6mm thick CRCA Pure Epoxy coated Mild Steel  
Optional- Reagent Shelf is of depth 150mm for wall side table and 300mm for Island Table. Master Upright is available for the system .Sink is Available for 900mm height only,It should be made up thick high density and elastic poly propylene/SS with good resistance to organic solvents, Electrical Socket should be Provided along with table.

For Analysis of above Experiments following Additional Chemicals & Consumables Required as per ANNEXURE-III

### ANNEXURE-III

1	Willmotts Bubbler with Cork
2	T/A apparatus (with Cork)
3	Ganong.s photometer
4	Testube
5	Beaker (100,250 & 500 ml)-6 nos each
6	Conical flasks (100,250 & 500 ml)-6 nos each
7	Measuring cylinder (50 , 100,250 ml)-6 nos Each
8	Cover slip
9	Glass slides
10	Water Bath- Digital with 6 Hole Electric
11	Soil thermo meter (Digital)
12	Petri dishes
13	Dropping bottle (plastic)
14	Glass jar (big & small)
15	Motarpastal
16	Pipette stand (plastic)
17	Spirit lamp
18	Staining rack
19	Slide box
	<b>Chemical</b>
20	Sucrose-500gm
21	Safranin Solution-125ml
22	Glycerine-500ml
23	Sodium Bicarbonate-500gm
24	Petroleum Ether60-80 -500ml
25	Formal Dehyde 37-41% (Formalin)-500ml
26	Methanol (Methyl Alcohol)-500ml
27	Iodine Solution N/10-500ml
28	Iodine Crystal(Iodine Resublimed)-100gm
29	Hematoxylin Stain Solution-250ml
30	Ethanol Alchol-500ml
31	Nitric Acid -500ml
32	Ferric Chloride Solution 10%-250ml
33	Starch soluble-500gm
34	Sodium Citrate Solution (3.8%)-500ml
35	Sudan III Solution-125ml
36	Crystal Violet Solution Oxalated-125ml
37	Methyl Violet 6B AQ Solution-125ml
38	Fehling Solution (A)-500ml
39	Fehling Solution (B)-500ml
40	Sodium Hydroxide Flakes-500gm

41	Copper Sulphate-500gm
42	Hydrochloric Acid-500ml
43	Acetocaramine-100ml
	<b>Charts</b>
1	TMV
2	Stage of Mitosis Cell Division
3	Stage of MeosisCell Division
4	Model of Bacteriophage
5	Pollen Germination
6	Anatomy of Monocot stem
7	Anatomy of Diocot stem
8	Anatomy of Monocot Root
9	Anatomy of Diocot Root
10	Anatomy of Monocot Leaf
11	Anatomy of Diocot Leaf
12	Mitochondria
13	Chloroplast
14	Bacteria Cell
15	Pinus Cone
16	Cycas Cone
17	Glycolis
	<b>Permanent Slides</b>
1	<b>Alage</b>
1	Volvox Daughter Colony
2	Veg Cell of Chlamydomonas
3	Filament of Oedogonium
4	Thallus of Vaucharia
5	Thallus of Coleochaetae
6	Thallus of Fucus
7	Thallus of Polyshiphoria
8	Sex organ of Chara
	<b>Fungi</b>
1	Rhizopus with conidia
2	Aspergillus with conidia
3	Pencillium with conidia
4	Agaricus with gill stipe
5	Lichen Thallus
	<b>Bryophytes</b>
1	Sporophyte of Funaria
2	Gametophyte of Sphagnum
	<b>Petridophytes</b>
1	Stem of Equistem
2	Cone of Equistem
3	Stem of Selaginella
4	Sporophyte of Pteris
	<b>Gymnosperm</b>
1	Female cone of Cycas
2	L.S cone of Ginkgo
3	T.s Stem of Ginkgo
	<b>Algae Class Work Materials (Tubes)</b>

1	Nostoc
2	Chlamydomonas
3	Oedogonium
4	Coleochaetae
5	Fucus
6	Polyshiphorid
7	Ectocarpus
8	Vaucheria
9	Chara
10	Penicillium
11	Anthoceros
12	Equisetum

**ANNEXURE-II**  
**LAB WORKSTATION FOR DEPARTMENT OF ZOOLOGY**

**WORKSTATION & INSTRUMENT'S MAKE:-SHIMADZU/ PERKIN ELMER/ AELAB/ SPANCOTEK/  
GODREJ**

**MICRSCOPE: OLYMPUS/MAGNUS/AELAB/SPANCOTEK**

**GLASSWARE- BOROSIL(R) /RIVERA/ BOROSILICATE**

**CHEMICAL MAKE: THERMO/HIMEDIA/MERCK/NICE/QUALIGEN**

**A. SMART WORKSTATION WITH DIGITAL OVEN PID BASED**

Smart Lab Workstation 6x4x3 with Sink and Chemical Storage Unit. The complete M.S. material of cabinet should be pre-treated (degreased, Zinc phosphate) and epoxy powder coated for better corrosion resistance. The thickness of powder coat should be 45-50 microns, which passes the test of Salt Spray for 1000 hours, It's made out of 25 x 25 x 1.2 MM thick MS pipe with top made out of 15 MM thick steel grey Granite .There shall be Box arrangement both the side with 1 Shelf inside made out of 0.80 MM CRCA . There Shall be 1 No of Reagent Rack of 750 MM width with 4 nos of electrical socket and switch .All the metal Components shall be duly powder coated after necessary pre-treatment's .There shall be 1 nos of SS Basin with 1 nos PVC Taphould have a high temperature withstanding capacity with excellent electrical insulation properties, shutter front, Bottom panel, Top front, Drawer separator, shelf, Alignment channel is of 1.2mm, removable facility should be provided Back panel, Shutter cover, Fr. Rack strip, Top cover panel. Top unit should be Granite as per SEFA-2016 standard. There shall be Box arrangement both the side with 1 Shelf inside made out of 0.80 MM CRCA & Power Socket

Oven (Digital- 14X14X14 , With SS-304 Digital PID Controller , Suitable for temperature up to 250C. External body is made of S.S 304 grade with scratch proof and heat resistance paint, Internal structure including door and chamber are manufactured from either SS/Aluminium, The double walled chamber is filled with high grade insulation to prevent heat loss, heating element is roped in beds and placed at bottom and two sides, Temperature is controlled with a capillary type thermostat and ready by a thermometer, supported on heavy rubber feet to prevent with indicator, temperature control and on/off switch

The D-Frame and horizontal member is made of 1.6mm thick CRCA Pure Epoxy coated Mild Steel  
Optional- Reagent Shelf is of depth 150mm for wall side table and 300mm for Island Table. Master Upright is available for the system .Sink is Available for 900mm height only, It should be made up thick high density and elastic poly propylene/SS with good resistance to organic solvents, Electrical Socket should be Provided along with table.

## **B. SMART SPECTROPHOTOMETRY METRY WORKSTATION WITH SOFTWARE**

### **Technical Specification**

Smart Lab Workstation 6x4x3 with Sink and Chemical Storage Unit. The complete M.S. material of cabinet should be pre-treated (degreased, Zinc phosphate) and epoxy powder coated for better corrosion resistance. The thickness of powder coat should be 45-50 microns, which passes the test of Salt Spray for 1000 hours, It's made out of 25 x 25 x 1.2 MM thick MS pipe with top made out of 15 MM thick steel grey Granite .There shall be Box arrangement both the side with 1 Shelf inside made out of 0.80 MM CRCA . There Shall be 1 No of Reagent Rack of 750 MM width with 4 nos of electrical socket and switch .All the metal Components shall be duly powder coated after necessary pre-treatment's .There shall be 1 nos of SS Basin with 1 nos PVC Taphould have a high temperature withstanding capacity with excellent electrical insulation properties, shutter front, Bottom panel, Top front, Drawer separator, shelf, Alignment channel is of 1.2mm, removable facility should be provided Back panel, Shutter cover, Fr. Rack strip, Top cover panel. Top unit should be Granite as per SEFA-2016 standard. There shall be Box arrangement both the side with 1 Shelf inside made out of 0.80 MM CRCA & Power Socket

#### **Wavelength Range: 325 Nm-1000 Nm**

Wavelength Accuracy:  $\pm 2$  Nm

#### **Spectral Bandwidth: 2 Nm**

Wavelength Repeatability: 1 Nm

Stray Light:  $\approx 0.3\%$  T@220nm

Photometric Accuracy:  $\pm 0.5\%$  T

Photometric Repeatability: 0.2% T

Accessories- Software & Interface Cable

The D-Frame and horizontal member is made of 1.6mm thick CRCA Pure Epoxy coated Mild Steel  
Optional- Reagent Shelf is of depth 150mm for wall side table and 300mm for Island Table. Master Upright is available for the system .Sink is Available for 900mm height only, It should be made up thick high density and elastic poly propylene/SS with good resistance to organic solvents, Electrical Socket should be Provided along with table.

## **C.SMART PH METRY WORKSTATION WITH MICROSCOPE (Illumination LED Lighting System)**

### **Technical Specifications**

Smart Lab Workstation 6x4x3 with Sink and Chemical Storage Unit. The complete M.S. material of cabinet should be pre-treated (degreased, Zinc phosphate) and epoxy powder coated for better corrosion resistance. The thickness of powder coat should be 45-50 microns, which passes the test of Salt Spray for 1000 hours, It's made out of 25 x 25 x 1.2 MM thick MS pipe with top made out of 15 MM thick steel grey Granite .There shall be Box arrangement both the side with 1 Shelf inside made out of 0.80 MM CRCA . There Shall be 1 No of Reagent Rack of 750 MM width with 4 nos of electrical socket and switch .All the metal Components shall be duly powder coated after necessary pre-treatment's .There shall be 1 nos of SS Basin with 1 nos PVC Taphould have a high temperature withstanding capacity with excellent electrical insulation properties, shutter front, Bottom panel, Top front, Drawer separator, shelf, Alignment channel is of 1.2mm, removable facility should be provided Back panel, Shutter cover, Fr. Rack strip, Top cover panel. Top unit should be Granite as per SEFA-2016 standard. There shall be Box arrangement both the side with 1 Shelf inside made out of 0.80 MM CRCA & Power Socket.

Microprocessor Automatic BIG Graphical LCD with PC Connectivity

pH Meter Temperature Compensation, Combination pH

Electrode and RTD Probe, LCD Display Useful for pH and

Redox Potential Measurements. Range 0.00 to 14.00, Touch

Button Calibration (Table Model)

Type : Microprocessor Based in Series 3 nos

Display : 16 x 4 Alphanumeric

Range : 0 to 14 pH, 0 to 1000mV, 0 to 70° C

Resolution : 0.01 pH, 0.1 mV, 0.1° C , Accuracy : ± 4 %

Included Accessories : Instruments -1nos ,PC Connectivity Cable -1 Nos, Software, pH Electrode, Temperature Probe 1 nos, 1 Buffers, Electrode Stand-1 nos and Operating Manual

Compound(Medical) Microscope with Illumination LED Lighting System-4 set . Technical Specifications: U Shaped heavy cast iron base with 90/45 degree inclinable body, Stage Plate Size 12 X 120 Mm With Stage Clips separate knobs for coarse and fine motion are provided on the body, revolving triple nose piece carrier the objectives, illumination is by plano-concave reflector, a bright field condenser is fixed to the stage. Maximum 600x. Objective is achromatic and par-focal, Series Achromatic Objective 10x/Na 0.25 & 40x/ Na 0.65(SI, 100x/ NA 1.25 (SL, Oil)

The D-Frame and horizontal member is made of 1.6mm thick CRCA Pure Epoxy coated Mild Steel Optional- Reagent Shelf is of depth 150mm for wall side table and 300mm for Island Table. Master Upright is available for the system .Sink is Available for 900mm height only, It should be made up thick high density and elastic poly propylene/SS with good resistance to organic solvents, Electrical Socket should be Provided along with table.

## D.SMART LCD BASED PHOTOCOLORIMETRY WORKSTATION

### Technical Specification

Smart Lab Workstation 6x4x3 with Sink and Chemical Storage Unit. The complete M.S. material of cabinet should be pre-treated (degreased, Zinc phosphate) and epoxy powder coated for better corrosion resistance. The thickness of powder coat should be 45-50 microns, which passes the test of Salt Spray for 1000 hours, It sMade out of 25 x 25 x 1.2 MM thick MS pipe with top made out of 15 MM thick steel grey Granite .There shall be Box arrangement both the side with 1 Shelf inside made out of 0.80 MM CRCA . There Shall be 1 No of Reagent Rack of 750 MM width with 4 nos of electrical socket and switch .All the metal Components shall be duly powder coated after necessary pre treatments .There shall be 1 nos of SS Basin with 1 nos PVC Taphould have a high temperature withstanding capacity with excellent electrical insulation properties, shutter front, Bottom panel, Top front, Drawer separator, shelf, Alignment channel is of 1.2mm, removable facility should be provided Back panel, Shutter cover, Fr. Rack strip, Top cover panel. Top unit should be Granite as per SEFA-2016 standard. There shall be Box arrangement both the side with 1 Shelf inside made out of 0.80 MM CRCA & Power Socket.

### Wavelength Range: 400-700 nm

Filters: Minimum Built in 8 Digital Filters

Filters Wavelength: 405nm,450nm,480nm,520nm,540nm,578nm,600,620nm,680nm,700nm.

Detector: Silicon Photo Diode

Light Source: Highly Accurate LED Source

Dimension: 275 x 187 x94mm (approx)

Power: 230 ± 10 V, 50 Hz

Accessories: Set of Test Tube- 5nos, Test Tube Holder: 1Nos Detector: Silicon Photo Diode, Zero Adjustment: Auto Zero

Accuracy: ±0.01 O.D., Stability: ±0.02 O.D./ Hour

Light Source: Highly Accurate Laser Source

Amplifier: Micro Controlled Based, Volume: 1ml Minimum

Dimension: L210xB160xH80 mm (Approx)

Power: 230±10% AC, 50Hz

PC Connectivity Cable- 1 Nos

The D-Frame and horizontal member is made of 1.6mm thick CRCA Pure Epoxy coated Mild Steel Optional- Reagent Shelf is of depth 150mm for wall side table and 300mm for Island Table. Master Upright is available for the system .Sink is Available for 900mm height only, It should be made up thick high density and elastic poly propylene/SS with good resistance to organic solvents, Electrical Socket should be Provided along with table.

For Analysis of above Experiments following Additional Chemicals & Consumables Required as per ANNEXURE-III

### ANNEXURE-III

	CONSUMABLES/CHEMICALS/GLASSWARES/OTHERS
1	Tissue Paper 12.5cm
2	Filter Paper 12.5cm
3	Ph Paper (Pkt)
4	Glucometer -Minimum sample, (0.5 microlitre) with Strips
5	Sphygonomanometer
6	Haemocytometer
7	Haemoglobinometer Sahil 's
8	Sprit Lamp (Brass)
9	Pipette Graduated 5ml

10	Pipette Graduated 10ml
11	Pipette Graduated 20ml
12	Measuring Flask-100ml
13	Chromatography Jar (25x25x12cm)
14	Watch Glass Small 8"
15	Measuring Cylinder-50ml
16	Petri dish 3"
17	Round Bottom Flask-250ml
18	Buchner Funnel 3"
19	Measuring Cylinder-500ml
20	Measuring Cylinder-1000ml
21	Test Tube (15x125mm)-10ml
22	Beaker Graduated -500ml
23	Wash Bottle-500ml
24	Dropper Glass with Latex Teat 6"
25	Glass Slide
26	Cover Slip Box (Square)
27	Beaker Graduated -100ml
28	Beaker Graduated -250ml
29	Micropipette
30	Conical Flask-500ml
31	Conical Flask-1000ml

**FINANCIAL BID**

SL No	Name of the Items with specification	Make & Model	Basic price Per unit FOR Destination (Excluding GST and Including Transportation and Handling, Insurance, Packaging etc.)	Qty	Taxable price Per unit	GST@%	Total Price Including GST
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
<b>Grand Total Price</b>							

**(Total Rupees in words.....)**

Price: - Total price should be inclusive of all taxes. Items quoted must be as per the specifications given in enclosed Annexure-I

**N.B: a. Separate Annexure-III to be attached for Each Department.**

**b. Alternative Make/Models strictly Prohibited.**

**c. Optional items Strictly prohibited, Each Experiment Should Complete in all respect.**

Signature & Seal of the supplier

Place:

Date:

## **SELF DECLARATION CUM UNDERTAKING**

It is certified that my Farm/ Agency/ Company has never been **black listed** by any of the Departments/ Autonomous Institutions/ Universities/ Public Sector Undertakings of the Government of India or Government of Odisha or any other State Government or reputed educational institutions and no criminal case is pending against the said Farm/ Agency/ Company as on date\_\_\_\_\_.

Signature of the Bidder:

Name of the Authorized Signatory:

Name of the Farm/Agency/Company:

Seal of the Farm/Agency/Company:

Place:

Date:

## **GUARANTEE / WARRANTY**

I/We hereby declare that the equipments and other articles supplied to the purchaser under this contract shall be of the best quality and workmanship and are strictly in accordance with the specification and particulars contained/mentioned in the clause hereof and I/we hereby guarantee that the said equipment and other articles conform to the description and quality aforesaid.

The purchaser will be entitled to reject the said equipment and other articles as may be discovered not to confirm to the said description and quality. On such rejection the equipment and other articles will be returned in own risk and all the provision herein contained relating to rejection thereof shall apply. I/we shall, if called upon to do so, replace within a period of 14 days or such further period that be extended from time to time by the purchase at his discretion, and an application made thereof by us, the equipment and other articles as are rejected by the purchaser and in such an event the above mentioned Warranty shall apply to the equipment and/or other articles replaced from the date of replacement thereof, otherwise the tenderer shall pay to the purchaser such damages as may arise by reason of therein contained without prejudice to any other right of the purchaser in that behalf.

The equipment being offered is latest model and that spares for the equipments will be available for a period of at least five years after its supply to the purchaser.

The Guarantee/ Warranty shall be for a period of at least 12 months from the date of satisfactory installation and handing over the equipment and of works conducted there with covered under the contract in working order. During the guarantee period the replacement of any part(s) of the equipment or rectification of defect due to manufacturing of works will be free of cost. If the down time exceeds seven consecutive days at any one time, the guarantee period will be extended beyond aforesaid 12 months by a duration equal to the total down time during the period of warranty.

Signature with seal of the tenderer

Date:

Place:

**MODEL BANK GUARANTEE FORMAT FOR PAYMENT**

This deed of Guarantee made on ..... day of .....20..... Between ..... Bank a Banking Company incorporated under the Banking Companies (hereinafter called the Guarantor) of the one part and the **Principal of Khariar Autonomous College** (hereinafter called the „Principal“) of the other part.

WITNESS AS FOLLOWS:-

1. In consideration of the **Principal of Khariar Autonomous College** (hereinafter called the Principal) having agreed to advance a sum of Rs.....(.....) to (name and address of the supplier) hereinafter called "the supplier") against supplies of items concerned by and under the terms and conditions upon agreement dated made between supplier and the **Principal of Khariar Autonomous College** on the production of a bank guarantee for Rs..... (.....) we hereby guarantee the payment of sums of money that may be due to the Principal on account .

2. We hereby further agree that we are aware of all the terms and conditions of the said contract and shall abide by the decision of the **Principal, Khariar Autonomous College** as to whether there has been any breach of the terms and conditions of the said contract and as to whether the supplier is liable to pay any sum as so determined.

3. Any demand made us for payment of any sum in discharge of this guarantee shall be conclusive proof of the fact that there has been a breach of said contract by the suppliers which warrants the enforcement of this guarantee and is binding on the Bank without prejudice to the claims and counter claims of the parties in the proper court of law.

4. The guarantee shall continue to be enforceable till all dues of the principal under or virtue of the said contract have been fully and paid and its claims are satisfied or discharged or till the ..... college certifies the terms and conditions of the said contract have been fully and properly carried out by the said suppliers and accordingly discharges the guarantee subject however that the Principal has no right under this bond after the expiry of ..... from the date of its execution, unless the said Principal choose to further extend the said period or extended period of guarantee by giving reasonable notice in writing to the bank on account of any special circumstances of which the principal shall be the sole judge.

This guarantee shall be valid until the ..... Day of .....20.....

5. Our \_\_\_\_\_ branch at \_\_\_\_\_ (Name & address of the \_\_\_\_\_) is liable to pay the guaranteed amount depending on the filling of claim and any part thereof under this Bank Guarantee only and only if you serve upon us at our \_\_\_\_\_ branch a written claim or demand and received by us at our \_\_\_\_\_ branch on or before Dt \_\_\_\_\_ otherwise bank shall be discharged of all liabilities under this guarantee thereafter.

(Signature of the authorized officer of the Bank) .....Name and designation of the officer .....

Seal, name & address of the Bank and address of the Branch \*Preferably at the headquarters of the authority competent to sanction the expenditure for purchase of goods or at the concerned district headquarters or the State headquarters.

Signature

**LETTER OF WILLINGNESS**

To

**The Principal,  
Khariar Autonomous College,  
Dist:Nuapada,odisha,pin:766107**

Sub: Submission of willingness certificate to supply/ install (name of the item/items) at your college premise.

Sir,

I am to inform you that my farm (name of the farm with address) is ready to **supply/ install (name of the items)** within the specified period of receipt of work order from the college, if my farm is selected as eligible bidder during the selection of tender. I am willing to accept all the clauses of Bid evaluation criteria, general terms and compliance to the scope of work requirement as mentioned in the Tender form. If my farm fails to supply and install the required items in the quoted price, my EMD/ performance security will be forfeited.

Yours faithfully,

Authorized Signatory of the farm with Seal & Date