OFFICE OF THE REGISTRAR
MADHABDEV UNIVERSITY
Narayanpur, PO- Dikrong, Lakhimpur, Assam
Email: universitymadhabdev@gmail.com
Website: www.madhabdevuniversity.ac.in

TENDER DOCUMENT (Includes both Technical & Financial bid documents)

Tender No-MDU/SOPD/TENDER/20/3 Dated: 24.12.2020

Name of Works: Supply of Departmental Laboratory Equipments for Departments

Issued To:

M/s………………………………………………………………………….

………………………………………………………………………………

………………………………………………………………………………

Ph/Mb No…………………………………………………………………

Registrar i/c
Madhabdev University

Table of Contents:

1. Tender Notification
2. Eligibility criteria
3. Terms and Conditions
4. Instruction for submission of Tenders
5. Earnest money Deposit
6. Bid Evaluation Criteria
7. Declaration

PART-A (Technical Bid)
PART-B (Financial Bid)

MADHABDEV UNIVERSITY

Narayanpur, PO: Dikrong, Lakhimpur, Assam, Pin-784164
website: madhabdevuniversity.ac.in
Email: universitymadhabdev@gmail.com

Tender Notification

Sealed quotations are invited affixing court fees stamp of Rs. 8.25 (Rupees Eight and twenty five paisa only) are invited from reputed firms/suppliers under SOPD for Supply of Departmental Laboratory Equipments. Visit University website **www.madhabdevuniversity.ac.in** for details

Particulars	Details
Nature of work	Supply of Departmental Laboratory Equipments
Details of Contact Persons for Clarification/quarries	Dr. Sarat Hazarika Registrar i/c Madhabdev University Narayanpur, Lakhimpur, Assam Mobile No-9954202020
Mode of Tendering	1. Details Terms and Conditions can be obtained /downloaded from the University website www.madhabdevuniversity.ac.in. Hard copy can be obtained from College Office during the office hours 2. Tenders have to be submitted in the University during the office hours 3. The bidders have to submit the sealed tenders by affixing non refundable Court fee stamps of Rs. 8.25 (Eight rupees and twenty five paisa only)
Cost of Tender documents	Rs.1000/-
No. of Covers	1.Technical Bid **Annexure I** 2. Financial Bid **Annexure III**
Items included in Price Schedule (**Annexure-II)**	Supply of Departmental Laboratory Equipments
Token Earnest Money Deposited (EMD) (Refundable) Items included in Price Schedule (**Annexure-II)**	Token Earnest Money Deposited (EMD) (Refundable) 2%
Date of Publishing Tender	24.12.2020
Website for obtaining / Downloading Tender Documents Etc	www.madhabdevuniversity.ac.in.
Starting date and time of Bid submission	24.12.2020
Closing date and time of Bid submission	Up to 14.00 hours of 02.01.2021
Opening date and time of Technical Bid and Financial Bid	04.01.2021 at 11:00 hours
Address where Tenders are to be Submitted	Registrar i/c, Madhabdev University, Narayanpur, Lakhimpur, Assam
Venue for opening Technical and Financial Bid	Office of the Registrar, Madhabdev University, Narayanpur, Lakhimpur, Assam

1. ELIGIBILITY:

1. The Vendors should have the experience of supply of laboratory equipments/Computers/ Sports Equipments to colleges/universities, and should have the experience of supply of any one of the above item to any institutions at least last three years.
2. Application for tender must include attested certificate copies of valid GST, Income Tax, Professional Tax, Trade License, Pan Card and credential for works done.
3. No quoted price above the cost of work mentioned will be accepted.
4. No extra cost will be borne by the college.
5. The rate should be quoted both in figures as well as in words.
6. No extension of time will be allowed.
7. Payment will be made in favour of the selected bidder as per Govt guidelines on successful completion of the works and observation of necessary formalities as the authority deems fit from time to time as per Govt norms.
8. Since the entire work will be financed from SOPD, payment will be made as per Govt guideline
9. The successful bidder has to start of work within five days from the date of issue of work order.
10. Acceptance of the lowest tender is not obligatory and the undersigned reserves the right to accept or reject any or all the tenders without assigning any reason.
11. The eligible Bidders have to face the Purchase Committee in order to negotiate and know the details of the proposed supply work.
12. Tender papers have to be collected from office of the undersigned/downloaded from website within stipulated dates as mentioned below on showing necessary documents as mentioned and payment of non-refundable tender paper fees in the form of DD in favour of The Registrar i/c, Madhabdev University payable at Narayanpur, Lakhimpur, Assam
13. Token earnest money at the rate of 2% percent of total amount has to be deposited in the form of DD in favour of Registrar i/c, Madhabdev University payable at Narayanpur, Lakhimpur.
14. Eligible bidders may be present at the time of opening of financial bid.
15. The firms/suppliers are requested to submit copies of the following documents along with the Technical Bid, failing which their Bids shall be rejected and shall not be further considered:-
    a) Copy of Earnest Money Deposit (EMD)
    b) Copy of PAN/GIR card, GST registration certificate
    c) Copy of work experience of similar work during last three years
    d) Original Tender document duly signed with seal of the farm on each page in token of acceptance of the terms and conditions of the tender.
16. Schedule
    (a) Date of issuing tender : **24.12.2020**
    (b) Last date of submission of sealed tender : **Up to 14.00 hours of 02.01.2021**
    Tentative Date & time of opening tender: (i) Technical bid: **04.01.2021 at 11:00 hours**
                                   (ii) Financial bid**: 04.01.2021 at 14:00 hours**

Note : In case the said date/s, happen to be a holiday for any reason, the activity will be held on the immediate next working day at the same time & place unless otherwise notified through suitable media to all concerned. Selection of the agency will be at the sole discretion of the competent authority of the Madhabdev University who reserves its right to accept or reject any or all the proposals without assigning any reasons. The tender documents for the above work can be obtained from the Office of the Registrar, Madhabdev University, Narayanpur, District - Lakhimpur, or can also be downloaded from **www.madhabdevuniversity.ac.in**

Sd/- Dr. Sarat Hazarika
Registrar i/c
Madhabdev University

2. **TERMS AND CONDITIONS**:
   1. The list of equipments are to be submitted in hard and soft copies (in excel format) mentioning Sl.No, Name, Prices and offered discounts against each items. Bidders must submit on prescribed Annexures only.
   2. The contract is to commence from the date of award of contract to the firm and shall continue for the period of six months, unless it is curtailed or terminated by Madhabdev University owing to deficiency of service or supply of substandard quality of materials.
   3. **Submission of OEM authorization is must for every product of Laboratory equipment, Computers and Sports equipment**.
   4. The contract shall automatically expire after six months from commencements of the contract unless extended further by the mutual consent of contracting firm and Madhabdev University.
   5. The contract may be extended on the same terms and conditions or with some additions/ deletions/ modifications and on satisfactory performance, for a further period of three months with mutual consent.
   6. The contracting firm shall not be allowed to transfer, assign, pledge or sub-contracts rights and liabilities under this contract to any other company/ firm/ agency etc.
   7. The contracting firm will be bound by the details furnished by the firm to Madhabdev University, while submitting the tender or at subsequent stage. In case, any of such documents furnished by the firm is found to be false at any stage, it would be deemed to be a breach of terms of contract making the firm liable for legal action besides termination of contract.
   8. Financial bids of only those firms that are technically qualified shall be evaluated.
   9. Madhabdev University reserves the right to terminate the contract during initial period after giving a week's notice to the firm.
   10. All expenses for sending the items supplied to Madhabdev University, Narayanpur, District - Lakhimpur, Pin 784164, Assam should be borne by the firm.
   11. The rates quoted shall remain same during the rate contract period and no request for any increase in the rates shall be entertained during the period of the contract
   12. The owner / supplier/ firm should be available on his/ her own direct telephone (office as well as residence) and also on mobile phone so that he/ she may be contacted immediately in emergency cases.
   13. Before award of contract, all original documents will be checked by the authority of Madhabdev University and at that time attested photo copies are required to be furnished.
   14. Madhabdev University shall not be responsible for any financial loss or other injuries to any person deployed by the contracting firm in the course of their performing the duties to Madhabdev University in connection with the supply of items.
   15. In case of breach of contract by the vendor, Madhabdev University shall have the authority to cancel/ terminate the contract, besides forfeiting the Security Deposits.
   16. It may specifically be mentioned whether quotation is strictly as per tender specifications/ conditions. Deviation in any form will not be accepted.
   17. Madhabdev University reserves the right to accept or reject any bid or cancel the tender proceeding without assigning any reason whatsoever. Further Madhabdev University reserve the right to purchase or not to purchase any item listed in the price schedules.
   18. The contract shall be subject to Lakhimpur Jurisdiction. This document and the contract or job award letter issued as a result of the tender process shall be interpreted in terms of Indian loss.
   19. All disputes arising out of this contract shall be settled amicably by Madhabdev University and the contractor. In the event of failure to reach amicable settlement, the change shall be settled by an Arbitrator appointed by Madhabdev University as per the provisions contained in Arbitration and Conciliations Act 1956.
   20. The terms and conditions of set by the University will be followed and implemented strictly.
   21. The terms and conditions of Public Financial Management System (PFMS) will be followed in case of all financial transaction issues if applicable.

22. The successful Bidder (s) must sign an agreement with the Authority of the Madhabdev University regarding the contract and supply of materials as well.
23. The Contractor will be responsible for supply/installation/refilling/maintenance of all such /chemicals/items/equipments/machineries, etc., used in various facilities of the university

3. INSTRUCTIONS FOR SUBMISSION OF TENDERS:

1. The Contractors are required to submit two separate Bids i.e. Technical and Financial as per prescribed proforma. The two bids should be submitted in two separately sealed envelopes superscribed 'TECHNICAL BID FOR SUPPLYING LABORATORY EQUIPMENTS IN MADHABDEV UNIVERSITY' and "FINANCIAL BID FOR SUPPLYING LABORATORY EQUIPMENTS MADHABDEV UNIVERSITY". Both sealed envelopes should be put in a third sealed envelope superscribed 'TENDER FOR SUPPLYING LABORATORY EQUIPMENTS IN MADHABDEV UNIVERSITY, NARAYANPUR, LAKHIMPUR,PIN 784164 ASSAM'.
2. The financial bid of only those Firms who qualify in technical bid evaluation by the concerned committee shall be opened. The financial bids of all those Contractors who have failed to qualify in the technical bid will not be opened under any circumstances.
3. The declaration in the prescribed proforma should be enclosed with the Technical Bid.
4. The Technical Bid should be accompanied by an Earnest Money Deposit (EMD) as notified elsewhere in the document in the form of DD/Bankers' Cheque for Earnest Money Deposit drawn on/ issued by any nationalized Bank drawn in favour of 'Registrar i/c, Madhabdev University' payable at Narayanpur, Lakhimpur, Assam
5. The Bidders can submit the tender either by post or by submitting in the box provided in the college in the following address-
   To
   The Registrar i/c
   Madhabdev University
   Narayanpur, PO: Dikrong, Lakhimpur
   Pin-784164, Assam
6. The earnest money shall be refunded to all the unsuccessful Contractors, without any interest after finalization of the contract. EMD shall be refunded to the successful Contractor on receipt of performance security deposit. No interest is payable on the EMD to either the successful Contractor or the unsuccessful Contractor. Exemption from payment of EMD is applicable as per the existing law if accompanied by the relevant orders/instructions issued by the appropriate authorities.
7. All entries in the tender from should be legible and filled clearly. Any overwriting or cutting which is unavoidable shall be signed by the authorized signatory. Any alterations without authentication will be treated as a 'NIL' entry.
8. The Contractor may quote for all or any facilities. However, tender in respect of each facility should be complete in all respects failing which the bid shall be considered non-responsive.
9. Tender incomplete in any form will be rejected outright. Conditional tenders will also be rejected outright.
10. The closing date and time for receipt of tenders will be as detailed elsewhere in this tender document.
11. The technical bid shall be opened at a date & time as specified elsewhere in this tender document in presence of the authorized representatives of the Contractor, who wish to be present at that time. All the technical bids will be scrutinized, relevant documents checked for their authenticity and the Contractor whose technical tenders are accepted will participate in the financial bids on date & time as stipulated elsewhere in this tender document.
12. In case the successful bidder declines the offer of contract, for whatsoever reasons(s), his EMD will be forfeited.
13. The Contractor shall enter into a formal contract with the College within three days from the date of receipt of intimation of their selection. They shall further get prior approval of the draft copy of the agreement from the college.

14. Each page of the tender document should be signed and stamped by authorized representative of the contractor as a token of acceptance of the terms and conditions laid down by the college.
15. The competent authority of college reserves the right to withdraw/relax any of the terms and conditions mentioned above, under such circumstances the Contractor will be given adequate time to take the changes into account.
16. The competent authority of the college reserves it's right to reject all or any tender in whole, or in part or cancel the entire tender process, without assigning any reason thereof.

4. EARNEST MONEY DEPOSITED:

Technical Bid must be accompanied by DD/Bankers' Cheque for Earnest Money Deposit drawn on any Nationalized Bank in favour of The Registrar i/c, Madhabdev University. EMD shall be valid for a maximum period of 90 days from the closing date (original) of the tender. Quotation submitted without EMD shall be summarily rejected.

The DD/Bankers' Cheque in physical form duly sealed in envelop superscribed with "DD towards EMD and Tender Document cost for the tender No…………….for supplying LABORATORY EQUIPMENTS IN MADHABDEV UNIVERSITY" shall be dispatched/ submitted at the OFFICE OF THE REGISTRAR, Madhabdev University at the address mentioned below so as to reach on or before the stipulated date.

> To
> The Registrar
> Madhabdev University
> Narayanpur, PO: Dikrong, Lakhimpur
> Pin-784164, Assam

5. BID EVALUATION CRITERIA:

1. In the first instance the Technical Bids shall be opened by the Authority of Madhabdev University in the presence of representative of Bidders, if available.
2. The date and time of the Technical Bids and Financial Bids is given for all.
3. The Bidders may depute their representatives for the opening of the Bids.
4. The Technical Bids will then be evaluated by the Madhabdev University internally.
5. Once the Technical Bids are accepted, the Financial Bids of the vendors (whose Technical Bids have been accepted) shall be opened.
6. If any vendors so desires, it may depute its representative for Financial Bid opening event.
7. The decision of the Registrar i/c, Madhabdev University shall be final and binding.
8. The terms and conditions of Govt of Assam will be followed and implemented.

DECLARATION

I…………………………………………………………………………….. Son/daughter of Shri…………………………………………………......................…Proprietor/Partner/Director/Authorized Signatory of………………………………………………….. Am Competent to sign this declaration and execute this tenders document.

 I have carefully read and understood all the terms and conditions of the tender and hereby convey my acceptance of the same.

 The information/documents furnished along with the above application are true and authentic to the best of my knowledge and belief. I/We/ am/are well aware of the fact that furnishing of any false information/fabricated document would lead to rejection of my tender at any stage, besides liabilities towards prosecution under appropriate law.

Date: Signature of authorized person

Place: Full Name:

                 (Company's Seal)

N.B.: The above declaration, duly signed and sealed by the authorized signatory of the company should be enclosed with Technical tender

PART-A: TECHNICAL BID

TENDER DOCUMENT

Name of Work: Supply of Laboratory Equipments to Madhabdev University
Issued to:

M/S…………………………………………………………………………………………………
……………………………………………………………………………………………………..
Ph/Mb No………………………………………………………………………….

<div align="center">

Registrar i/c
Madhabdev University

</div>

Brief description of the firm

  1. Sl. No.   :
  2. Name of the Firms   :
  3. Name of owner/Partner/Directors   :
  4. Full particulars of office   :
     (a) Address   :
     (b) Telephone No.   :
     (c) Fax No.   :
     (d) E-mail ID   :
  5. Full particulars of the bankers of the firm
     (a) Name of the Bank and Branch   :
     (b) Account type   :
     (c) Account No.   :
     (d) IFSC   :
  6. Registration details : (Self attested copes of all Certificates/Licenses/Permits/Registrations etc.
     should be enclosed failing which the application is liable to be rejected outright)
     a. PAN/GIR No.   :
     b. GST Registration No   :
     c. Service tax registration No.   :
     d. EPF registration No.   :
     e. ESI registration No.   :
     f. Labour License issued under the Contract Labour Act., 1970 :
  7. Details of Earnest Money Deposited
     a. Amount   :
     b. DD No. and Date   :
     c. Drawn on bank   :
     d. Valid up   :
     The above format may be used to provide requisite details.
Additional information, if any.

Date :   Signature of authorized person
Place :   Full Name :
                                                        (Company's Seal

List of Laboratory Equipments For Madhabdev University

Department of Botany

Sl. No.	Name of the items	Brand/Types
1	Herbarium Cabinet	----------
2	Aquaguard (Water Purifiers)	Kent
3	Compound Microscope	OLYMPUS
4	Binocular Stereo Zoom Microscope	-------
5	Oil Immersion Microscope	OLYMPUS
6	Simple Microscope	10x & 20x
7	Digital weighing machine	100 g capacity
8	Digital weighing machine	1 kg capacity
9	Chromatography Chamber	-------
10	Soil water Analysis kit	----------
11	Micro-Centrifuge Tube	1.5 ml
12	Autoclave	300x500 (40 lit)
13	Electrophoresis Equipments	-------
14	Muffle Furnace	100x100x225
15	Auxanometer	-----
16	Farmer Potometer	------
17	Ganong's Potometer	------
18	Respirometer	-------
19	Auto Conductivity Meter	------
20	Calorimeter photoelectric	DIGITAL RH 133
21	Hot Air Oven	300x300x300 (28 lit)
22	Centrifuge	6 tubes x 15 ml
23	Rotary Microtome	Spencer type
24	Inoculation Chamber	900x600
25	Spectrophotometer	WPA S800
26	Digital pH meter	RH 134
27	Digital thermometer	--------
28	Digital TDS meter	HANNA
29	Secchi Disk	-------
30	Fossil Specimens	Different types of plant fossil
31	Genetics & Molecular Models	DNA, RNA,CHROMOSOMES, PROTEINS, LIPIDS
32	Wilmot's Bubbler	For measuring the ratio of photosynthesis
33	Camera Lucida	Prism type
34	Transpiration/Absorption Apparatus	Corning Glass
35	Ocular & Vernier Scale	For Camera Lucida
36	Water Bath	8 lit capacity
37	Bacteriological Incubator	14x14x14
38	Water Distillation Unit	2.5 lit/hr capacity

39	Test Tube	5 ml capacity 10 ml capacity
40	Test Tube Holder	---------
41	Test Tube Strand	---------
42	Dropping Bottle	100 ml capacity 50 ml capacity
43	Watch Glass	--------
44	Petri dish	---------
45	Collection Bottles	Different size
46	Beaker	50 ml capacity 100 ml capacity 500 ml capacity 1 lit. capacity
47	Conical Flask	50 ml capacity 100 ml capacity 500 ml capacity 1 lit. capacity
48	Slide	-----
49	Cover slide (Round & Rectangle)	-----
50	Measuring Cylinder	1 lit 100 ml 50 ml
51	Pipettes	2ml 5ml 10 ml
52	Funnels	Small Medium Large
53	Reagents	Fast Green powder Safranine powder Aniline blue Acetocarmine
54	Hydrochloric Acid	-----
55	Sulfuric Acid	-----
56	Formic Acid	-----
57	Ethyl Alcohol	----
58	Methyl Alcohol	----
59	Glycerine	-----
60	Lectophenol	-----
61	Cotton Blue	-----
62	UV Chamber	

Department of Chemistry

SL. NO.	APPARATUS & INSTRUMENTS
1	Thermostat
2	Colorimeter
3	pH meter
4	Reflectometer
5	Melting point determination apparatus
6	Apparatus for Column Chromatography Set
7	Desiccator
8	Centrifuge machine
9	TLC Chromatography Set
10	Calorimeter for determination of heat capacity
11	Suction pump
12	Conductometer
13	Apparatus for determination of Critical Solution temperature and Composition of Phenol-Water system
14	Apparatus for molar mass determination (Thiele's Tube)
15	Polarimeter to study the rate Constant of Sucrose etc.
16	Semi-micro test tube
17	Spot test plate
18	Distilled Water Set
19	Round bottle with cork
20	Sintered Glass Crucible
21	Fractional Distillation Set
22	Silica Crucible and Cover
23	Magnetic Stirrer
24	Sonicator
25	Water Bath
26	Shaking Water Bath
27	Muffle Furnace
28	Vacuum Pump
29	Oil Bath
30	Condenser
31	Micro Pipette (10-100 MicroL, 100-1000 MicroL
32	Separating Funnel
33	Rotor Evaporator
34	FT-IR
35	Uv-Visible Spectrometer
36	Volumetric Flask (250,500,1000 ml)
37	Ubbelohde Viscometer
38	Burette
39	Pipette

Department of Zoology

SL. NO.	APPARATUS & INSTRUMENTS
1	UV-Visible spectrophotometer
2	Kymograph
3	Accessories for kymograph
4	Blood cell counter (8 keys)
5	Haemocytometer (complete with German chamber)
6	Vernier Calliper
7	Digital thermometer
8	Pocket thermometer
9	Burette clamp (double)
10	Spirit lamp (Brass)
11	Paraffin embedding bath
12	All Glass Double Distillation Unit
13	Distillation Appartus Power Supply (DAPS)
14	Fluorescence microscope
15	Rectangular centrifuge machine (digital)
16	Dessicator Vacuum (300 mm)
17	Motorless magnetic stirrer
18	Magnetic stirrer bar 6x10mm
19	Magnetic stirrer bar 8x14mm
20	Magnetic stirrer bar 8x30mm
21	Magnetic stirrer bar 8x50mm
22	Magnetic retriever 30 cm
23	Hot plate rectangular (300x455 mm) Aluminium digital
24	Sterilizer pressure cooker (24 lit)
25	Water bath rectangular (double wall) RH166
26	Inculabor bacteriological (RH177) 18x18x18in
27	Rotary shaker (RH184)
28	Haemometer
29	Karl Fischer Titrimeter
30	Electronic Analytical Balance
31	TDS & Conductivity meter
32	Laboratory automatic Morter
33	Laboratory blender
34	Nikon d7200 wildlife photography camera
35	Glass slide cabinet
38	Histological slides
39	Endocrinological slides
40	Embryological slides
41	Cytological slides
42	Slides of parasitic protozoans and helminthes
43	Zoological museum specimen
44	Secchi disc
45	Plankton net
46	Burette (Class A) 25 ml
47	Burette (Class A) 50 ml
48	Cylinder Graduated, Stoppered, Class A (10 ml)
49	Cylinder Graduated, Stoppered, Class A (25 ml)
50	Cylinders Graduated, Stoppered, Class A (50 ml)

51	Cylinders Graduated, Pour out, Class A (100 ml)
52	Cylinders Graduated, Pour out, Class A (250 ml)
53	Cylinders Graduated, Pour out, Class A (500 ml)
54	Volumetric flask Class A 100 ml
55	Volumetric flask Class A 250 ml
56	Volumetric flask Class A 500 ml
57	Volumetric flask Class A 100 ml amber
58	Volumetric flask Class A 250 ml amber
59	Pipette 2 ml Class A
60	Pipette 5 ml Class A
61	Pipette 10 ml Class A
62	Pipette 25 ml Class A
63	Pipette 1 ml (volumetric) Class A
64	Pipette 2 ml (volumetric) Class A
65	Pipette 5 ml (volumetric) Class A
66	Pipette 10 ml (volumetric) Class A
67	Pipette 20 ml (volumetric) Class A
68	Buchner filter Grade 1, 200 ml
69	B.O.D. Bottle 300 ml
70	Reagent Bottle 100 ml
71	Reagent Bottle 250 ml
72	Reagent Bottle 500 ml

Department of Physics

Sl No.	Name of Instruments/ Practical	Specification
1	Vernier Calipers	Analog and Digital, Different constant
2	Screw Gauge	Analog and Digital, Different constant
3	Measurement of field strength B and its variation in a solenoid (determine dB/dx)	complete set-up
4	To study Lissajous Figures CRO.	CRO
5	To determine Mechanical Equivalent of Heat, J, by Callender and Barne"s constant flow method.	complete set-up
6	To determine the Coefficient of Thermal Conductivity of Cu by Searle"s Apparatus.	complete set-up
7	To determine the Coefficient of Thermal Conductivity of Cu by Angstrom"s Method.	complete set-up
8	To determine the Coefficient of Thermal Conductivity of a bad conductor by Lee and Charlton"s disc method.	complete set-up
9	To determine the Temperature Coefficient of Resistance by Platinum Resistance Thermometer (PRT).	complete set-up
10	To design a switch (NOT gate) using a transistor.	complete set-up

11	To verify and design AND, OR, NOT and XOR gates using NAND gates.	IC, breadboard, wire
12	To convert a Boolean expression into logic circuit and design it using logic gate ICs.	IC, breadboard, wire
13	Half Adder, Full Adder and 4-bit binary Adder.	IC, breadboard, wire
14	To design a combinational logic system for a specified Truth Table.	
15	Half Subtractor, Full Subtractor, Adder-Subtractor using Full Adder I.C.	
16	To build Flip-Flop (RS, Clocked RS, D-type and JK) circuits using NAND gates.	
17	To build JK Master-slave flip-flop using Flip-Flop ICs	
18	To make a 4-bit Shift Register (serial and parallel) using D-type/JK Flip-Flop,IC	
19	To build a 4-bit Counter using D-type/JK Flip-Flop ICs and study timing diagram.	
20	To design an astable multivibrator of given specifications using 555 Timer.	
21	To determine the value of e/m by (a) Magnetic focusing or (b) Bar magnet.	complete set-up
22	To setup the Millikan oil drop apparatus and determine the charge of an electron.	complete set-up
23	To show the tunneling effect in tunnel diode using I-V characteristics.	complete set-up
24	To determine the wavelength of laser source using diffraction of single/double slits.	Advanced optical bench with source
25	To study the V-I characteristics of a Zener diode and its use as voltage regulator.	complete set-up
26	To design a CE transistor amplifier of a given gain (mid-gain) using voltage divider bias.	complete set-up
27	To study the frequency response of voltage gain of a RC-coupled transistor amplifier.	complete set-up
28	To design a Wien bridge oscillator for given frequency using an op-amp.	complete set-up
29	To design a phase shift oscillator of given specifications using BJT.	complete set-up
30	To design a digital to analog converter (DAC) of given specifications.	complete set-up
31	To study the analog to digital convertor (ADC) IC.	complete set-up
32	To design an inverting amplifier using Op-amp (741,351) for dc voltage of given gain	
33	To design inverting amplifier using Op-amp (741,351) and study its frequency response	
34	To design non-inverting amplifier using Op-amp (741,351) & study its frequency response	
35	To study the zero-crossing detector and comparator	
36	Study of Zeeman effect: with external magnetic field; Hyperfine splitting	complete set-up

37	Measurement of susceptibility of paramagnetic solution (Quinck`s Tube Method)	complete set-up
38	To measure the Magnetic susceptibility of Solids.	complete set-up
39	To measure the Dielectric Constant of a dielectric Materials with frequency	complete set-up
40	To determine the complex dielectric constant and plasma frequency of metal using Surface Plasmon resonance (SPR)	complete set-up
41	To determine the refractive index of a dielectric layer using SPR	complete set-up
42	To draw the BH curve of Fe using Solenoid & determine energy loss from hysteresis.	complete set-up
43	To measure the resistivity of a semiconductor (Ge) with temperature by fourprobe method (room temperature to 150 oC) and to determine its band gap.	four probe & two probe method, complete set-up
44	To analyze elliptically polarized Light by using a Babinet"s compensator.	complete set-up
45	To study the reflection, refraction of microwaves	complete set-up
46	To verify the Stefan`s law of radiation and to determine Stefan"s constant.	complete set-up
47	To determine the Boltzmann constant using V-I characteristics of PN junction diode.	complete set-up
48	Surface Plasmon study of metal nano particles by UV-Visible spectrophotometer.	complete set-up
49	Prepare a disc of ceramic of a compound, pressing and sintering, and study its XRD.	agate-morter, Chemical balance (0.01g), hydraulic press, Muffle furnance (1200 C)
50	XRD Analyzing Software, full proof/PDA	
51	To prepare composite of CNTs with other materials.	
52	Experiments on Semiconductor Sources and Detectors:	
53	Tool Box	
54	Drier	
55	Vacuum Cleaner	
56	Lens & prism cleaner	
57	Telescope	
58	Thermometer	Different least count
59	Fractional Resistance Boxes	
60	V-I characteristics of LED b) Study the characteristic of solid state laser c) Study the characteristics of LDR d) Photovoltaic cell e) Characteristic of IR sensor	
61	0-5 volt dc power supply	
62	Frequency genertor 1Hz to 100KHz	

63	LCR meter (1MHz)	
64	Temperature controller	
65	Thermocouple (High temperature)	
66	Bread board	
67	Connection wire (single string)	
68	Potentiometer	
69	Digital Storage Oscilloscope (BW-300 MHZ), 4 Channels	
70	Origin Lab. Software, Latest Version	

Department of Education

Sl. No	Name of the apparatus
1	Tachistoscope
2	Rorschach Ink-blot card(10)
3	Punch board Maze ox
4	Mirror Drawing Apparatus (electrical)
5	Memory Drum
6	TAT picture card (30)
7	Alexander Pass Along Test
8	Koh's Block Design Test
9	Wechsler Adult Intelligence Test
10	Differential Aptitude Test(language usage, verbal reasoning, numerical ability)
11	Child Apperception Test
12	Extroversion Introversion Inventory(for HS, UG, PG students)
13	Sinha Anxiety Test
14	Achievement Motivation Scale
15	Adjustment Inventory

PART-B: FINANCIAL BIDS

*Price Schedule: A (**Supply of Laboratory Equipments**)*

Sl. No	Items Name/ Description	Brand with Model	Quantity	Unit Rate	Total Cost	Discount	Others (if any)	Actual Cost
1	List enclosed in Annexure II							

Signature of the authorised signatory with seal of the tendering firm/company/agency

Date: Signature

Place: Full name

                                                         Designation & Seal

                                                         Address: