



COTTON UNIVERSITY

Panbazar, Guwahati-781001, Assam, India

cottonuniversity.ac.in :: 0361-2601100/2733530 :: registrar@cottonuniversity.ac.in

Notice Inviting Bids

" NIB No. CU/S&P/2021/03 Dt. August 2, 2021 "

Bids in sealed cover are invited from manufacturers or their authorized dealers/suppliers/vendors in double-bid (techno-commercial and financial) system with respect to procurement of Lab Apparatus and Items for Department of Physics, Cotton University.

The bidding document pertaining to this notice, along with the requisite ICICI Bank Challan- 'FEE CODE 011' which is meant for payment of a processing fee {non-refundable} worth INR 500/-, must be downloaded from the University's website i.e. www.cottonuniversity.ac.in. The sealed cover must be super-scribed as "Procurement of Lab Apparatus and Items for Department of Physics, Cotton University :: NIB No. CU/S&P/2021/03 Dt. August 2, 2021" and addressed to "The Registrar, Cotton University, Guwahati, PIN-781001, Assam". The sealed cover containing the bid must be submitted during office hours in the drop-box arranged for the purpose on or before 3:00 P.M. of 23rd August, 2021. Bid opening may be done on the following working day at 11:00 A.M. which the bidders may attend.

Diganta Kumar Das

(Prof. Diganta Kumar Das)
Registrar

Memo No. CU/S&P/2021/11/ 5223 - 29

Dated 2nd 8/2021

Copy for information and necessary action to:

1. The P.S. to the Vice Chancellor, Cotton University
2. The Head, Department of Physics, Cotton University
3. The Finance Officer, Cotton University
4. The Systems Manager, Cotton University; he is requested to arrange for uploading/posting of **this bidding document** in the University's website
5. The Director, Directorate of Information and Public Relations, Government of Assam; he is requested to arrange for publication of the abstract ad (soft copy enclosed) of this notice in the immediately next one(1) issue of 'The Times of India', 'The Assam Tribune' and 'Amar Asom', as well as submit the invoice in triplicate format for claiming release of payment against the same
6. The University's notice board
7. The office file concerned

Diganta Kumar Das

(Prof. Diganta Kumar Das)
Registrar



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1. Terms and Conditions:

The following terms and conditions, which are the minimum criteria for this bid, shall apply herein:-

- 1.1. The sealed cover must be submitted in **two separate, sealed sub-envelopes** clearly super-scribed as:
 - i. **'Techno-commercial Bid'**, consisting of documents, testimonials, etc. pertaining to all technical specifications/ details of item(s) in addition to commercial terms and conditions as well as other requisite compliances; and
 - ii. **'Financial Bid'**, indicating item-wise per unit base rate(s)/ price(s)/ value(s) for the item(s) listed in the Techno-commercial Bid.
- 1.2. The **two separate, sealed sub-envelopes** mentioned in Clause 1.1 are required to be placed inside a **bigger sealed envelope** clearly super-scribed on the top of the same as "**Procurement of Lab Apparatus and Items for Department of Physics, Cotton University :: NIB No. CU/S&P/2021/03 Dt. August 2, 2021**". The name and address of the bidder along with valid contact number(s) must be mentioned on each of the envelopes. The bigger sealed envelope which is to be addressed to "**The Registrar, Cotton University, Guwahati, PIN-781001, Assam**" must be submitted during office hours in the drop-box arranged for the purpose on or before **3:00 P.M. of 23rd August, 2021**.
- 1.3. There is a requisite **processing fee {non-refundable in nature}** to the tune of **INR 500/-**, which must be deposited through the **ICICI Bank Challan-'FEE CODE 011'** at any of the branches of **ICICI Bank**. The **soft copy** version of the aforementioned bank challan has to be **downloaded from the University's website i.e. www.cottonuniversity.ac.in** for which it has been provided therein alongside the relevant Notice Inviting Bids.
- 1.4. The sealed and signed **counterfoil** [which indicates payment of the requisite processing fee] **with regard to ICICI bank challan** bearing the heading '**UNIVERSITY'S COPY**' must be submitted in the envelope titled **Techno-commercial Bid**.
- 1.5. **Techno-commercial Bid opening** may be done on the **following working day at 11:00 A.M.** which the bidders may attend, if they so desire.
- 1.6. In case the date of bid submission is declared a **holiday** by any jurisdictional authority, then the **following working day** of the University shall be treated as **due date** for bid submission. The bid received after due date and time or without sealed cover or in torn condition shall be treated as '**unresponsive**' and disqualified, and shall not be entertained under any circumstances whatsoever.
- 1.7. Any **addendum, corrigendum, notice of date extension, etc.** shall be posted on the University's website only. As such, it is in the bidder's best interest to stay alert regarding such postings.
- 1.8. **All bids** received shall be opened, scrutinized and evaluated by a committee constituted for the purpose of **selection and recommendation** with respect to award of supply contract.
- 1.9. **Evaluation shall be done separately for each item or category of items or any other parameter as deemed fit by the committee** constituted for the purpose.
- 1.10. **All pages** of the bidding document and supporting materials, annexures/enclosures etc. must be sealed and signed by the bidder or their authorized signatory. **All entries** by the bidder must be legibly written. Any **over-writing, corrections and cuttings** must bear initials of the authorized signatory. Ideally, corrections must be made by writing again instead of '**shaping**' or over-writing.

Handwritten signature and date: 2/8/21



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- 1.11. The bidder must invariably furnish Earnest Money Deposit (EMD) to the tune of 5% of the total quoted value vide Banker's Cheque/ Demand Draft, drawn in favour of "Cotton University" and payable at "Guwahati".
- 1.12. The EMD of the unsuccessful bidder(s) shall be returned after award of contract (A.O.C.) to the successful bidder whereas the EMD of the successful bidder shall be treated as Performance Security money and retained until expiry of the period of warranty. The same shall be returned subject to obtaining Clearance Certificate/ No Objection Certificate from the authorized personnel/official/custodian concerned.
- 1.13. The Performance Security money, during the subsistence of the period of warranty, shall be interest-free i.e., it shall not carry any interest on the principal amount and be refunded after adjustment of all dues of the University for damages of any kind, if any.
- 1.14. An offer of Guarantee encompassing immediate replacement of the supplied item(s) against defects of manufacturing/ workmanship/ mishandling during storage and transit etc. must be provided by the successful bidder.
- 1.15. An offer of On-site Comprehensive Warranty for a period of three (3) years or thirty-six (36) months from the date of installation and commissioning of lab apparatus and items (as applicable) must be provided by the successful bidder.
- 1.16. Goods and Services Tax (GST) at the concessional rate of 5% applies to item(s) meant for research purposes in public funded institutions as mandated by the applicable notifications issued from time to time by the Ministry of Finance, Govt. of India or other competent public authority.
- 1.17. The University shall deal with the bidder directly, and thus, no middle-men/ agents/ commission agents etc. must be asked or encouraged by the bidder to represent their cause.
- 1.18. The bidder submitting their bid shall be deemed to have read and unconditionally accepted all the terms and conditions stated herein. Therefore, counter-conditional bids shall be summarily rejected. No correspondence shall be entertained in respect of acceptance or rejection of their bid.
- 1.19. Non-conformity to any of the stipulated terms and conditions and/or non-submission of any of the documents/ testimonials/ fees etc. reference of which are made in the 'Enclosures-cum-Checklist' Section, shall amount to the bid being 'incomplete' thereby disqualifying the bidder owing to which their bid shall not be considered, but instead, summarily rejected by the bid opening and evaluation committee.
- 1.20. The Financial Bid of only the techno-commercially acceptable offer(s) shall be opened for the purpose of evaluation and ranking. Date and time of the Financial Bid opening may be intimated to the shortlisted bidder(s) separately.
- 1.21. The bidder is expected to quote the most competitive base rate(s)/ price(s)/ value(s). Quoted price(s) [which is/are not to be higher than the Maximum Retail Price (MRP) or applicable market rate(s)/ price(s) under any circumstances whatsoever, as applicable] must be inclusive of all taxes and duties, charges for packaging/ forwarding/ freight {bulk loading and unloading}, etc. Transit insurance, wages of manpower, and other incidental expenses must be borne by the bidder themselves.

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2/18/21



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- 1.22. Base rate(s)/ price(s)/ value(s) in the Financial Bid must be quoted in Indian currency, i.e. Indian Rupees (INR) only. If base rate(s)/ price(s)/ value(s) are quoted in a format other than the one prescribed in the bidding document, then the bid is liable to be cancelled. 'Schedule of Rates' must be carefully and properly filled up.
- 1.23. On-site delivery and on-site installation of items and apparatus {as applicable} besides on-site training {as applicable} shall be carried out by authorised representative(s) of the manufacturing company or successful bidder entirely at their own risk and free-of-cost in the presence of authorized personnel belonging to Department of Physics, Cotton University.
- 1.24. The University reserves the right to call for any information and record as well as inspect the premises of any or all of the bidders, before as well as, during award of the supply contract and subsistence of the warranty period.
- 1.25. Mere submission of the bid does not confer any right on any eligible bidder for being selected as the successful bidder and to eventually obtain the supply contract/ Purchase Order (P.O.).
- 1.26. Selection shall not *ipso facto* (by itself) confer any right on the successful bidder to receive the supply contract/ Purchase Order(P.O.) from the University. The University reserves the right to procure the item(s)/service(s) from any other company/entity/contractor/supplier/vendor which is not selected as per this or any other bid.
- 1.27. The bid shall be rejected if:-
 - (i) the authenticity of any of the supporting documents is found to be fabricated or false or untrue or incorrect or forged or deceitful; or
 - (ii) the bidder is found to have been blacklisted by any government/ non-government organization/ Public Sector Undertaking in the preceding three(3) years; or
 - (iii) the bidder is convicted, punished, charge-sheeted in a criminal case involving moral turpitude; or
 - (iv) the bidder tries to canvass the bidding process or influence any official of the University, in any manner whatsoever; or
 - (v) the bid or any part of it is found to be conditional or contradictory in nature and interpretation.
- 1.28. The successful bidder must ensure prompt after-sales service and support, whenever and wherever called for at the designated site during such time in the day as may be specified for that particular place from time to time which include all working days/ shifts and even on holidays. Apart from providing the required services, as and when called for, the successful bidder must discharge any other duties, which in the opinion of the University are within the scope of work of the bidder, and that such duties must be carried out with due diligence and care.
- 1.29. The successful bidder shall not divulge any information, confidential or otherwise, that he may come across. The bidder or their representative(s) shall be granted access/permission by the University to enter the premises only for the purpose of carrying out the contractual obligations and not for any other reason or purpose. Prior permission must be obtained by the bidder or their authorized representative(s) from the University in the event of them being required to remain on the University premises beyond the stipulated time and/or on Sundays and fixed public holidays for whatsoever reasons.

Signature
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- 1.30. After receiving necessary approval of the University authority, the lowest base rate(s)/ price(s)/ value(s) of the item(s) listed in the Techno-commercial Bid may be kept constant/fixed/valid for a period ranging from six(6) to twelve(12) months from the date of issue of the first (original) Purchase Order (P.O.) so that the successful bidder is able to deliver those item(s) at their approved base rate(s)/ price(s)/ value(s) based on repeat orders generated during that time frame.
- 1.31. The successful bidder and their representative(s) shall be liable to be dealt with suitably in the event of infringement of any law. Any financial liability arising on the University shall be deducted from the invoice of the bidder and if the full amount is not recovered, then the same shall be recovered from the Performance Security money of the bidder.
- 1.32. In case the successful bidder fails in fulfilling the obligations under the bid/ supply contract, fully and in time, the University shall have the absolute right to take up the work at the bidder's cost and risk, and recover all such expenses from the amount due to the bidder including their Performance Security money.
- 1.33. If, at a later date, it is found that any of the information, documents, testimonials or certificates submitted by the successful bidder is wrong/ forged/ fake/ false/manipulated, then the supply contract/ Purchase Order (P.O.) shall stand cancelled with immediate effect and the Performance Security money shall be forfeited without any claim whatsoever against the University.
- 1.34. The successful bidder is liable to forfeit their Performance Security money and be barred from bidding in the future if after receipt of supply contract/ Purchase Order (P.O.), they fail to deliver the item(s) and/or fulfil due obligations with respect to the same. For any deficient services, the University reserves the right to terminate the contract/ P.O. and initiate such further penal, including legal, action as deemed appropriate.
- 1.35. The successful bidder shall not delegate or sublet/subcontract the supply assignment or any part thereof to any other agency/entity/contractor without the prior written consent/approval of the University; and such consent, even if provided, shall not relieve the bidder from any liability or any obligation under the supply contract/ Purchase Order (P.O.).
- 1.36. If, in the course of execution of assignment under the supply contract/ Purchase Order (P.O.) by the successful bidder, any damage is caused by the bidder or its personnel deployed in the University's premises to persons and/or property of the University, then the bidder shall be liable for the same and that they shall indemnify the University against such damages. The bidder shall also render all assistance and cooperation to the University in the event of any inquiry relating to any such incident or accident.
- 1.37. The successful bidder shall observe all the laws and be solely responsible for any prosecution or liability arising from breach of any of those laws. The bidder shall be responsible for compliance with all central and state laws as per rules/ regulations/ bye-laws and order of the local authorities and statutory bodies as may be in force from time to time during the subsistence of the supply contract and period of warranty. The bidder shall also indemnify the University and its officer(s)/ official(s)/ end user(s) from any claim or consequences/ damages for any lapse or non-compliance thereof. If, at any point of time, it is found that any type of liability/ responsibility has been fixed on the University or its employees by any government or local bodies regarding the contract in question, then the total responsibility will have to be borne by the bidder.

Handwritten signature
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- 1.38. **No advance payment** shall be made to the successful bidder.
- 1.39. **Statutory levies and taxes**, as applicable from time to time, may be **deducted at source** {as Tax Deducted at Source (TDS)} **from the invoice(s)** of the successful bidder at the time of settlement of the same **unless the bidder produces a certificate to the contrary from the Income Tax authorities**. TDS certificate shall be issued by the University to that effect. Taxes, as applicable from time to time, shall be paid as per rules.
- 1.40. The University reserves the **right to cancel the supply contract/ Purchase Order (P.O.)** by giving a **notice in writing without assigning any reason** whatsoever in lieu thereof. Any notice sent by the University to the address recorded in the bidding document of the successful bidder shall be deemed to have been properly served for any of the purposes mentioned herein.
- 1.41. The **decision** of Cotton University **on all matters connected with or incidental to selection of supplier/vendor** shall be **final and binding on all** and **not be called in question on any ground**. In case of any **ambiguity or dispute that may arise in the interpretation of any of the clauses** in this bidding document, the interpretation of the Registrar, Cotton University shall be **final and binding on all**.
- 1.42. **The Registrar, Cotton University or any officer(s)/official(s) authorized** by the University, shall have the discretion to **review or ascertain and enforce due and proper observance of the laws, rules and regulations**. The **officer(s)/official(s) so authorized** by the University, or the Registrar, may, **by himself, investigate into any complaint** in the case of any default on the part of the successful bidder vis-à-vis terms and conditions of the bid. **No bidder shall be allowed to be represented by any legal expert during the course of any investigation, enquiry, appeal or any other proceeding** conducted by or before any officer/official of the University against the bidder.
- 1.43. Cotton University reserves the **right to amend or withdraw any of the terms and conditions and also update, modify, relax/waive and supplement the minimum criteria/requirements at any point of time**. The University reserves the **right to accept the offers in full or in parts or reject the same summarily or partly**. In other words, the University reserves the **right to accept, consider or reject any or all of the offers without assigning any reason** in lieu thereof. The decision of Cotton University in respect of scrutiny and evaluation of credentials of bidders as well as selection of the successful bidder(s) shall be intimated by the office.
- 1.44. In the event of any **ambiguity or dispute or difference between the parties** involved relating to or concerning the **interpretation of the supply contract/ bid** or any **alleged breach** thereof or any **matter relating to the contract/ bid**, the same shall be **settled** by the parties, as far as possible, **by mutual discussions and consultations** between themselves. **No bidder shall be allowed to be represented by a legal expert** during any proceeding of mutual discussions and consultation. The dispute shall be so settled only when the same has arisen during or after the placement of the Purchase Order (P.O.) and/or during subsistence of the contract or period of warranty and that the **decision taken by the Registrar, Cotton University** shall be **final and binding** on all parties concerned.
- 1.45. **The law of the land shall apply** to the supply contract(s)/ Purchase Order(s) arising out of this bid. **All disputes** in this connection and all matters arising out of the same shall be **settled** exclusively in the courts falling under the jurisdiction of Kamrup Metropolitan district authority.

Signature
2/18/21



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2. Enclosures-cum-Checklist:

- Documents etc. which must be placed inside the sub-envelope titled 'Techno-commercial Bid' are:
 - i) Counterfoil (UNIVERSITY'S COPY) of ICICI Bank Challan-FEE CODE 011 indicating submission of the processing fee worth INR 500/-
 - ii) Earnest Money Deposit (EMD) in the form of Banker's Cheque/ Demand Draft to the tune of 5% of the total quoted value
 - iii) Copy of the bidding document duly sealed and signed by the authorized signatory representing the bidder thereby implicating that all terms and conditions stipulated in the bidding document are unconditionally acceptable to the bidder
 - iv) Copy of Proprietary Article Certificate (PAC) or certificate indicating Original Equipment Manufacturer's valid Certificate of Dealership/ Manufacturer Authorization Form (MAF)
 - v) Copy of OEM's Product Brochure/ Technical Literature regarding the offered products containing their specifications, images, sketches, diagrams, testing report, BEE rating, ISO, etc. as applicable
 - vi) Technical Compliance Statement/Table on the letterhead of the bidder stating the University's required item specifications vis-à-vis the bidder's offered item specifications
 - vii) Photocopy of the bidder's registration certificate issued by the competent government/statutory authority for being partnership firm or company, as applicable, thereby indicating name(s) and address(es) of the authorized signatory(ies) who may be either joint partners or chief executive officer/ managing director or other designated authorized signatory, whichever is applicable
 - viii) Photocopy of valid/up-to-date trade license issued by the competent authority under respective administrative jurisdiction in the district/ Union territory
 - ix) Photocopy of PAN card
 - x) Photocopy of certificate pertaining to GSTIN or GST registration
 - xi) Photocopy of document(s) indicating Income Tax Returns (ITR) filing for Financial Years 2018-19 and 2019-20 {i.e. Assessment Years 2019-20 and 2020-21}
 - xii) Photocopy of documents/testimonials [set(s) of purchase orders with corresponding delivery challans and installation reports/certificates] indicating previous work experience of serving in a similar domain in government organisation(s)/ Public Sector Undertaking(s)/ educational institute(s) of repute only
- Document(s) etc. which must be placed inside the sub-envelope titled 'Financial Bid' are:
 - a) Copy of the prescribed format of 'Schedule of Rates' duly filled up in neat and legible handwriting

Admission
2/8/21



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3. Specifications:

Sl. No.	Particulars of Item
1	FD12 - Two stage oil sealed, rotary vane With 0.375kW single phase motor – 01FD-0121216
2	Needle valve NV1 – 03NV-001-001
3	Pirani gauge Analog pirani gauge with double gauge head, 2m cable – ASTM-D – 03AP-002-002
4	Blank off flange KF50 KF50 blank flange – 03BF-050-001
5	Blank off flange KF25 KF25 blank flange – 03BF-025-001
6	Clamp KF50 KF50 clamp assembly with centering ring and O ring – 03KF-004-050
7	Clamp KF25 KF25 clamp assembly with centering ring and O ring – 03KF-004-025
8	SS bellows KF25 With KF25 end flanges – \varnothing 1" x 1000mm L – 03BL-25-1000
9	Reducer KF50 to KF25 KF50-KF25 end flange, SS - 03RE-050-025
10	Foreline trap KF25 With KF25 end flanges and heater – 03FT-025-001
11	Reducer KF25 to KF10 KF25-KF10 end flange, SS – 03RE-025-010

6/11/21



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12	Blank off KF10 KF10 Blank flange – 03BF-010-001
13	Butterfly valve 1" QSV1 with KF25 end flanges, manual – 03QS-001-001
14	6 way adapter With 2 port KF-50, 2 port KF-25, one port KF-10; one port will fix with needle valve
15	3 way tee KF tee - equal, all three KF25 end flanges, SS – 03TE-025-150
16	Ion-implanted detectors With B-mount, active area: 50 mm ² minimum depletion
17	Charge sensitive pre-amplifier 142IH
18	Cable with one ea. SHV female and BNC male plug RG-62A/U 93-ohm
19	Cable with two BNC male plugs RG-62A/U 93-ohm, 12-ft length
20	Cable with two SHV female plugs RG-59A/U 75-ohm, 12-ft length
21	Terminator 100-ohm, BNC male plug
22	Tee connector U-type BNC tee connector U-type
23	Hermetic seal signal connector C-13 BNC to microdot vacuum feedthrough with female BNC and male microdot

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24	Nal scintillation detector Size 1"x 1" flat type with built-in pre-amplifier, sliding bench with source holder, stand for scintillation detector, scatter stand
25	Spectroscopy amplifier With NIM connector
26	G.M. counter with source Complete with power supply, digital readout and digit counting system, programmable timer with digital display, G.M. tube mounted on stand with aluminium absorbent sample with one beta/gamma source
27	FDM trainer 1. 50 MHz, dual channel digital storage oscilloscope 2. Desktop computer having Intel Core i3/ 4GB DDR4 RAM/ 1TB SATA hard disk/ No ODD/ Monitor 18.5" inch/ Win10SL with 600 VA UPS
28	Sample and reconstruction trainer
29	Electromyograph trainer 1. 50 MHz, dual channel digital storage oscilloscope 2. Desktop computer having Intel Core i3/ 4GB DDR4 RAM/ 1TB SATA hard disk/ No ODD/ Monitor 18.5" inch/ Win10SL with 600 VA UPS
30	Blood pressure measurement trainer 50 MHz, dual channel digital storage oscilloscope
31	Wavelength measurement of laser by diffraction grating 1. 50 MHz, dual channel digital storage oscilloscope 2. Desktop computer having Intel Core i3/ 4GB DDR4 RAM/ 1TB SATA hard disk/ No ODD/ Monitor 18.5" inch/ Win10SL with 600 VA UPS
32	Oscilloscope 25 MHz

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33	Function generator 20Hz -10Mhz
34	Power supply -30V - 0 + 30V
35	Z-scan system (1) Optical breadboard 1200x800mm – 1 no. (2) Rigid support for above breadboard – 1 no. (3) DPSS laser 532nm 100mW – 1 no. (4) Kinematic mirror mount with metallic mirror – 2 nos. (5) Variable beam splitter with mount – 1 no. (6) Circular disc with apertures – 2 nos. (7) Achromatic lens with mount (focal length 100 mm & 286 mm) – 2 nos. (8) Motorized precision linear translation stage (150 mm travel) and control electronics – 1 no. (9) Filter wheel unit with 5 various neutral density filters – 1 no. (10) Variable aperture with mount – 1 no. (11) 1mm cuvette with holder – 1 no. (12) Single channel detector measurement unit with one Si photodiode detector and software – 1 no.
36	Curie temperature kit (for ferroelectrics) (i) Main unit consists of digital voltmeter (0-9.99 V AC) (ii) Audio oscillator (1KHz) (iii) Standard capacitors (pf, nf) (iv) Dielectric cell consists of two 1" dia. gold plated brass discs fitted in between the cell holder (v) Furnace: PID controlled (RT– 170°C) (vi) Thermocouple (vii) PZT sample
37	Dielectric constant kit for solids with frequency variation i) Main unit having audio oscillator (1 KHz), digital voltmeter (0 – 9.99V DC), standard capacitance and electronic circuitry ii) Dielectric cells: 75mm gold plated brass discs (1 set) and 25mm gold plated brass discs (1 set) iii) Samples: low range – glass, Backlite high range – PZT DISC

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2/5/21



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38	<p>Heat capacity kit for solid sample</p> <p>(a) Main unit consisting of 5V supply, suitable electronic circuit, digital milli-ammeter and digital temperature indicator</p> <p>(b) Silver calorimeter (C) and samples (standard sample- silver, test sample- aluminium, copper and brass)</p> <p>(c) Stop watch 0.1 sec. accuracy</p> <p>(d) Thermocouple</p>
39	<p>B-H curve unit (electronic version) – (Curie temperature Kit® for ferri-magnetic materials)</p> <p>i) Main unit</p> <p>ii) Hot air oven with digital temperature indicator and thermocouple</p> <p>iii) Ferrite samples</p> <p>iv) Silicon oil</p>
40	<p>LASER experiment kit</p> <p>1. Determination of power distribution within beam</p> <p>2. Measurement of beam spot size</p> <p>3. Measurement of divergence of LASER beam</p> <p>4. Determination of wavelength of LASER</p> <p>5. Determination of grating element of reflection type grating</p> <p>The setup consists of:</p> <p>a) He – Ne LASER (2 mW) with power supply</p> <p>b) Optical bench</p> <p>c) Reflection grating (15000 lpi, imported)</p> <p>d) Transmission grating (15000 lpi, imported)</p> <p>e) Photo detector with holder</p> <p>f) Knife edge with holder</p> <p>g) Micropositioner mounts- 4 nos.</p> <p>h) Screen with mount</p> <p>i) Digital multimeter</p>
41	<p>Electron spin resonance spectrometer (ESR-105)</p> <ul style="list-style-type: none">• FET based marginal R.F. oscillator• Digital display of frequency• Excellent peaks display• Digital display of Helmholtz coil current• Compatible with general purpose CRO in X-Y mode

B. Khan
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42	X-Ray diffraction simulation experiment (XDE-01) Identification of lattice and determination of lattice constant by X-Ray diffraction simulation experiment
43	Digital balance Weighing capacity: 220 gm Minimum display: 0.1mg Calibration: internal Pan size: approx. 91 mm dia.
44	Single beam UV-Vis spectrophotometer Wavelength range: 190 - 1100 nm Spectral bandwidth: 2 nm Light source: tungsten and deuterium lamps
45	pH meter pH range: -2.00 to 16.00 pH pH resolution: 0.01 pH Calibration points: Up to 5
46	Muffle furnace Temperature range: Maximum working temperature 1150°C continuous or 1200°C intermittent Inner case made of ceramic pot Outer case made from thick gauge mild steel (CRCA) sheet Internal size: 30 x 15 x 15 cm Rating: 3.5 KW
47	Magnetic stirrer Capacity: 10 L Set up plate material: stainless steel Heater temperature: RT to 320°C Variable speed: 200-2200 rpm Plate dimension: 140 mm Protection class: IP 21 Stir bar PT 1000 probe Stand with boss head

Salim
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48	<p>Semiconductor LASER apparatus MLD-06</p> <p>Table top type for determination of:</p> <ol style="list-style-type: none">Wavelength of LASER diode using gratingParticle sizeNumerical aperture of optical fibre <p>The Kit consists of diode LASER source, transmission type grating, optical fibre, jig to hold optical fiber, screen, sample slide (lycopodium powder) for particle size determination, multimeter, chucks and bases to hold the assemblies</p>
49	<p>Fibre optics apparatus</p> <p>To measure numerical aperture and acceptance angle of optical fibre To measure attenuation in optical fibre</p> <p>The apparatus consists of LASER diode, objective (10x), fibre (1m long & 5m long), detector, multimeter, chucks and bases to hold the assemblies</p>
50	<p>Photo diode characteristics apparatus</p> <p>To study I-V characteristics in reverse bias and to measure variation of photocurrent as a function of reverse voltage and intensity</p> <p>The setup consists of main unit having variable power supply, digital voltmeter, digital microammeter, photodiode, light source, provision to vary the intensity of the light source, black box to hold photodiode and source</p>
51	<p>LED and LASER diode characteristics apparatus</p> <p>To study I-V characteristics of LED and diode LASER To study P-I characteristics of LED and diode LASER</p> <p>The setup consists of main unit having variable power supply, digital voltmeter, digital milliammeter, LEDs (4 nos.), diode LASER with holder, photo detector, bases</p>

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4. Schedule of Rates:

Sl. No.	Item & Make offered	Base Rate [INR]	HSN Code	Value of GST@5% [INR]	Unit Price [INR]	Quantum [nos.]	Total Price [INR]	Delivery Schedule [No. of Days]
[A]	[B]	[C]	[D]	[E]	[F = C+E]	[G]	[H = F x G]	[I]
1	FD12 - Two stage oil sealed, rotary vane					1		
2	Needle valve					1		
3	Pirani gauge					1		
4	Blank off flange KF50					4		
5	Blank off flange KF25					10		
6	Clamp KF50					6		
7	Clamp KF25					10		
8	SS bellows KF25					2		
9	Reducer KF50 to KF25					4		
10	Foreline trap KF25					1		
11	Reducer KF25 to KF10					4		
12	Blank off KF10					4		
13	Butterfly valve					2		
14	6 way adapter					1		
15	3 way tee					1		
16	Ion-implanted detectors					1		
17	Charge sensitive pre-amplifier					1		
18	Cable with one ea. SHV female and					1		

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অসমতন বেদব্য়ম

	BNC male plug								
19	Cable with two BNC male plugs					2			
20	Cable with two SHV female plugs					1			
21	Terminator					2			
22	Tee connector U-type					4			
23	Hermetic seal signal connector					1			
24	NaI scintillation detector					1			
25	Spectroscopy amplifier					1			
26	G.M. counter with source					1			
27	FDM trainer					1			
28	Sample and reconstruction trainer					1			
29	Electromyograph trainer					1			
30	Blood pressure measurement trainer					1			
31	Wavelength measurement of laser by diffraction grating					1			
32	Oscilloscope					2			
33	Function generator					2			
34	Power supply					2			
35	Z-scan system					1			
36	Curie temperature kit (for ferroelectrics)					1			

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अग्रमतेन वेदव्यम्

37	Dielectric constant kit for solids with frequency variation					2		
38	Heat capacity kit for solid sample					1		
39	B-H curve unit (electronic version) – (Curie temperature Kit® for ferri-magnetic materials)					2		
40	LASER experiment kit					1		
41	Electron spin resonance spectrometer (ESR-105)					1		
42	X-Ray diffraction simulation experiment (XDE-01)					2		
43	Digital balance					1		
44	Single beam UV-Vis spectrophotometer					1		
45	pH meter					1		
46	Muffle furnace					1		
47	Magnetic stirrer					1		
48	Semiconductor LASER apparatus MLD-06					1		
49	Fibre optics apparatus					1		
50	Photo diode characteristics apparatus					1		
51	LED and LASER					1		

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diode characteristics apparatus							
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N.B.: Quantum of order might be revised at a subsequent stage without any revision in offered rate/price

Full Name (in BLOCK Letters) of the Authorized Signatory:

Full Signature of the Authorized Signatory with Date:

Address of the Bidder:

Contact Number(s) of the Bidder:

E-Mail ID(s) of the Bidder:

Office Seal/Stamp:

Handwritten signature and date: 2/5/21