

For official use only

Tender No:

Signature:

Date of Issue:

TENDER FORM

for

Physics laboratory Instrument (Hall effect experiment, optical fiber kit (Apparatus), Optical fiber training system/ Fiber optics training kit, Photo Diode Characteristics Apparatus, LED and Laser Diode Characteristics Apparatus, Solar Cell Characteristics Apparatus, Laser Experiment Kit)

DOWNLOADED FROM WEBPAGE
or
COLLECTED HARD COPY FROM THE
OFFICE

Last date of tender submission to reach the office through speed post/registered post

17-10-2015

NOTE

Payment of Rs. 500/- by cash or DD drawn in favour of “AAU Fund A/C”, payable at Anand as tender fees should accompany the filled tender otherwise the tender form shall be treated as incomplete and cancelled.

**PRINCIPAL AND DEAN
COLLEGE OF AGRICULTURAL INFORMATION TECHNOLOGY
ANAND AGRICULTURAL UNIVERSITY, ANAND - 388 110 (GUJARAT)**

**Tel.: (02692) 263124
e-mail: deanait@aaui.in**

Terms and Conditions:

- The quotation must be in Indian rupees and rates quoted should be **inclusive of all applicable Taxes and F.O.R. at Anand at our Laboratories inclusive of packaging, forwarding, freight & insurance, installation, commissioning and demonstration by technical team at our site.**
- Our University will supply custom/central excise duty exemption certificate for being educational institute.
- Validity of the quotation should be **120** clear days from the last date of receipt of the quotation.
- **Payment shall be made only after satisfactory supply/installation and demonstration. No advance or part payment or payment through bank can be entertained.**
- Tender forms only from original manufacturers/their authorized dealers/stockists who are in the concerned field will be considered, along with the said certificate.
- The credentials of the party, list of customers and complete illustrated literature should be enclosed with the tender form. The firm should be ready for pre inspection of the item and its performance, if necessary.
- All the electronic hardware should comply with international standards for safety, electromagnetic emissions and immunity. etc.
- Tenderers will have to attach original colour catalogue of the each quoted product ensuring exact specifications.
- In case of defective items, the same shall have to be replaced by the party concerned at its own cost, and risk, and within stipulated time.
- The Earnest Money Deposit (EMD) in the form of account payee Demand Draft in the name of “AAU Fund Account” payable at Anand, shall have to be accompanied with the filled Tender Forms. Tender submitted without EMD shall not be considered. The deposit shall be forfeited if the party in any case is not able to supply the ordered goods in stipulated period and at the rates approved.
- Duly filled tender forms in sealed envelopes through **registered post/speed post only** should reach the office of the **Principal, College of Agricultural Information Technology, Anand Agricultural University, Anand- 388 110, (Gujarat) before 17.00 h on 17-10-2015**
- Please super scribe the envelope, **“TENDER DOCUMENTS FOR PHYSICS LABORATORY INSTRUMENTS: Principal, College of Agricultural Information Technology, Anand Agricultural University, Anand-388110”** and mention clearly senders’ name and address.
- The PRINCIPAL shall be empowered to reject any one or all the tenders without giving any reason for doing the same. This shall not be challengeable in the Court.
- Parties may be called for scientific discussion and price negotiation, if required.
- In case of disputes, decision of Vice Chancellor, Anand Agricultural University, Anand will be final and acceptable to all the parties.

- **Name of supplier / firm :**

- **Complete postal address:**

- **Telephone Number :**

- **FAX Number (if any) :**

- **e-mail address (if any) :**

- **Details of Tender fee :**

D.D.Number :

Bank's Name :

Amount :

Date :

- **Details of EMD :**

D.D.Number :

Bank's Name :

Amount :

Date :

- **Sales Tax No. :**

- **Registration No. :**

- **Any other details :**

We agree to abide by the terms and conditions of supply mentioned in this tender document

**Signature of Tenderer
(With Stamp, Name, Designation and date)**

Lowest competitive rates are hereby invited for the purchase of Equipment/instruments with following specifications

Sr. No.	Specifications and other details of items to be purchased	EMD (Rs.)	Quantity								
1	<p><u>HALL EFFECT EXPERIMENT</u></p> <p>The apparatus consists of :</p> <p>a) i) Hall Probe (Ge Crystal-n type)ii) Hall Probe (Ge Crystal-p type)</p> <p>b) Multipurpose Stand</p> <p>c) Hall Effect Set-up</p> <p>d) Electromagnet</p> <p>e) Constant Current Power Supply</p> <p>f) Digital Gaussmeter</p> <p>Complete in all respect</p> <table><tr><td colspan="2">Hall probe</td></tr><tr><td><p>(a) Hall Probe (Ge Crystal)</p><p>Ge single crystal with four spring-type pressure contacts is mounted on a sunmica-decorated Bakelite strip. Four leads are provided for connections with measuring devices.</p><p>Technical Details</p><p>Material : Ge single crystal n or p-type as desired</p><p>Resistivity: 8-10Ω.cm</p><p>Contacts:Spring type (solid silver)</p><p>Zero-field potential:<1mV(adjust.)</p><p>Hall voltage :25-35mV/10mA/KG</p></td><td><p>(b) Hall Probe (InAs)</p><p>Indium Arsenide crystal with 4 soldered contacts is mounted on a PCB strip and covered with a protective layer. The Hall Element is mounted in a pen-type case and a 4-core cable is provided for connections with the measuring device and current source.</p><p>Technical Details</p><p>Contacts: Soldered</p><p>Rated control current: 4mA</p><p>Zero Field Potential : <4mV</p><p>Linearity(0-20KG):+0.5% or better</p><p>Hall Voltage:60-70mV/4mA/KG</p><p>The crystal along with is four contacts is visible through the protective layer.</p></td></tr><tr><td colspan="2">Hall Effect Set-up (Digital)</td></tr><tr><td><p>(i) Digital Millivoltmeter</p><p>Intersil 3¹/₂ digit single chip A/D Converter ICL 7107 have been used. It has high accuracy like, auto zero to less than 10μV, zero drift of less than 1μV/°C, input bias current of 10pA max. and roll over error of less than one count. Since the use of internal reference causes the degradation in performance due to internal heating, and external reference has been used. Digital voltmeter is much more convenient to use in Hall experiment, because the input voltage of either polarity can be measured.</p><p>Specifications</p><p>Range: 0-220mV (100μV min.)</p><p>Accuracy:±0.1%of reading±1 digit</p></td><td><p>(ii) Constant Current Power Supply</p><p>This power supply, specially designed for Hall Probe, provides 100% protection against crystal burn-out due to excessive current. The supply is a highly regulated and practically ripple free dc source.</p><p>SPECIFICATIONS</p><p>Current: 0-20mA</p><p>Resolution : 10μA</p><p>Accuracy: ±0.2% of the reading ± 1digit</p><p>Load regulation: 0.03% for 0 to full load</p><p>Line regulation:0.05% for 10% variation</p></td></tr></table>	Hall probe		<p>(a) Hall Probe (Ge Crystal)</p> <p>Ge single crystal with four spring-type pressure contacts is mounted on a sunmica-decorated Bakelite strip. Four leads are provided for connections with measuring devices.</p> <p>Technical Details</p> <p>Material : Ge single crystal n or p-type as desired</p> <p>Resistivity: 8-10Ω.cm</p> <p>Contacts:Spring type (solid silver)</p> <p>Zero-field potential:<1mV(adjust.)</p> <p>Hall voltage :25-35mV/10mA/KG</p>	<p>(b) Hall Probe (InAs)</p> <p>Indium Arsenide crystal with 4 soldered contacts is mounted on a PCB strip and covered with a protective layer. The Hall Element is mounted in a pen-type case and a 4-core cable is provided for connections with the measuring device and current source.</p> <p>Technical Details</p> <p>Contacts: Soldered</p> <p>Rated control current: 4mA</p> <p>Zero Field Potential : <4mV</p> <p>Linearity(0-20KG):+0.5% or better</p> <p>Hall Voltage:60-70mV/4mA/KG</p> <p>The crystal along with is four contacts is visible through the protective layer.</p>	Hall Effect Set-up (Digital)		<p>(i) Digital Millivoltmeter</p> <p>Intersil 3¹/₂ digit single chip A/D Converter ICL 7107 have been used. It has high accuracy like, auto zero to less than 10μV, zero drift of less than 1μV/°C, input bias current of 10pA max. and roll over error of less than one count. Since the use of internal reference causes the degradation in performance due to internal heating, and external reference has been used. Digital voltmeter is much more convenient to use in Hall experiment, because the input voltage of either polarity can be measured.</p> <p>Specifications</p> <p>Range: 0-220mV (100μV min.)</p> <p>Accuracy:±0.1%of reading±1 digit</p>	<p>(ii) Constant Current Power Supply</p> <p>This power supply, specially designed for Hall Probe, provides 100% protection against crystal burn-out due to excessive current. The supply is a highly regulated and practically ripple free dc source.</p> <p>SPECIFICATIONS</p> <p>Current: 0-20mA</p> <p>Resolution : 10μA</p> <p>Accuracy: ±0.2% of the reading ± 1digit</p> <p>Load regulation: 0.03% for 0 to full load</p> <p>Line regulation:0.05% for 10% variation</p>	3000	2
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	Electromagnet Specifications Field intensity : 7.5KG at 10mm air-gap with flat pole pieces Pole Pieces : 50mm diameter Energising Coils : Two, each with a resistance of about 3.0Ω Power Requirement : 0.30Vdcm 4A, if coils are connected in series Weight : 33KG	Power supply Specifications Current Range : Smoothly adjustable from 0-4 A Load Regulation : 0.1% for load variation from 0 to max. Line Regulation: 0.1% for $\pm 10\%$ mains variation Display : 3 ¹ / ₂ digit, 7 segment LED DPM Power : 220V $\pm 10\%$, 50Hz Weight : 9Kg Dimensions : 335mm x 305mm x 155mm		
	Digital Gauss meter Specification Range : 0-2 KG & 0-20 KG Resolution : 1G at 0-2KG range Accuracy : $\pm 0.5\%$ Temperature : Upto 50°C Display : 3 ¹ / ₂ digit, 7 segment LED DPM with auto polarity and over flow indication Power : 220V $\pm 10\%$ 50Hz Transducer : Hall Probe-InAs Special Feature : Indicate the direction of the magnetic field Weight : 3 Kg Dimensions: 280mm x 255mm x 120mm			
2	<u>OPTICAL FIBER KIT (Apparatus)</u> For determination of Numerical Aperture and Acceptance angle of an optical Fibre. The apparatus should consists of Laser Diode, Objective, Fibre, Detector, Multimeter, Chucks and bases to hold the assemblies and good quality diffraction grating (3 IN 1) etc.		1000	1
3	<u>Optical Fiber training system/ Fiber optics training kit</u> LIST OF EXPERIMENTS : <ul style="list-style-type: none">• Setting up a Fiber Optic Analog Link.• Study of losses in Optical Fiber :• Measurement of Propagation Loss.• Measurement of Bending Loss.• Study of Characteristics of Fiber Optic LED & Detector.• Measurement of Numerical Aperture.• Study of frequency Modulation & Demodulation using Fiber Optic Link.• Setting up a Fiber Optic Digital Link.• Study of Modulation & Demodulation of light source by Pulse Width modulation(PWM)• Study of Modulation & Demodulation of Light source by Pulse Position Modulation (PPM)• Setting up a Fiber Optic Voice Link.		4000	2

4	<u>Photo Diode Characteristics Apparatus</u> Main Unit having variable power supply digital voltmeter digital micro-ammeter photodiode light source provision to vary the intensity of the light source black box to hold photodiode and source To measure variation of photocurrent as a function of reverse voltage & intensity variation provision.	1500	2
5	<u>LED and Laser Diode Characteristics Apparatus</u> Main Unit having variable power supply, digital voltmeter, digital milliammeter, LEDs. (4 nos). Diode Laser with holder & Luxmeter/photo detector, bases.	1500	2
6	<u>Solar Cell Characteristics Apparatus</u> The complete Experimental Set-up consists of the followings: 0.1 One board built-up of 1.1 Digital D.C. Ammeter dual range, $3\frac{1}{2}$ digit 7 segment display. 1.2 Digital D.C. Voltmeter dual range, $3\frac{1}{2}$ digit 7 segment display 1.3 Digital D.C. Voltmeter $3\frac{1}{2}$ digit 7 segment display. 1.4 Socket for table lamp with intensity control 1.5 Nine different resistance values selected by a band switch 01. Solar Cell mounted. 02. Table Lamp 100 watt. 03. Five different area choppers	1500	2
7	<u>Laser Experiment Kit</u> The Kit Consists of : a) He – Ne LASER (2 mW) with Power Supply, b) Optical bench c) Reflection Grating (15000 lpi, imported), d) Transmission Grating (15000 lpi, imported) e) Photo Detector with holder, f) Knife edge with holder g) Micro positioner Mounts : 4 nos h) Screen with Mount i) Digital Multimeter	3000	1