

K.B.C. North Maharashtra University,
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Ref. No. :kbcnmu/sps/24/2022/18

Date:-11-11-2022

Sealed quotations are invited in the prescribed proforma duly super scribed, thereon, and on the envelope, "QUOTATION", for the following in the **Department of Physics**. The details description of which is described below:

Sr. No	Details of material	Qty	Technical Specifications/ Experiment Kits required
1	Fuel Cell Trainer	01	As per Annexure – A
2	Transistor Characteristics Trainer	01	As per Annexure – A
3	Electricity Lab Trainer	01	As per Annexure – A
4	Magnetism Lab	01	As per Annexure – A

Note: Quotation must be sent to "Head, Department of Physics, North Maharashtra University, Post Box No. 80, Umavi Nagar, Jalgaon-425001 "

- Closing date for the submission of quotations is 19/11/2022.

TERMS AND CONDITIONS

1. The supplier should quote the rates of pertaining to the above product.
2. The product will be accepted only if it confirms to the specifications and / or selection of / by university.
3. The catalogue price list, giving full details and rates of taxes, if any, should be quoted separately. In case, the price list is inclusive of sales tax, a mention to that effect is clearly made. Jalgaon municipal council has been kind enough to extend this university from levying of octroi duty and when demanded a certificate to that effect will be issued and as such octroi charges should not be levied and the price should be exclusive of octroi duty.
4. While quoting the rates, the supplier should bear in mind the condition of home delivery, necessitating transportation charges to be borne by the supplier only.
5. In case, a supplier fails to supply the product and / or refuses to make supply even after placing the order on him, the product will be purchased from the other supplier and in an event the university is required to suffer any loss in

- such a transaction, the first supplier shall have to bear the cost difference to the extent of loss suffered by the university.
6. The payment in respect of all product will be made only after the technical advisor of the university has satisfactorily duly approved the same. In case of imported product, payment will be made through irrevocable letter of credit.
 7. In case, the excise duty is charged, the GP-1 form must be enclosed along with the bill.
 8. The firm falling under the sale tax act and shop act is only eligible to send the quotations. It is essential on the part of the supplier to mention the sale tax registration / certificate No. and shop act No. in the quotations and bills.
 9. The condition of supplier regarding the payment through the bank and condition of advance payment will not be accepted in any circumstances. The payment will be made by cheque only.
 10. The quotation addressed in same of "**Head, Department of Physics, North Maharashtra University, Post Box No. 80, Umavi Nagar, Jalgaon-425001** " should reach the university office within **07 days or before 19/11/2022** of issuing of this notice.
 11. Quotations received by fax will not be accepted. Also, quotations received after due date will not be accepted.
 12. The university reserves the right to accept or reject the quotation without assigning any reason thereof.
 13. The consignment should be strictly supplied into the stipulated period. On the failure, the significant penalty should be paid by the supplier for each delayed day.
 14. While quoting the rates, detailed bifurcation detailed such as basic price, excise duty, sales tax should be given.
 15. We have been exempted from payment of excise duty payable on product required for research project.



Head,
Department of Physics,
North Maharashtra University,
Jalgaon – 425 001

Annexure - A
List of experiments

S. No.	Experiment details
1.	<p><u>Fuel Cell Trainer:</u> Following experiments are required in this kit:</p> <p>1-Study of current-voltage characteristic of electrolyzer function of reversible PEM Fuel Cell 2-Current-Voltage characteristic and power curve of fuel cell function of the reversible PEM fuel cell 3- Study of the application of Fuel cell function of Fan, Lamp, Motor.</p> <p>The setup should include at least the following:-</p> <ul style="list-style-type: none"> a) Reversible Fuel cell with output power : 0.9 V DC and output current : 360 mA b) Solar panel with voltage : 2.2 V, Current : 450 mA c) Application board with Fan, Bulb, buzzer & potentiometer c) Volume of inner containers : 16ml d) Hydrogen, Oxygen Gas Storage
2.	<p><u>Transistor Characteristics Trainer:</u> Following experiments are required in this kit:</p> <p>1-To study the Characteristics of PNP & NPN common base, common collector, common emitter to evaluate- input resistance, output resistance and current gain.</p> <p>The setup should include at least the following:-</p> <ul style="list-style-type: none"> a) Experiment Trainer Board that Contains:- <ul style="list-style-type: none"> i) Digital Voltmeter: 1 mV to 200 V and Ammeter: 1 μA to 200 mA ii) Fixed DC power supply : +12,-12,+5,-5 V DC iii) Transister : BC548, 2N3906 iv) Potentiometer : 02 No's v) Various test point b) Connecting Patch Cords
3.	<p><u>Electricity Lab Trainer:</u> Following experiments are required in this kit:</p> <p>1-Study of resistance as well as series and parallel Connections. 2-Study of Ohm's law,Kirchhoff's Law, Faraday's law Lenz's law, study of Oersted experiments 3- Study of the behavior of current when light bulbs are connected in series and parallel circuit. 4-Study of the characteristics of a transistor. 5-Study of the relay and construct a switching circuit by using relay. 6-Study of the phenomenon of mutual induction 7-construction and Study of step up/step down transformer. 8-Study of the effect of moving I core on a step up transformer and many more experiments Setup must Include atleast the following :-</p> <ul style="list-style-type: none"> 1.Power Supply : 5 V DC ,6 V AC 2.Galvanometer : 30-0-30,Galvanometer Res. : 80 Ω 3.Bulb : 3 Nos (6 V each) 4.Potentiometer 25Ω, 10 KΩ 5.Circuit design facility 6.Relay,transformer stand <p>It should contain a kit having the following:-</p>

	<p>a.coil : 200,800,1600,3200,400 turns b.Bar magnet ,magnetic compass,U E. I core c.I core with long screw, Pieces of soft iron d.Box : with different values of Resistance, potentiometer,capacitor,Diode, Transistor etc e.Digital Multimeter Connecting Patch Cords</p>
4.	<p><u>Magnetism Lab:</u> Following experiments are required in this kit:</p> <ol style="list-style-type: none"> 1. Study of different types and shapes of magnet 2. Plotting of combined magnetic field of the earth and a bar magnet and to locate neutral points and calculate magnetic moment and pole strength of magnet 3. Study of magnetic field line by Magnetic Field demonstrator 4. Study of magnetic levitation by Floating Field Ring Magnet 5. Study of Oersted's Law, Faraday's Law, Lenz's Law and electromagnet 6. Study of the principle of motor by a simple assembly of motor <p>Setup Includes:- Setup should include at least the following :-</p> <ol style="list-style-type: none"> 1. Magnets :- U-Shape, Horse shoe, Cylindrical, Ring, Disc and Bar Magnet 2. Magnetic Field Demonstrator 3. Magnetic Compass 4. Lenz's Law Demonstrator 5. Magnetic Material :- AlNiCo, Ceramic or Ferrite and rare earth magnet(NIB) 6. Motor Assembly :- Coil, Battery and Battery Stand 7. Wooden Mandrel