



# Yogoda Satsanga Mahavidyalaya

(Established in 1967)

NAAC Accredited B++ (CGPA 2.89)

Affiliated to Ranchi University & registered under 2 (F) & 12 (B) of UGC Act



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## NOTICE INVITING QUOTATION

**YSM/...../2023**

**DATE:...../...../2023**

To,

M/s. ....

Dear Sir,

Subject: Request for Quotation for Procurement of Lab Equipment for Physics Department.

You are requested to submit most competitive rates(s) for the following item(s) as per details given below (Sealed Quotations may be sent by hand/ Speed Post/ Courier):

Last date and time for submissions of complete Quotations by	<b>04.07.23</b>
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Sealed quotation in two parts (1) Technical bid & (2) Financial bid should be placed in one envelope & the Sealed Quotation to be submitted superscribed with reference number as appended hereunder:-

Quotation for Supply of ---- Ref.No. YSM/-----/2023 Dated: ...../05/2023  From : M/s----- Address : ----- Contact No. ----- Email ID-----	To, The Principal Yogoda Satsanga Mahavidyalaya Jagannathpur, Dhurwa, Ranchi - 834004
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## DEPARTMENT OF PHYSICS

### LABORATORY REQUISITION

Sl. No.	Item Name	Apparatus With Specification	Qty.
1.	<b>Quincke's Tube Experiment Setup</b> • Quincke's Tube is an instrument	<b>Required Items</b> <b>1. Electromagnet :</b> Made of soft iron, specially design for Quincke's tube experiments, mounted on a wooden base for stable performance Pole Pieces : 50mm dia. Tapered Type Field : 7.5kg at 10mm. air gap	01



	to measure of susceptibility of paramagnetic solution.	<p>Energizing Coils : Two coils each with total resistance of 9 ohms            Digital Power Supply for Electromagnet : 0-6Amp, 60V digital display, It is a constant current power supply, with long time operation and continuously variable current.</p> <p><b>2. Digital Gauss Meter:</b>            Range : 0-2 K Gauss &amp; 0-20 K Gauss            Resolution : 1Gauss at 0-2 K Gauss Range            Accuracy : <math>\pm 0.5\%</math>            Display : 3 ½ Digit , 7 Segment LED            Power : 220V, 50Hz Special Feature: Indicates the direction of the Magnetic field.</p> <p><b>3. Quincke's Tube with Stand :</b>            A Glass Tube with wooden stand</p> <p><b>4. Sample :</b>            FeCl<sub>3</sub> Solution</p>	
2.	<p><b>Hall Effect Experimental Setup</b>            .This is an experiment to determine the mobility of charge carriers.</p>	<p><b>Required Items</b></p> <ol style="list-style-type: none"> <li><b>Wooden Stand</b></li> <li><b>Hall Crystals</b>            N and P Type Hall Crystal Mounted on PCB            Termination : 4 Nos. (2mm for Voltage and 4mm for Current)  <b>10mm Rod</b> mounted on PCB to be Hold at Wooden Stand  <b>Type</b> : N and P  <b>Size</b> : 10mm x 8mm</li> </ol>	01
3.	<p><b>Varification of Curie-Weiss Law</b></p> <ul style="list-style-type: none"> <li>Determination of ferro electric phase transition &amp; verification of Curie-Weiss Law</li> <li>Ferro electric phase transition in Barium Titanate</li> </ul>	<p><b>Required Items</b></p> <ol style="list-style-type: none"> <li>Heater, thermometer and Parallel plate capacitor arrangement            Heating mantel with thermostat  <b>Temperature</b> : upto 200 °C  <b>Heating indication</b> : Yes  <b>Sample</b> : Barium Titanate  <b>Capacitance</b> : Parallel plate capacitor with interchangeable dielectric medium</li> <li><b>Thermometer</b> : Digital battery operated  <b>Range</b> : 300 °C  <b>Resolution</b> : 0.1 °C</li> <li><b>Capacitance Meter</b>  <b>Range</b> : 0-1000 pF  <b>Resolution</b> : 1 pF  <b>Mains Socket</b> : 3 Pin with fused protection  <b>Rated Input</b> : 220 V/50 Hz or 110 V/60 Hz  <b>Power Consumption</b> : &lt;30 W</li> </ol>	01
4.	<p><b>Gouy's Balance Method Experiment Setup</b></p>	<p><b>Required Items</b></p> <ol style="list-style-type: none"> <li>Set of 4 Samples (Aluminium, Brass, Copper, Nichrome)</li> </ol>	01



	<p>• Apparatus for Measurement of Susceptibility of Paramagnetic Solids by Gouy's Method</p>	<p><b>Other Technical Specification :-</b></p> <p>a) <b>Electromagnet</b> : Made of soft iron, specially design for Hall Effect experiments, mounted on a wooden base for stable performance</p> <p><b>Pole Pieces</b> : 50mm dia. Tapered Type  <b>Field</b> : 7.5kg at 10mm. air gap,  <b>Energizing Coils</b> : Two coils each with total resistance of 9 ohms  <b>Termination</b> : 4mm Terminals (30A)</p> <p>b) <b>Digital Power Supply for Electromagnet:</b>  <b>Main Features:</b>          Independent Output with Variac Control          Supplies up to 350W total Power</p> <p>c) <b>Highest Output Resolution</b> : 1mV/1mA          Insulation between three output channels effectively reduce the interference  <b>Low ripple noise</b> : &lt;300 u Vrms/mVpp.  <b>Noise and Ripple (20Hz-7MHz):</b>  <b>Variable Output : CV</b> : <math>\leq 300 \mu\text{Vrms}/2\text{mVpp}</math>  <b>CC</b> : <math>\leq 3\text{mA rms}</math>  <b>Setting Resolution : Voltage</b> : 1mV (Variable Output)  <b>Current</b> : 1mA (Variable Output)</p> <p>d) <b>Digital Gauss Meter:</b>          To find the Magnetic Flux (Electromagnetic Field of any Object)  <b>Technical Specification :-</b>  <b>Range</b> : 0-2 K Gauss &amp; 0-20 K Gauss  <b>Resolution</b> : 1Gauss at 0-2 K Gauss Range  <b>Accuracy</b> : <math>\pm 0.5\%</math>  <b>Display</b>: 3 ½ Digit, 7 Segment LED  <b>Power</b> : 220V, 50Hz          Special Feature: Indicates the direction of the Magnetic field.          Gauss Probe</p> <p>e) <b>Digital Balance:</b>  <b>Capacity</b> : 200 gms  <b>Sensitivity</b> : 1/10 mg. by vernier  <b>Beam</b> : Hard Bronze/ Brass  <b>Arrestment</b> : Circular, falling away type  <b>Air Damping</b> : Very quick and positive, beam coming to rest in 2-3 sec  <b>Chainomatic Device</b> : A gold plated chain is suspended from the beam with its other end screwed on the rotating drum on which a scale graduated from 0 to 10 div each division representing 1mg is installed. By the movement of this scale before a vernier, reading upto 1/10th mg is taken          Sample in the form of a long rod          Set of 4 samples,2 each of Ebonite and wood</p>	
5.	Dielectric Constant in	Required Items	01



	<p><b>Liquid and Solids</b> (Resonance Method)</p> <p>To calculate Dielectric constant of solids.</p>	<ol style="list-style-type: none"> <li>1. R.F. Generator (<b>Range</b> : 9-10 MHz)</li> <li>2. <math>\mu</math>Micro Ammeter (<b>Range</b> : 0-50)</li> <li>3. Potentiometer for Sensitivity selection.</li> <li>4. Test Capacitor For Solid (Metal Aluminium Sheets With Variable Air Gap)</li> <li>5. Test Capacitor For Liquid (Round Metal Aluminium Sheets With Fixed Air Gap)</li> <li>6. Variable Gang Capacitor.</li> </ol> <p>Three type of Bakelite sheets for Dielectric material.</p> <ol style="list-style-type: none"> <li>7. Two sets of Leads</li> </ol>	
6.	<p><b>Babinet Compensator Kit</b></p>	<ul style="list-style-type: none"> <li>• <b>The instrument consists</b> of two-round scales.</li> <li>• One with index and the other with Vernier.</li> </ul> <p>The first scale (index scale) is for tuning the analyzer into the azimuth. The Second scale (Vernier Scale) is for measuring the degree of orientation of a wedge box.</p> <ul style="list-style-type: none"> <li>• The Wedge Box contains two wedges cut in mutually</li> <li>• Perpendicular direction of optics axis in quartz.</li> <li>• The long wedge is movable by means of a micrometer drum, with the help of which accurate reading of the movement is taken.</li> <li>• Micrometer screw minimum reading 0.001cm. (i.e. Least count)</li> </ul>	01
7.	<p><b>Boltzmann's Constant Of PN Junction Trainer Kit</b></p> <ul style="list-style-type: none"> <li>• Study of Boltzmann's Constant in PN Junction.</li> </ul>	<p><b>The instrument consists</b></p> <ul style="list-style-type: none"> <li>• <b>Fuse:</b> 2A</li> </ul> <p><b>Digital Meters:</b></p> <ul style="list-style-type: none"> <li>• Digital Ammeter 200<math>\mu</math>A/200mA DC.</li> <li>• Digital Voltmeter 6VDC.</li> </ul> <p><b>Power Supplies:</b></p> <ul style="list-style-type: none"> <li>• DC Supply IC Regulated 0-6V DC, 150mA.</li> <li>• Operated on Mains power 230V, 50Hz <math>\pm</math>10%</li> </ul> <p><b>Thermometer:</b></p> <p><b>Type :</b> Mercury</p> <p><b>Temperature Range :</b> 0-110°C</p> <p><b>Least Count :</b> 1°C</p> <p><b>Length :</b> 300mm approx.</p> <p><b>Band Gap Arrangement:</b></p> <p><b>Diode :</b> Ge, 1N60</p>	01
8.	<p><b>Verification of Malus Law (Optical Bench Rod Type)</b></p> <p>In this experiment, Malus law of polarization is verified</p>	<p><b>Required Items</b></p> <ol style="list-style-type: none"> <li>1. Polarizer With Mount</li> <li>2. Analyzer With Mount</li> <li>3. Photo Detector</li> <li>4. LDR With Mount</li> <li>5. Diode Laser 2mW with Power Supply</li> </ol> <p><b>Standard Accessories:</b></p> <ol style="list-style-type: none"> <li>6. Patch Cords 4mm.</li> </ol>	01



9.	<p><b>Stefan's Constant Apparatus Kit</b></p> <ul style="list-style-type: none"> <li>• Study of V-I Characteristics of Filament Lamp</li> </ul>	<p><b>The instrument consists</b></p> <p><b>Analog Meters:</b></p> <ul style="list-style-type: none"> <li>• Analogue Voltmeter 12V DC.</li> <li>• Analogue Ammeter 250mA DC.</li> </ul> <p><b>Power Supplies:</b></p> <ul style="list-style-type: none"> <li>• DC Supply IC Regulated 0-12V DC, 250mA.</li> <li>• Operated on Mains power 230V, 50Hz <math>\pm 10\%</math></li> </ul> <p><b>Components are mounted on the panels are:</b></p> <ul style="list-style-type: none"> <li>• Bulb 12V, 250mA</li> <li>• Voltage Control through Potentiometer.</li> </ul>	01
10.	<p><b>555 Timer Circuit Trainer Kit</b></p> <p>To study the IC 555 as a Monostable (One-shot) Mutivibrator</p> <ul style="list-style-type: none"> <li>• To Study the IC 555 as an Astable (Free-Running) Mutivibrator</li> <li>• To Study the IC 555 as an Bistable Mutivibrator</li> </ul>	<p><b>The instrument consists</b></p> <p><b>Power Supplies:</b></p> <ul style="list-style-type: none"> <li>• DC Power Supply IC Regulated +15V DC, 150mA.</li> <li>• Operated on Mains power 230V, 50Hz <math>\pm 10\%</math></li> </ul> <p><b>Components are mounted on the panels are:</b></p> <ul style="list-style-type: none"> <li>• Passive Components are mounted on board behind the panels are</li> <li>• RESISTANCE</li> <li>• CAPACITORS</li> <li>• IC NE555</li> <li>• VARIABLE RESISTOR 10K</li> <li>• PULSAR SWITCH</li> </ul>	01
11.	<p><b>Planck's constant apparatus using photo cell</b></p> <p>Experiment:</p> <ul style="list-style-type: none"> <li>• Study of Photo Electric Effect</li> </ul>	<p><b>The instrument consists</b></p> <p><b>Power Supplies:</b></p> <ul style="list-style-type: none"> <li>• DC Supply 0-5V DC, 150mA (With Negative and Positive Polarity)</li> <li>• Operated on Mains power 230V, 50Hz <math>\pm 10\%</math></li> </ul> <p><b>Digital Meters:</b></p> <ul style="list-style-type: none"> <li>• Digital Ammeter 20uA DC.</li> <li>• Digital Voltmeter 20V DC.</li> </ul> <p><b>Components are mounted on the panels are :</b></p> <ul style="list-style-type: none"> <li>• Zero Setting through 10 Turn Potentiometer.</li> <li>• Voltage Control through Potentiometer.</li> <li>• Stand to hold Photo Cell enclosed in metal box.</li> <li>• Light Source is housed in suitable box with Intensity Control.</li> <li>• Color Filters: Red, Yellow, Green, Blue and Violet.</li> <li>• Stand to hold color filter.</li> <li>• BNC to BNC lead for interconnection.</li> </ul>	01



12.	<b>RC Phase Shift Oscillator Trainer Kit</b>  Study and Construction of RC Phase Shift Oscillator	<b>Components are mounted on the panels are:</b> 741 Op-Amp Resistors Capacitors Variable Resistor Output Performance Approximate	01
13.	<b>Bread Board with cables</b>	Dimension: 30 x 8 x 2 Centimeters	03
14.	<b>Digital Multimeter</b>	<b>Product Features :</b> <ul style="list-style-type: none"> <li>• Display: 3 ½ digit display with 1999 counts</li> <li>• Over Range Indication: "1"</li> <li>• Operating Temperature &amp; Humidity: 0°C to 40°C &lt; 75% RH</li> <li>• Storage Temperature &amp; Humidity: -10°C to 50°C &lt; 75% RH</li> <li>• Polarity Indication: Displayed For Negative Polarity</li> <li>• Data hold Function</li> </ul> <b>Technical Specification:-</b> <b>DC Current :</b> 200µA/2mA/20mA/200mA/10A(5 Ranges) <b>AC Voltage :</b> 20V0/600V(2 Ranges) <b>DC Voltage :</b> 200mV/2V/20V/200V/600V(5 Ranges) <b>Resistance :</b> 200Ω/2kΩ/20kΩ/200kΩ/2MΩ(5 Ranges) <b>Transistor :</b> HFE PNP & NPN 0~1000 <b>Diode :</b> Yes <b>Continuity :</b> Yes	01
15.	<b>Zener Diode Characteristic Trainer Kit</b>  Study of V-I Characteristics of Zener Diode in Forward and Reverse Bias.	<b>The instrument consists</b>  <b>Analogue Meters:</b> <ul style="list-style-type: none"> <li>• Analogue Ammeter 15mA/150uA DC.</li> <li>• Analogue Voltmeter 15V DC.</li> </ul> <b>Power Supplies:</b> <ul style="list-style-type: none"> <li>• DC Supply IC Regulated 0-15V DC, 150mA.</li> <li>• Operated on Mains power 230V, 50Hz +10%</li> </ul> <b>Components are mounted on the panels are:</b> <ul style="list-style-type: none"> <li>• Zener Diode 5.1V</li> <li>• Zener Diode 6.2V</li> </ul>	01
16.	<b>Spectrometer Prism, Size :</b> 32mm x 32mm	Crown, R.I 1.5 234/2 D.Flint, R.I. 1.62 234/3 E.D.F, R.I. 1.65 234/4 D.E.D.F., R.I. 1.71	One piece each



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17.	<b>PN Junction Diode Characteristics Trainer Kit</b>  Study of V-I Characteristics of PN Junction in Forward and Reverse Bias.	<b>The instrument consists</b>  <b>Analogue Meters :</b> Analogue Ammeter : 10mA Analogue Ammeter : 100uA DC. Analogue Voltmeter : 3V Analogue Voltmeter : 30V DC. <b>Power Supplies :</b> • DC Supply IC Regulated 0-3 / 30V DC, 150mA. • Operated on Mains power 230V, 50Hz +10% <b>Components are mounted on the panels are:</b> • Silicon Diode (1N4007) • Germanium Diode (OA79) • Voltage Control through Potentiometer.	01
18.	<b>Strain Gauge Transducer Trainer Kit</b>  Study of Strain Measurement using Strain Gauge Transducer	<b>Components are mounted on the panels are :-</b> • Resistors • Capacitors • IC AD620 • Variable Resistor For Gain and Zero Setting • Bridge Circuit on Board. • Differential Amplifier With Feedback • Lead Compensation System • O/P Provided On Test Points for Monitoring & Controlling.	01
19.	<b>Water Level Measurement Using Capacitive Transducer Trainer Kit</b>	<b>The instrument consists</b>  <b>Technical Specification:-</b> <b>Display :</b> LCD 16x2 <b>Power Supplies:</b> DC Supply IC Regulated +12V, +5V DC, 150mA. Operated on Mains power 230V, 50Hz +10% <b>Components are mounted on the panels are:</b> • 89C51 Microcontroller • Relay • Buzzer • Water Jar 2Litre with Capacitive Sensor 3Nos. <b>Salient Feature:</b> Front panel built with high class insulated Printed Circuit Board sheet with well printed circuits and symbols. Fuse for Short Circuit protection Connections are brought out through 10Pin FRC Male The trainer is housed in ABS Plastic cabinet. Size of the trainer set 12" x 8"	01
20.	<b>Linear Variable Displacement Transducer</b>	<b>Technical Specification:-</b> <b>Power Supplies:</b> • DC Dual Power Supply IC Regulated +12V DC , 150mA.	01



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	<b>(LVDT) Trainer Kit</b> Study to Linear Variable Displacement Transducer	<ul style="list-style-type: none"><li>• Operated on Mains power 230V, 50Hz <math>\pm 10\%</math></li></ul> <b>Digital Meters:</b> <ul style="list-style-type: none"><li>• Digital Voltmeter 200mV (Distance in mV)</li></ul> <b>Audio Function Generator:</b> <ul style="list-style-type: none"><li>• 4 KHz fixed Sine wave Oscillator having amplitude 0–10V (P–P).</li></ul> <b>Components are mounted on the panels are:</b> <ul style="list-style-type: none"><li>• Resistors</li><li>• Capacitors</li><li>• IC 741</li></ul>	
21	<b>LCR Resonance Apparatus (Series &amp; Parallel) With Digital Meters</b>	<ul style="list-style-type: none"><li>. Power Requirements 230V AC, <math>\pm 10\%</math></li><li>. Frequency 50Hz</li></ul>	01

1. Technical Compliance should be submitted.
2. Original bills in triplicate along with the warranty card will have to be issued by the party to whom order is issued.
3. HSN code of the material should be mentioned in quotation.
4. All entries in the quotation should be typed or computer printed without any ambiguity and should be free from correction etc.
5. Late and delayed tenders will not be considered. In case any unscheduled holiday occurs on prescribed closing date the next working day shall be the prescribed date of closing.
6. The quotation should be submitted with descriptive literature & drawing. The make of the items offered should be clearly specified.
7. Material should be confirming to our specification. The deviations if any should be clearly indicated in the quotations.
8. Successful bidder has to furnish the OEM test certificates along with the materials (if applicable).
9. Rate /Price: The offered price shall be on **FOR Yogoda Satsanga Mahavidyalaya Delivery basis**.
10. If offered Price Term is other than the FOR-Destination term, approximate Freight & forwarding charges along with the applicable Insurance charges may be mentioned.
11. GST and PAN certificate should be furnished along with quotations.
12. Purchaser will not pay separately for transit insurance/taxes (if any) and the supplier will be responsible until the stores arrive in good condition at the destination.
13. Warranty: Period of warranty should be clearly mentioned and also the parts covered under it. Warranty will be applicable from the date of successful installation.
14. Service Facility: Supplier must mention about the service set up in India & confirm effective after sales service.



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15. Yogoda Satsanga Mahavidyalaya is not bound to accept the lowest or any quotation for whatsoever reason and reserve its right to accept or reject in whole or in part any or all the quotations received without assigning any reason.
16. Applicable taxes shall be quoted separately for all items and levies payable by the supplier under the contract shall be included in the unit price.
17. Each bidder shall submit only one quotation.
18. Training clause (if any) to be mentioned if applicable.
19. **Delivery period should be mentioned clearly in the quotation.**
20. Conditional tenders will not be considered.
21. **Authorized dealership certificate should be submitted in case principal manufacturing company is not quoting directly.**
22. Copy of Purchase Orders for similar equipment supplied to any other organization desired.
23. Annual turnover of company for last 3 year / CA Certificate to be provided.
24. Declaration required by the vendor that the price quoted are lowest that I have supplied to any other organization.

Principal  
Yogoda Satsanga Mahavidyalaya