

OFFICE OF THE PRINCIPAL GOVT. P.G. COLLEGE HISAR

To

M/s WEB PORTAL

Memo No. 3497

Dated: 21.09.2023

Subject: Quotation for purchase of items required for physics laboratory.

Please quote the lowest rates for following items. The rates should be inclusive of freight and other charges F.O.R. Govt. College Hisar. The rates quoted by you will be valid for one year. The quotation should reach this college office on or before 08-10-2023 in a sealed envelope with "QUOTATION FOR PHYSICS LABORATORY ITEMS" & address of firm written on the envelope. Conditional quotations will be rejected. S.T./VAT will be paid as per Government rules.

- | Sr. No | Name of item and specifications  |
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| 1      | <b>Transistors Characteristics Apparatus-Common Base (designed by using latest technology) - Fitted With two Regulated D.C. Variables Power Supplies, fitted with both PNP &amp; NPN Transistors, Two Digital Voltmeters (D.C.) of suitable ranges, Two Digital Ammeters (D.C.) of suitable ranges. Good quality sufficient no. of sockets &amp; pins each with 4mm size, connecting leads (made from 1.5 mm wires) &amp; potentiometers for fine adjustments of voltages (Complete in all respects)</b>   |
| 2      | <b>Transistors Characteristics Apparatus-Common Emitter (designed by using latest technology) - Fitted With two Regulated D.C. Variables Power Supplies, fitted with both PNP &amp; NPN Transistors, Two Digital Voltmeters (D.C.) of suitable ranges, Two Digital Ammeters (D.C.) of suitable ranges. Good quality sufficient no. of sockets &amp; pins each with 4mm size, connecting leads (made from 1.5 mm wires) &amp; potentiometers for fine adjustments of voltages (Complete in all respects)</b>  |
| 3      | <b>Apparatus for study of frequency Response of Common base transistor Amplifier -(designed by using latest technology) fitted with signal source (Oscillator) of variable frequency 20Hz-1 MHz range &amp; 0-100 mV (fine Control) fitted with digital frequency meter &amp; digital voltmeters 0-50 mV AC (for measuring input signal voltage) and 0-10 V AC (for measuring output signal voltage). Good quality sufficient no. of sockets &amp; pins each with 4mm size, connecting leads (made from 1.5 mm wires) &amp; potentiometers for fine adjustments of voltages (Complete in all respects)</b>     |
| 4      | <b>Apparatus for study of frequency Response of Common Emitter transistor Amplifier -(designed by using latest technology) fitted with signal source (Oscillator) of variable frequency 20Hz-1 MHz range &amp; 0-200 mV (fine Control) fitted with digital frequency meter &amp; digital voltmeters 0-200 mV AC (for measuring input signal voltage) and 0-20 V AC (for measuring output signal voltage). Good quality sufficient no. of sockets &amp; pins each with 4mm size, connecting leads (made from 1.5 mm wires) &amp; potentiometers for fine adjustments of voltages (Complete in all respects)</b> |
| 5      | <b>Apparatus for Study of Ripple Factor in rectifier outputs-(designed by using latest technology) - complete in all respects fitted with AC source 12-0-12 V, diodes, bridge rectifier diodes, two capacitors each 220 µF, inductor 0.1 H, variable calibrated load resistance 10 ohm to 10 kilo ohm Digital meters voltmeters 0-01 V A.C., 0-10 V A.C., 0-06 V D.C., 0-20 V DC. Good quality sufficient no. of sockets &amp; pins each with 4mm size, connecting leads (made from 1.5 mm wires) &amp; potentiometers for fine adjustments of voltages (Complete in all respects)</b>                         |
| 6      | <b>Apparatus for Study of rms, average &amp; peak value in output from rectifiers using Electronic Voltmeter- fitted with signal source 50 Hz-1.0 kilo Hz, 0-06 V, digital voltmeters of range 0-10 V AC, two DVM 0-10 V DC &amp; sufficient no. of diodes &amp; sockets, capacitors &amp; resistances (complete in all respects).</b>   |



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- 7 **Apparatus for Study of Electric Resonance in series and parallel LCR circuits-(designed by using latest technology)** - Fitted with signal source 0-100 KHz, 0-06 V frequency meter, inductor 0.1 H quoted DC resistance, capacitors 0.015  $\mu$ F, 0.022  $\mu$ F, resistances 100 ohm, 300ohm, digital voltmeter 0-06 V A.C., digital ammeter 0-10mA A.C. complete in all respects fitted with Digital meters of suitable range.
- 8 **Apparatus for determination of Impedance of LCR circuit** complete with AC source 0-30 V, inductor 1 H with its DC resistance printed on board, capacitors 1  $\mu$ F , 2.2  $\mu$ F, resistances 470  $\Omega$ , 1 k $\Omega$ , digital voltmeter 0-10 V AC, 0-30 volt A.C., digital ammeter 0-30 mA A.C. (complete in all respect).
- 9 **Sextant:** - Made of Chrome plated Brass having main scale in 65 degrees arc calibrated to 130 degrees Least Count 12" with superior quality telescope, heavy steel stand with adjustable height from 3feet to 4.5 feet fitted with clamp for fixing sextant, heavy base fitted with leveling screws (complete in all respects).
- 10 **Prisms** of different size made of borosilicate Crown glass, flint glass, dense flint glass, and extra dense flint glass. Sizes base 3 cm & height 4 cm, base 2 cm & height 2.5 cm.
- 11 **Newton's Ring Apparatus** fitted with plano-convex lens of diameter 6 cm & optically plane glass plates of diameter 6 cm with aluminum frame for holding lens & plates, wooden stand, travelling microscope with least count 0.01 mm with adjusting screws (SUPERIOR QUALITY and complete in all respects).
- 12 **Apparatus for study of Resolving Power of Telescope**-Adjustable slits fitted with micrometer having least count 0.01 mm & superior quality telescope, heavy clamp stand with leveling screws.
- 13 **Apparatus for Comparison of Illuminating powers of two lamps**- Complete in all respects fitted with good quality L.B. photometer, Uprights & heavy Optical bench (SUPERIOR QUALITY and complete in all respects).
- 14 **Travelling Microscope** with heavy base fitted with leveling screws having vertical & horizontal scales with least count of main scale 0.5mm and least count of vernier scale 0.01 mm having fine adjustment screws, fitted with chrome plated brass scale. Good quality objective and eye piece lenses (all parts of SUPERIOR QUALITY).
- 15 **Digital A.C. mill voltmeter** with different ranges 0-3m V, 0-10m V, 0-30m V, 100 mV, 0-300 mV, 0-1 V, 0-10 V, 0-30 V, 0-100 V, 0-300 V, decibel range -50to+50 dB, Frequency Range 5 Hz-1 Mhz.
- 16 **He-Ne LASER GUN** output power-2m W SUPERIOR QUALITY (Complete in all respects).
- 17 **Apparatus for study of B-H Curve** of ferromagnetic materials (Complete in all respects) supported by technical manual.
- 18 **Apparatus for determination of velocity of ultrasonic waves in CCL<sub>4</sub>** Complete in all respects supported by technical manual.
- 19 **Sodium vapor lamp** tube type without coating 35W, 45W Phillips make.
- 20 **Mercury vapor lamp** tube type without coating 70W Phillips make.
- 21 **Auto-leak transformer** for 35W, 45W required with Sodium lamp.
- 22 **Digital Stop watch** size 4 inches X 3 inches with 0.1 Second least counts.
- 23 **Hanger with slotted weights** for fly wheel experiment (50 gm each).
- 24 **Jaeger's Apparatus** with airtight bottle, Manometer, fitted on good quality wooden stand & transparent pipes (complete in all respects).
- 25 **Maxwell's needle Apparatus** with good quality mirror, chrome plated brass pipe & cylinders (complete in all respects).
- 26 **Searle 's Apparatus** With good quality chrome plated brass rods of size 30 cm X 1 cm X 1cm and having pipe stand with specimen wire of pure material & permanent fittings (complete in all respects).
- 27 **Apparatus for determination of E.C.E. of hydrogen** with good quality electrodes and ammeter of 0-500 mA range with appropriate DC power supply, with good quality calibrated glass burette of 1 meter length and good quality glass trough (thickness >0.3 mm) of diameter >25 cm, height >10 cm (complete in all respects).

- 28 **Apparatus for determination of frequency of A.C. mains using Electrical vibrator**- Electrical vibrator with 30 cm long steel rods having adjusting screws for fittings rod, solenoid electromagnetic coil, aluminum pan and weights box, frictionless pulley (complete in all respects)
- 29 **Apparatus for determination of frequency of A.C. mains using Sonometer** - wooden box size 120 cm X 15 cm X 15cm fitted with pulley wire support & wedges, 0.5 kg slotted weights with hanger, Electromagnet with stand.
- 30 **Apparatus for study of characteristics of P.N. Junction diode** - Fitted with silicon & germanium diode, regulated power supply 0-30 V, digital voltmeter 0-1 V DC, 0-30 V DC, digital ammeter 0-100  $\mu$ A DC, 0-100 mA DC. Good quality sufficient no. of sockets & pins each with 4mm size, connecting leads (made from 1.5 mm wires) & potentiometers for fine adjustments of voltages (Complete in all respects)
- 31 **Apparatus for study of voltage regulation characteristics of Zener diode** with regulated power supply 0-25 V DC, 0.2 A, series resistances 150  $\Omega$ , 500  $\Omega$ , 1000  $\Omega$  fitted with five Zener diodes with different break down voltages, 2 digital voltmeters 0-25 V DC, variable calibrated load resistance 10 $\Omega$  to 10 k $\Omega$ . Good quality sufficient no. of sockets & pins each with 4mm size, connecting leads (made from 1.5 mm wires) & potentiometers for fine adjustments of voltages (Complete in all respects)
- 32 **Spectrometer** - with chrome plated brass scale. Least count of main scale 0.5 degree and least count of vernier scale 1', superior quality collimator & telescope, heavy base with leveling screw, screw for minor adjustments.
- 33 **Telescope** superior quality with foxing & leveling screw & clamp for fixing and heavy base stand.
- 34 **U tube for Jaeger's experiment** apparatus of good quality glass.
- 35 **Grating 15000 Lines per inch**-Superior quality, with grating holder.
- 36 **Frequency Sinewave Generator** of frequency range 50 MHz.
- 37 **Plano Convex Lens** of Diameter 60mm
- 38 **Plane glass** of diameter 60 mm.
- 39 **Double slit** for He-Ne laser Experiment.

**Note:** - The electronics apparatus should be based on latest technology. The electronic component used in above circuits must be of optimum range, digital ammeters & voltmeters should be used in all apparatuses. Electronics kits should be fitted metal boxes with transparent top. Each apparatus should be supported by laboratory manual.

**TERMS & CONDITIONS:** -

Quotation received after due date will be rejected.

1. Sales tax/VAT will be paid as per govt. rules.
2. The rates should be minimum, F.O.R Govt. College, Hisar & strictly according to specifications by the purchaser (this college).
3. Payment will be made by Cheque only after the satisfactory inspections of apparatus/items/ material supplied by your firm
4. The rates quoted by you will be valid for one year

*Acharya*  
21/9/23  
Principal

Govt. College, Hisar

*Wali*