

OFFICE OF THE PRINCIPAL, DERABIS COLLEGE, DERABISH, Dist – KENDRAPARA

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QUOTATION CALL NOTICE

Sealed quotation are invited from registered firms / suppliers / having GSTIN and PAN for supply of science Laboratory equipments. The quotation must reach to the undersigned on or before 15 days (before 10-11-2021)by registered or speed post. For the supply of Lab. Equipments (Both +2 & +3 Science). The undersigned reserved the right to cancel / reject all or any one of the quotation without assigning any reason there of.

S. Sekhri
Principal
DERABIS COLLEGE
DERABIS

PHYSICS
LIST OF EQUIPMENTS

Department of Physics, Derabish Degree College, Derabish.

- 1) Measurement of Susceptibility of Paramagnetic Solution (Fe_2Cl_3) (Quinck's Tube Method)
 - i) Quinck's Tube
 - ii) Electromagnet
 - iii) Search Coil
 - iv) Ballistic Galvanometer
 - v) Standard Solenoid
 - vi) Travelling Microscope
 - vii) Manganese Chloride / Ferric Chloride Solution.
 - viii) A Sprit level.

- 2) Determine the Hall coefficient of a semiconductor sample.
 - i. Semiconductor sample (P-Type/ N-type Ge single crystal)
 - ii. Hall probe stand (four spring type pressure contact mounted on sunmica backlite strip.)
 - iii. Digital Gauss meter.
 - iv. Electromagnet (Pole Pieces)
 - v. Voltmeter (High Range)
 - vi. Power supply (Regulated) Auto Transformer.
 - vii. Two Commutators
 - viii. Storage Cell of 12V
 - ix. Galvanometer
 - x. Two resistance boxes (2000Ω)
 - xi. Stretched wire potentiometer with jockey.
 - xii. Standard solenoid.
 - xiii. Ballistic Galvanometer.
 - xiv. Search Coil

- xv. Ammeter (0-500mA)
- xvi. Voltmeter (Mv)
- xvii. Rheostat (High range ohm)
- xviii. DC Source (0 – 20 Volt, 4A)
- xix. Plug Key

3) Draw the BH Curve of Fe using solenoid, determine energy loss from Hysteresis.

- i) Deflection Magnetometer
- ii) Magnetizing coil of about 100 turns in the form a solenoid.
- iii) A compensating coil (C.C) of about 100 turns.
- iv) Specimen.
- v) A DPDT switch
- vi) A battery (9V, 2A)
- vii) Ammeter (0-500mA)
- viii) Rheostat, plug key & connecting wires.

4) Measure the bandgap of a semiconductor (Ge) by four-probe method

- i) Ge crystal
- ii) Four-probe setup
- iii) Oven
- iv) Constant current Generator / D.C source.
- v) Thermometer
- vi) Ammeter (mA)
- vii) Voltmeter (mV)
- viii) Digital panel meter
- ix) LED

5) Study of basic gates:

- i) AND, OR, NOT, NAND etc. gates (Complete set)
- ii) Electronic / Digital (Logic kits & connecting wires)

6) Verify the law of Mallus for plane polarized light.

- i) Optical bench

- ii) Halogen Lamp with house & slit.
- iii) Double convex lens.
- iv) Polarizer
- v) Analyzer fitted at the ends of a metallic tube with graduated circular scale capable of rotating about its own axis.
- vi) Photo- voltaic cell.
- vii) Micro-ammeter.

7) Determine the specific rotation of sugar solution using polarimetry.

- i) Laurents' half -shade polarimetry.
- ii) Sugar solution
- iii) Sodium lamp / (Monochromatic source of light)
- iv) Weight box
- v) Beaker
- vi) Graduated cylinder
- vii) Tunnel
- viii) Pipette
- ix) Glass rod
- x) Filter paper.
- xi) Nicol prism (Polarizer), Quartz half-shade plate.
- xii) Nicol prism (Analyzer),
- xiii) Telescope with eye-piece, scale
- xiv) Optically active liquid in tube of known length.

8) Analyze elliptically polarized light by using a Babinet's compensator.

- i) Babinets' compensator
- ii) Sodim lamp
- iii) Quarter wave plate
- iv) 100 watt lamp.

9) Verify the stefan's law of radiation & to determine stefan's constant.

- i) (I.C) Regulated variable d.c power supply (0-10V DC, 2A)
- ii) Digital Voltmeter (0-20v DC)

- iii) Digital Ammeter (0-2A DC)
- iv) In-candescent bulb (lamp) (6v, 10w)
- v) Wires & patch cords.

10) To measure the dielectric constant of a solid & its polarizability by resonance method.

- i) A radio frequency (R.F) oscillator (variable) with variable output power.
- ii) A variable calibrated capacitor (50-500PF)
- iii) A circular parallel plate capacitor in which a dielectric can be inserted / removed easily.
- iv) V.T.V.M
- v) A.C milli voltmeter
- vi) Inductance (L) made up of few turn 18 S.W.G enamelled copper wire with diameter of about 1.5 cm.

11) To study the polarization of light by reflection & polarizing angle.

- i) 60 watt incandescent lamp.
- ii) Convex lens
- iii) Glass plate
- iv) Polaroid
- v) Photo voltaic cell
- vi) Rheostat
- vii) Micro-ammeter.

12) To determine charge of an electron by Millikan's Oil drop Method.

- i) A ready made apparatus specially fabricated for the expt. is available with the specifications required.
- ii) Stop watch.

13) Boiling Point of a liquid by Platinum resistance thermometer.

- i) Platinum resistance thermometer apparatus ii) P.O. Box, iii) Meter bridge, iv) Battery, v) Rheostat vi) Galvanometer (G), vii) Commutator (K), viii) Ice bath ix) Hypsometer. x) Expt. liquid & connecting wires.

14) Calibration of a thermocouple thermometer.

- i) Thermocouple arrangement ii) Ballistic galvanometer.

15) Wavelength of Sodium light using a plane transmission grating.

- i) Grating ii) Spectrometer iii) Sodium lamp iv) Spirit level.

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CHEMISTRY

- 1) Salicytic acid – 100gm *Meneu*
- 2) Acetic Anhydride – 250ml *”*
- 3) P- Aminophenol- 100gm *”*
- 4) Magnesium Hydroxide-250gm *”*
- 5) Aluminium Chloride – 250gm *”*
- 6) Propylt amine – 250gm *”*
- 7) Magnesium chloride – 250gm *”*
- 8) Dimethicone – 250gm *”*
- 9) Aluminium Hydroxide – 250gm *”*
- 10) Potassium Hydroxide – 250gm *”*
- 11) Iodine monochloride – 1 ltr. *”*
- 12) Iodine – 250gm *”*
- 13) Chloroform – 0.5 ltr.
- 14) Ferric Ammonium Salphate – 250gm
- 15) Sodium actale – 250gm
- 16) Buffer solution (acedic) – 0.5ltr.
- 17) Copper carbonate – 250gm
- 18) Ammonium Hydroxide – 2.5lit
- 19) Ammonium Carbonate – 250gm
- 20) Ferrous sulphate – 250gm
- 21) Sodium sulphite – 250gm
- 22) Test tube – 1 gross
- 23) Buchner funnel – 1 no.
- 24) Air condenser – 1no.
- 25) Sand bath – 5nos.
- 26) Micro burette – 1no.
- 27) Spectro photometer – 1 no.

Botany

+2 wing

1. PH METER (Digital)
2. Ganong's potometer (Borosilicate)
3. Farmer's photometer (Borosilicate)
4. T/A apparatus (Borosilicate)
5. Wilmott's bubbler (Borosilicate)
6. Cork borer (Steel)
7. Hard glass test tube with hard rubber cap (Borosil)
8. Chromatography paper
9. Petroleum Benzene (Merck) 2.5 L
10. Acetone (Merck) 2.5 L
11. Acetocarmin (100 ml) (Merck)
12. Acetoorsim (100 ml) (Merck)
13. Absolute Alcohol 2.5 L
14. Test tube stand (Wooden)
15. Spirit lamp (Glass)
16. Measuring cylinder (Borosil) 100,20,50 ml
17. Glass Fummel (Borosil) Big, small, middle
18. Glass beaker (Borosil) 500,200,100 ml
19. Reagent dropping box (125 ml)- 50 nos
20. Pippet (Borosil) 1,2,5 ml
21. Glass capillary tube (Jet) 1 pkt
22. Slides
 - i. Mitosis } Original
 - ii. Meiosis }
23. Light Microscope
24. Compound Microscope
25. Petriplate (4" diameter)
26. Watch glass (4" diameter)

+3 Wings

1. Slides of Bacteria
 - i. Cocci
 - ii. Spherical
 - iii. Bacilli
 - iv. Rod shaped
 - v. Spirilli
2. Crystal Violet/Methyl Violet
3. Iodine Solution
4. Cotton Blue
5. Conical flask (Borosil) 500, 100, 50 ml
6. Inoculatory Needle (Steel)
7. Autoclave
8. Centrifuge
9. Aluminium foil
10. Peptone 500gm
11. Agar agar (Powder) 500gm
 - Specimen oPtef dissecting (small bottle)
 - Algae- *Volvax*, *Chlorella*, *Oedogonium*, *Ulthrix*, *Zygnema*, *Vaucheria*, *Cara*, *Ectocarpus*, *Fuccus*, *Lumimaria*, *Oscillatoria*, *Batrachospermum*, *Polysiphonia*, *Diatom*.
 - Fungi- *Saprolegria*, *Phytophtra*, *Phytium*, *Pencillium*, *Rhizopus*, *Saccharomycetes*, *Aspargillus*, *Peziza*, *Erysiphe*, *Agaricus*, *Ustilagopuccima*, *Altermeria*, *Fusarium*
 - Late blight of potato (Infected leaf) Rust of Wheat (Infected leaf)
 - Lichen- *Frctiose*, *Crustose*, *Foliose* (samples)
 - Bryophyta- *Ricca*, *Marchantia*, *Pellia*
 - Pteridophyta- *Psilotum*, *Lycopodium*, *Selagiemella*, *Isotes*, *Equisetium*, *Ophioglossium*, *Marsilea*.
 - Gymnosperm- slides
 - T S of needle of pimus
 - T S of male cone of pimus
 - T S of leaf of Gmetum species
27. Ganong's potometer (Borosilicate)
28. Farmer's photometer (Borosilicate)
29. T/A apparatus (Borosilicate)

30. Wilmott's bubbler (Borosilicate)
31. Darwin's photometer for stomatal opening
32. Measurement of photosynthesis by Ganong's photo synthetic method

BIOCHEMISTRY

1. L-naphthol- 100 ml
2. Sulphuric acid-500 ml
3. Fehling's solution-(A&B)
4. Copper sulphate solution 500 ml
5. Sodium Bicarbonate 500 gm
6. Ninhydrin solution
7. Sudhan iii stain
8. PH indicator paper(1-14) 10 no
9. Washing bottle (plate) 15 no

ZOOLOGY +2 WINGS

MUSEUM SPECIMEN

Cuckoo

Scoliodon

Frog

Pigeon

CHARTS

Male reproductive system

Femle reproductive system

Chemical

Starch powder

Distilled water

PH meter (digital)

Iodine solution (1%)-500ml

Fehling's solution(A and B)

Absolute alcohol 2.5 L

Phenolphthalein(1%)

Soyaben powder

Benedicts solution 250ml

Instrument

1. Micropipette(1-10,5,10, 20 100 micro litter)
2. BURETTE(PLASTIC) 6NOS
3. Pipette1,2,5,10 ml
4. Testtubes (100)
5. Cavity slide (10)

+3 wings

1. ABO blood group kit
2. $\text{MnSO}_4 \cdot \text{H}_2\text{O}$ 500ml
3. Alakaline Iodine solution 500ml
4. $\text{Na}_2\text{S}_2\text{O}_3$
5. Starch indicator
6. Phenolphthalein indicater
7. N/10 Na_2CO_3
8. Bod bottles 10 nos
9. Bod incubator
10. Phosphate buffer for BOD
11. MgSO_4 250 ml
12. CaCl_2 powder
13. $\text{K}_2\text{Cr}_2\text{O}_7$
14. $\text{Fe}(\text{NH}_4)_2\text{SO}_4$
15. FeCl_3
16. Na_2SO_4
17. Ferroin indicator
18. H_2SO_4
19. HgSO_4
20. Ag_2SO_4
21. Wbc diluting fluid
22. Rbc diluting fluid
23. Neubauer's Haemocytometer(5)
24. Wbc\rbc pipette
25. Sahils haemmometer (5)
26. Spirit lamp(glass)-3
27. Glacial acetic acid
28. Ether 250 ml
29. Sodium citrate 250ml
30. Centrifuge
31. Horizontal electrophoresis unit
32. AGAR POWDER
33. TEMED
34. ETHYL BROMIDE
35. Testube stand 5nos
33. Measuring cylinder (Borosil) 100,20,50 ml
34. Glass Fummel (Borosil) Big, small, middle

35. Glass beaker (Borosil) 500,200,100 ml
36. Reagent dropping box (125 ml)- 50 nos
37. Pippet (Borosil) 1,2,5 ml
38. Glass capillary tube (Jet) 1 pkt
39. Slides
 - iii. Mitosi }Original
 - iv. Meiosis
40. Light Microscope
41. Compound Microscope
42. Petriplate (4'' diameter)
43. Watch glass (4'' diameter)
44. Chick embryo 24,36, 48, 53, 72, 96 hrs