

BIOLOGY LABORATORY

LIST OF REQUIREMENTS - FOR A CLASS OF 30 STUDENTS

CLASSES XI & XII

<u>APPARATUS</u>		<u>QUANTITY</u>
1. Dissecting microscope	-	3
2. Compound microscope	-	10
3. Electronic weighing balance	-	2
4. Electric oven	-	2
5. Desiccator	-	2
6. Ganong's or Darwin's potometer	-	1
7. Table lamps with a bulb of 60 Watt	-	30
8. Rulers (15 cm and 50 cm)	-	30
9. Water bath	-	5
10. Pestle and Mortar	-	3
11. pH meter	-	1
12. pH papers	-	5 pkts
13. pH tablets / solutions (for calibrating pH meter)	-	pH 4, 7 and 9
14. Hand lens	-	30
15. Forceps	-	30
16. Needles (mounted)	-	60
17. Thermometer	-	30
18. Beakers (100 ml, 250 ml & 500 ml)	-	30 each
19. Funnel (Short stem)	-	30
20. Conical Flasks (500 ml)	-	2
21. Test Tubes	-	200
22. Test tube stands	-	30
23. Test tube holders	-	30
24. Thistle Funnel	-	30

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25.	Peeler / knife	-	30
26.	Razor/blade	-	30
27.	Scissors	-	30
28.	Parchment paper (Semi-permeable membrane)	-	1 pkt
29.	Brush	-	30
30.	Glass rod	-	30
31.	Measuring Cylinders (10 cc, 25 cc)	-	30 each
32.	Measuring Cylinders (500 cc)	-	5
33.	Dropper	-	60
34.	Scalpel	-	30
35.	Spatula	-	10
36.	Magnifying Lens	-	30
37.	Petri dishes	-	60
38.	Watch glass	-	60
39.	Spirit lamp/Bunsen burner	-	30
40.	Tripod stand	-	15
41.	Wire gauge	-	15
42.	Cork borer	-	30
43.	Pipettes (1ml, 5 ml)	-	30 each
44.	Marker pen for glass labelling/ Sticky labels	-	5/ 1 pkt
45.	Cover slips	-	1 box containing 20 pkts
46.	Slide box with slides	-	2
47.	Filter paper	-	6 pkts
48.	Whatman's filter paper (No.1)	-	One large sheet
49.	Cobalt chloride paper	-	5 pkts

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REAGENTS

1.	Iodine solution		
2.	Dilute Hydrochloric acid	-	250 ml
3.	Sodium bicarbonate	-	500 gm
4.	NaH ₂ PO ₄ and Na ₂ HPO ₄ (or Phosphate buffer pH = 7)	-	500 g x 2
5.	Starch	-	500 gm
6.	Glucose	-	500 gm
7.	Sucrose	-	500 gm
8.	Benedict's reagent	-	500 ml
9.	Millon's reagent	-	500 ml
10.	Biuret reagent	-	500 ml
11.	Ninhydrin	-	500 ml
12.	Sudan-III	-	100 gm
13.	Sodium Hydroxide	-	500 gm
14.	Potassium hydroxide	-	500 gm
15.	Diastase	-	100 gm x 2
16.	Barium sulphate	-	500 gm
17.	Methyl alcohol	-	500 ml
18.	Sodium chloride	-	500 gm x 2
19.	Nitric Acid	-	250 ml
20.	Fehling's solution A and B	-	500 ml each
21.	Glycerol/Glycerine	-	500 ml
22.	Alcohol	-	500 ml

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23.	Copper Sulphate Solution	-	250 ml
24.	Cobalt Chloride	-	100 gm
25.	Acetone	-	500 ml
26.	Chloroform	-	500 ml
27.	Solvent ether	-	500 ml
28.	Acetic acid	-	500 ml
29.	Alkaline pyrogallol	-	100 ml
30.	Mercury	-	100 gm

CHARTS / MODELS FOR THE VARIOUS ORGAN SYSTEMS IN MAN

- a) Digestive system
- b) Respiratory system
- c) Endocrine system
- d) Circulatory system
- e) Skeletal system
- f) Reproductive system
- g) Stages in embryology
- h) Excretory system
- i) Human eye
- j) Ear
- k) Heart
- l) Brain

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CHARTS

Plant Life:

- a) T.S. of young dicot & monocot stem
- b) T.S. of monocot & dicot leaf
- c) T.S. of monocot & dicot root
- d) Plant families:
 - (i) Malvaceae: China rose
 - (ii) Solanaceae: Petunia / Datura
 - (iii) Compositae: Sun flower, Marigold
 - (iv) Papilionaceae: Sweet pea
 - (v) Liliaceae: Onion
 - (vi) Amaryllidaceae: *Lily/Gladiolus*
- e) Different types of inflorescence: Racemose (Typical raceme), Cymose, and Capitulum
- f) Modifications of root, stem and leaf
- g) Types of phyllotaxy
- h) Types of venations in leaves
- i) Different shapes of leaves
- j) Simple leaf Vs Compound leaf
- k) Pollination by an insect
- l) Pollination by wind

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STAINS

a) Methylene blue	-	5 bottles of 125ml each
b) Safranin	-	5 bottles of 125ml each
c) Fast green	-	5 bottles of 125ml each
d) Eosin	-	5 bottles of 125ml each
e) Acetocarmine	-	1 bottle of 125 ml

PERMANENT SLIDES

- a) Mitosis and Meiosis
- b) T.S. of testis of mammal
- c) T.S. of ovary of mammal
- d) T.S. Morula and Blastula (Slide / Chart)
- e) T.S. of monocot & dicot leaf
- f) T.S. of monocot & dicot stem
- g) T.S. of monocot & dicot root
- h) Mammalian blood cells
- i) Bacteria
- j) *Oscillatoria* (W.M.)
- k) Germinating pollen grains (Slide/Chart)

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IDENTIFICATION OF PLANTS

Specimens / Permanent Slides/ Models/ Charts:

- a) Algae (*Spirogyra*)
- b) Fungi (yeast, mushroom, *Rhizopus* and *Mucor*)
- c) Lichens
- d) Moss
- e) Fern
- f) Liverwort
- g) *Pinus*
- h) A monocot plant (Bamboo)
- i) A dicot plant (*Petunia*)
- j) A phylloclade (Cactus)

IDENTIFICATION OF ANIMALS

- a) *Amoeba* (slide or chart)
- b) *Entamoeba histolytica* Trophozoite (Slide - W.M.) or chart
- c) *Plasmodium* sporozoite (Slide - W.M.) or chart
- d) Hydra (slide)
- e) Liver fluke
- f) *Ascaris* (male and female)
- g) Earthworm
- h) Leech
- i) Prawn / crab
- j) Honeybee
- k) Cockroach
- l) Silk worm
- m) Rohu fish

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