List of different equipments, glass wares and charts

Department of Botany

Govt. (A) College Angul.

Glass wares and chemicals

A. Glass wares (ALL BOROSIL)

1. Cover slips (22mm x 22mm) --- 20pkts
2. Weighing scoops (2ml, 10ml) ---2nos each
3. Pipette – (25ml(2nos),10ml,5ml,2ml,1ml(4nos each)) (GRADUATED)
4. Burette - (100 ml) --- 5nos
5. Conical flask –1 lit --- 2nos
6. Measuring cylinder – 10ml,50ml,100ml (4 each)
7. Centrifuge tube – (micro and normal)
8. Petri dish(culture) (100x17)mm--- 20nos
9. Paper chromatography column ---4 no's
10. Micropipette (2-20µl, 10-100 µl,100-1000 µl) --- 1 no each and micropipette tips and tips box
11. Pipette stand--- 6 nos(**TARSON**)
12. Farmer's poto metre – 6 no's (**JSGW**)
13. Ganong's potometre – 6 no's **(JSGW)**
14. T/A apparatus – 6 no's **(JSGW)**
15. Wilmott'sbubbler – 4 no's(**JSGW)**
16. Slides(76x26x1)mm - 10 packets
17. Watch glass 80 ml(50 nos) and 120 ml (20nos)
18. Desiccators (250mm)– 1no (TARSON)

B. SLIDES (BIOCRAFT ONLY)

a. Algae

1. *Nostoc* - vegetative and reproductive
2. *Volvox*
3. *Oedogonium*
4. *Coleochaeta*
5. *Chara*

6. *Vaucheria*
7. *Ectocarpus*
8. *Fucus*
9. *Polysiphonia*
10. *Prochloron*

b. Bacteria
   1. Binary fission
   2. Endosperm
   3. Conjugation
   4. Root nodule

c. Cell biology
   1. Mitosis (different stages)
   2. Meiosis (different stages of meiosis-I and meiosis- II)

d. Mycology
   1. Ascocarp and basidiocarp
   2. *Rhizopus* (Asexual and Sexual stages)
   3. *Aspergillus* (do)
   4. *Penicillium* (do)
   5. *Peziza* - Ascocarp
   6. *Puccinia* – Infected Barberry leaves. And black stem rust of wheat
   7. *Albugo* – Asexual and sexual stages

e. Lichens
   1. Thallus – crustose, foliose and fruticose
   2. Reproductive structures of soredia and Apothecium

f. Bryophyta
   1. *Riccia* – Thallus
   2. *Marchantia* – Gemma cup, thallus structure, V.S. of antheridiophore and archegoniophore, L.S. of sporophyte
   3. *Anthoceros* – V.S. of thallus
   4. *Pelia,porella and Sphagnum* – morphology of plants and leaves
   5. *Funaria* – Antheridial head and Archegonial head. L.S. of capsule and protonema.
   6. *Psilotum* – T.S of synangium.
   7. *Selaginella* – L.S of Strobilus, T.S. of stem microsporophyll and megasporophyll
   8. *Equisetum* – Morphology, T.S. of internodes, L.S. of strobilus,T.S of Rhizome
   9. *Pteris* – T.S of Rhizomes, T.S. of rachis, V.S. of sporophyll, Young sporophytes, prothallus with sex organs

g. Gymnosperm
    1. *Cycas* – V.S of microsporophyll, T.S of coralloid roots. V.S of leaflet,L.S. of ovule,T.S of root
    2. *Pinus* – T.S of needle, T.S of stem, L.S of male cone, T.S of male cone. T.L.S. and R.L.S of stem
    3. *Gnetum* – T.S of stem, V.S. Ovule.

h. Anatomy
    1. Apical meristem of root, shoot and vascular cambium
    2. Parenchyma tissue
    3. Collenchymas tissue
    4. Sclerenchyma tissue
    5. Monocot root
    6. Dicot root
    7. Monocot stem
    8. Dicot stem
    9. Monocot leaf
    10. Dicot leaf
    11. Secondary growth
    12. Anomalous secondary growth
    13. Krantz anatomy

i. Genetics
    1. Translocation ring
    2. Laggards
    3. Inversion bridge

j. Embryology
    1. T.S. of mature anther
    2. T.S. of mature ovule
    3. Different types of ovules
    4. Unitegmic and bitegmic ovule
    5. Special structure of endothecium
    6. Arburator
    7. Hypostases
    8. Carbuncle
    9. Aril
    10. Female gametophyte
    11. Study of development of monocot and dicot

k. **CHARTS (BIOVISUALS ONLY)**
    1. Malvaceae family
    2. Fabaceae family

3. Liliaceae family
4. Solanaceae family
5. Ranunculaceae family
6. Brassicaceae family
7. Myrtaceae family
8. Umbelifareae family
9. Asteraceae family
10. Lamiacaea family
11. Euphorbiaceae family
12. Poaceae family
13. Different stages of mitosis
14. Different stages of meiosis
15. T.S of monocot stem
16. T.S of dicot stem
17. Lytic and lysogenic life cycle.
18. Ovule types
19. T.S of anther
20. Calvin cycle
21. Light reaction
22. C4 cycle
23. Krantz anatomy
24. CAM
25. PPP
26. Glycolysis
27. Kreb's cycle
28. ETC
29. Sucrose loading and uploading
30. Root modification
31. Stem modification
32. Leaf modification
33. Inflorescence
34. Venation
35. Phyllotaxy
36. L.S. of flower
37. Fruits
38. Seeds
39. Endosperms
40. Hypogeal and Epigeal and Viviparous
41. Cladistic of angiosperm

42.Compound and electron microscope
43.Simple tissue
44.Complex tissue
45.Vascular tissue system
46.Anomalous secondary tissue
47.Chromosomal aberration
48.Geographical time scale
49.Conjugation of bacteria
50.Transformation of bacteria
51.Transduction of bacteria
52.Mineral transport
53.Water absorption
54.Transpiration
55.Phytohormones
56.Phototropism
57.Geotropism
58.Monohybrid cross
59.Dihybrid cross
60.Complimentary, supplementary and epistatis
61.Polyploidy
62.Gene mutation
63.Linkage and crossing over
64.Sex determination
65.Cytoplasmic inheritance

l. Chemicals

1. Sucrose
2. Chromic acid
3. Acetocarmine
4. Ethyl alcohol
5. Cotton blue
6. Methylene blue

m. Others

1. Chromatographic paper
2. Spatula-10
3. Dropper
4. Herbarium starter kit
5. Herbarium press
6. Test tube brush
7. Test tube stand

8. Digital stopwatch
9. Wash paper
10. pH paper
11. test tube holder
12. spirit lamp
13. cork borer
14. cellophane papers
15. chart stand
16. pipette stand
17. forceps
18. needles
19. brush
20. filter paper

n. models

1. models of DNA
2. models of chromosomes
3. model of virus T-phage, TMV

Approximate rate **Rs.101, 860/-**

Infrastructures

1. Tissue culture rack – 1 no
2. Laboratory chairs, stools and racks (Godrej)

Approximate rate **Rs. 100000/-**

Equipments

1. Gel electrophoresis (Horizontal and Vertical) – 1no (mini) Tarson
2. Normal centrifuge machine – 1no Tarson
3. Hair Dryer – 2nos (Philips)
4. Haemocytometer – 1no of reputed brand
5. soil thermometer – 1no of reputed brand
6. blood grouping kit -1no of reputed brand
7. Anemometer – 1no of reputed brand
8. Hygrometer -1no of reputed brand
9. Rain gauge meter -1no of reputed brand

Approximate rate Rs. **77500/-**