

BOTANY PRACTICAL EXAMINATION B.Sc PART-III
SKELETON PAPER

M.M. 50

TIME: 4 Hours

S.No.	Practical	Regular	ExNC
1	Plant Taxonomy		
	(a) Describe vegetative and reproductive parts of flower in semi-technical language.	7	6
	(b) Give floral diagram and floral formula and Identify the family giving reasons.	3	3
2	Comment on the embryological exercise	5	5
3(a)	Anatomical exercise on secondary growth	5	5
3(b)	Ecological exercise based on quadrat method	5	5
4	Histochemical test/ Comment on the economic part of the specimen	5	5
5	Comment upon spots (1-5 for Regular & 1-8 for ExNC) Viva-Voce	10	16
6	Viva- Voce	5	5
7	Practical records + Visits Lab/ Models/ Project Reports	5	-
	TOTAL	50	50

Note: For NC spots may be 1-8.

suggested Laboratory Exercises :

1. Study of any commonly occurring dicotyledonous plant to understand the body plan and modular type of growth.
2. Life forms exhibited by flowering plants (by visit to a forest or a garden).
3. L.S. of shoot tip to study the organization of meristem and origin of leaf primordial.
4. Monopodial and sympodial types of branching in monocots & dicots.
5. Anatomy of primary and secondary growth in monocots and dicots using hand out sections of sunflower, maize, cucurbita stem and roots.
6. Anamolous secondary growth in stem: Salvadora, Bignonia, Bougainvillia, Bouhaenia, Myctanthes, Leptadenia, Deacena.
7. Study of diversity in leaf shape and size. Internal structure of leaf-Dorsiventral and isobilateral leaves; study of stomatal types.
8. Examination of seed (monocot and dicot). Structure, seed viability test.
9. Specimen study of modifications of plant parts for Vegetative reproduction.

Practical Exercises:

1. Study frequency and density, abundance of plant species of campus vegetation by quadrat method.
2. Variation in soil moisture in relation to depth.
3. To estimate bulk density of grassland and woodland soil.
4. To estimate the porosity of grassland and woodland soil sample.
5. To determine moisture content of grassland and wood land soil.
6. To measure dissolved oxygen content in polluted and unpolluted water samples.
7. To measure temperature of different water bodies.
8. Water holding capacity of the soil.
9. Find out pH of soil sample by Universal Indicator method.
10. Find out pH of water sample by pH meter.
11. Find out transparency of a waterbody by Sechhidisk.
12. Study morphology (external and internal) of hydrophytes (*Hydrilla* stem, *Typha* leaf and *Nymphaea/Eichhornia* petiole) and xerophytes (*Calotropis*, *Capparis* and *Casuarina* stem, *Nerium* leaf) with special reference to their adaptations.

13. Study following specimen with special reference to:
1. Botany of the economically important part.
 2. Processing, if any involved.
 3. Specimen of cereals, pulses, spices beverage (tea & coffee) beans, sugar, oil seeds (mustard, groundnut).
14. Study of starch grain in potato and pea. Histochemical test
Cellulose, lignin, starch, fat, protein and tannin. *Product*
15. Submit 5 specimens of locally important medicinal plants / *oil seed plants /*
Fibres plants / Pulses

suggested Laboratory Exercises.

(A) Taxonomy:

(I) The following genera are suitable for study of families:

1. Ranunculaceae-Ranunculus, Delphinium.
2. Fabaceae-Pisum sativum, Cassia and Acacia.
3. Apiaceae:Coriandrum
4. Convolvulaceae-Ipomea, Jacquemontia.
5. Apocynaceae-Catharanthus, Thevetia
6. - Asclepiadaceae-Calotropis.
7. Lamiaceae-Ocimum, Salvia.
8. Euphorbiaceae-Euphorbia pulcherrima, Ricinus.
9. Acanthaceae-Adhatoda.
10. Asteraceae-Helianthus, Tridax
11. Rubiaceae-Hamelia

13. Herbarium preparation

12. Poaceae-Triticum

(II) Types of Inflorescence and Fruits:

(III) Embryology

1. T. S. of anther, to study the wall layers and pollen sac with pollen grains.
2. Study the various types of ovule, draw the diagrams.
3. Study the various types of placentations.
4. Study the germination of pollen grain *in situ* and observe the path of pollen tube.
5. Study of various stages of embryo (*Raphanus* fruit)