

6. Botany

B.Sc. Botany-I

Total Mark: 100

Appendix 'A'

(Outlines of Tests)

Paper-A:	Diversity of Plants (Written)	:	35 Marks
Paper-B:	Plant Systematics Anatomy and Development (Written):		35 Marks
Paper-C:	(Practical-I)	:	15 Marks
Paper-D:	(Practical-II)	:	15 Marks

Note:

- (a) The 60% portion of question paper will be subjective type and 40% objective type, the question paper will be section wise and each question will be divided in parts.
- (b) The choice in attempting the question will be minimized to some extent.

Appendix 'B'

(Syllabi and Courses of Reading)

Paper-A: Diversity of Plants

35 Marks

Definition, scope and classification of the kingdoms.

Basic concepts of evolution in plant diversity

1. Viruses:

- (a) General structure, types and reproduction of viruses.
- (b) Viral diseases and their economic importance

2. Kingdom Monera Prokaryotae (Bacteria and Cyanobacteria):

General structure, reproduction, classification and economic (such as cycle and industrial role)

3. Kingdom Protista/Protoetsta: (Algae):

- (a) General structure, occurrence, reproduction and economic importance
- (b) Classification of algae with specific examples
 - (i) Chlorophyta: Volvax
 - (ii) Charophyta: Chara
 - (iii) Vaucheriophyta: Vauchena
 - (iv) Bacillariophyta: Pinnularia
 - (v) Phacophyta: Laminaria
 - (vi) Rhodophyta.-Batrachospermum Polysiphonia

4. Kingdom Fungi:

- (a) General structure, life cycle, classification with specific examples:
 - (i) Plasmodiophoromycota Plasmodiophora

2. Brassicaceae (Cruciferae)
3. Fabaceae (Leguminosae)
4. Rosaceae
5. Euphorbiaceae
6. Rataceae
7. Moraceae
8. Chenopodiaceae
9. Cucurbitaceae
10. Solanaceae
11. Lamiaceae (Labiatae)
12. Asteraceae (Compositae)
13. Liliaceae
14. Poceac (Gramineae)

Anatomy and Development:

1. Cell wall; structure and chemical composition.
2. Tissue and Tissu System: Concept; structure and function of various tissues.
3. Structure and development of root, stem and leaf including various type of meristem. Primary and secondary growth of dicot stem.
4. Early development of Plant body (embryology) *Capsella bursa-pastoris* or *Arubidopsis*.

Paper-C: Practical-I

15 Marks

General culturing, maintenance. Preservation and staining of micro-organisms. Study of the morphology and reproductive structures of the types mentioned in theory paper. Identification of various types mentioned from prepared slides and fresh collection. Collection of diseased specimens of plants and their identification.

Recommended Books:

1. Bold. H.C.. Morphology of Plants. 2nd cd. Harper & Row, N Y.
2. Hafiz, A. (1986). Plant Diseases. Pakistan Agricultural Research Council. Islamabad, Pakistan.
3. Lee, R.E. (1999). Phycology. Cambridge University Press. U.K.
4. Mauseth, J.D. ((1998). An Introduction to Plant Biology : Multimedia Enhanced. Jones and Bartlett Pub U.K.
5. Moore. R.C.. W.D. and Vodopich, D.S. (1998). Botany. McGraw Hill Company. U.S.A.
6. Pandey. S.N. (1994). Text Book of Botany Vol. II. S. Chand & Co. New Dehli.

7. Raven, P.H., Evert, R. E. and Eichorn, S. E. (1999). Biology of Plants. W. H. Freeman and Company Worth Publishers.
8. Ray. P. M. Steeves, T. A. and Fultz. T. A. (1998). Botany. Saunders College Publishing. U.S.A.
9. Ross, F.C. (1991). Introduction to Microbiology. John Wiley, U.S.A.

Paper-D: Practical-II

15 Marks

1. Study of cross section of monocot and dicot stem.
2. Study of the simple and compound tissue in macerated and sectioned material.
3. Study of cross section of bifacial leaf.
4. To study the Prepared slides of secondary growth in dicot stem.
5. Identification of families given in syllabus with the help of keys.
6. Technical description of common flowering plants belonging to families mentioned in theory syllabus.
7. Field trips shall be undertaken to study and collect local plants, Students shall submit 40 fully identified herbarium specimens.

Recommended Books:

1. Bold. H.C. (1997), Morphology of Plants. Harper & Row, N.Y.
2. Dickison, W.C. (2000). Integrative Plant Anatomy. Academic Press. UK.
3. Palm, A. (1990) Plant Anatomy. Pergamon Press, U.K.
4. Mauseth. J.I). (1993). An Introduction to Plant Biology: Multimedia Enhanced Jones and Bartlett Pub, U.K.
5. Moore, R.C., W.D. Clarke and Vodopich, D.S. (1998), Botany McGraw Hill Company. U.S.A.
6. Raven, P.H., Evert. R.E. and Eichhorn, S.E. (1999). Biology of Plants. W.H. Freeman and Company Worth Publishers.
7. Ray, P.M. Steeves, T.A. and Fultz, T.A. (1998). Botany. Saunders College Publishing, USA.
8. Stuessy, T.F. (1990). Plant Taxonomy. Columbia University Press, USA.