**SYLLABUS FOR THE SUBJECT OF BOTANY**

**PAPER-I**

**Marks : 100**

1. **Algae:** Origin, evolution, distribution and classification with reference to

range, structure, life-history, ecology and economic importance of Cyanophyta,

Bacillariophyta, Phaeophyta and Rhodophyta, Chlorophyta.

2. **Fungi:** Structure of plant body; development of ascus, basidium and

conidium; reproduction; classification; phylogeny, physiology and economic

importance of the main groups of fungi. Diseases of economically important

plants and their control.

3. **Bryophytes:**Evolution of gametophytes and sporophytes, structure,

reproduction, classification and economic importance of various members of

Liverworts, Mosses and Hornworts.

4. **Pteridophytes:** Introduction, characteristic features, alternation of generation

and evolutionary tendencies of various divisions: Psilophyta, Lycophyta,

Sphenophyta and Pterophyta. Evolution of seed.

5. **Gymnosperms:** General characters, life history and evolutionary tendencies

of Cycadophyta, Coniferophyta and Ginkgophyta. Structure of seed.

6. **Angiosperms:**

a. **Taxonomy:** Introduction to systematic botany; historical background of

classification systems, Post evolutionary era and recent developments in

classification systems. Plant Nomenclature, Rules of Nomenclature,

International Code of Botanical Nomenclature, Concept of taxa, Plant

collection and Preparation of herbarium; Botanic Gardens. Modern trends

in taxonomy, Biosystematics, Chemotaxonomy and Numerical taxonomy.

b. **Anatomy:** Cell wall; Tissues and Tissue systems: Meristematic tissue;

Epidermal tissue system; Fundamental or ground tissue system;

Mechanical tissue system; Xylem and Phloem as Vascular tissue,

Collenchyma, Sclerenchyma; Primary and secondary growth; Cambium,

Periderm. Anatomy of leaf, stem and root. Abnormal/Anomalous

secondary growth, Ecological anatomy.

c. Embryology: Introduction; alternation of generation; the flower and its

parts; stamen or microsporophyll; carpel or megasporophyll; male

gametophyte or microgametophyte, pollination and fertilization;

endosperm; embryo and its development (embryogenesis); seed and fruit

formation; apomixis; polyembryony.

**RECOMMENDED BOOKS**

*1. Harold C. Bold and Micheals, J. Wynne, 1985. Introduction to the Algae.*

*Prentice Hall, Inc, New Jersey.*

*2. Alexopolous, ClJ., Mims, C.W. and Blackwell, C. 1996. Introductory Mycology (4th*

*Edition). Wiley & Sons, New York.*

*3. Webster, J. 1980. Introduction to fungi (2nd Ed.), Cambridge University Press,*

*London.*

*4. George N. Agriose 1978. Plant Pathology. 4th Edition. Academic Press, London.*

*5. Scholfield, B.W. Introduction to Bryology. MacMillan, New York.*

*6. Sporne, K.R. (1967). The Morphology of Gymnosperms. Hutchinson Univ.*

*Library, London.*

*7. Smith G.M. 1956. Cryptogamic Botany vol. I & II 2nd edit. McGraw Hill.*

*8. Stuessy, T. F. 1990. Plant Taxonomy. Columbia University Press, USA.*

*9. Lawrence, G. H. M. 1951. Taxonomy of Vascular Plants. Macmillan, New York.*

*10. Jones, S.B. and Luchsinger, A.E. 1987. Plant Systematics. Mcgraw-Hill Book*

*company, Singapore.*

*11. Stace, C.A. 1962. Plant Taxonomy and Biosystematics. National Book*

*Foundation Islamabad.*

*12. Fahn, A. 1990. Plant Anatomy. Pergamon Press. Oxford.*

*13. Esau, K. 1960. Anatomy of Seed Plants. John Wiley, New York.*

*14. Pandey, B.P. 2001. Plant Anatomy. S. Chand and company Ltd. New Dehli.*

*15. Maheshwari, P. 1988. An introduction to the Embryology of Angiosperms, 9th*

*Reprint. McGraw-Hill, Inc. New York.*