

**BOTANY (Subsidiary)****Paper II**

Time - 3 hours

Full Marks - 75

Ten questions to be set, six from Group A and four from Group B.  
Five to be answered, selecting three from group A and two from group B.

**Group A****1. Taxonomy**

- i. Classification of angiosperm with reference to Linnaeus, Bentham and Hooker, Engler and Prantl and Hutchinson.
- ii. Diagnostic feature and economic importance of the following families -
 

<i>Ranunculaceae,</i>	<i>Cucurbitaceae,</i>	<i>Acanthaceae,</i>
<i>Convolvulaceae,</i>	<i>Scrophulariaceae,</i>	<i>Euphorbiaceae,</i>
<i>Musaceae</i> and	<i>Cyperaceae</i>	

**2. Anatomy**

- i. Meristem
- ii. Root stem transitions
- iii. Anomalous Secondary growth with reference to the stem of *Boerhaavia, Nyctanthes, Tinospora,* and *Dracaena*
- iv. Periderm - Structure, origin, duration and function.

**Group B****3. Physiology**

- i. Water relation-Interrelationship among O.P., T.P. and D.P.D
- ii. Stomatal regulation
- iii. Translocation of organic solutes
- iv. Photosynthesis - Electron - transfer, Photophosphorylation, Photolysis of water,  $C_3$  and  $C_4$  cycle.
- v. Respiration - Glycolysis, Krebs' cycle
- vi. Elementary idea of Phytohormones, Gibberellins & Cytokinins

**4. Ecology**

- i. Elementary idea of ecosystem and its components
- ii. Plant Succession - Hydrosere, Xerosere.
- iii. Brief idea of water and air pollution, its causes and control.

**5. Cytogenetics**

- i. Mitosis and Meiosis

- ii. Mendelism
- iii. Chromosome
- iv. DNA and RNA
- v. Elementary idea of Linkage, Crossing over, Polyploidy, Mutation.

### Books Recommended

1. Plant Taxonomy by Laurance
2. Taxonomy by V. P. Naik
3. Anatomy by Eames and Mc Daniel
4. Plant Antomy by P. K. Daradhiyar
5. Plant Physiology by Bidwell
6. An Introduction to Ecology by R. S. Ambastha
7. Ecology by Odum
8. Genetics and Plant Breeding by U. Sinha and S. Sinha
9. पादप शरीर क्रिया विज्ञान की पाठ्य पुस्तक - पी० वर्मा
10. पादप परिस्थिति एवं पादप भूगोल के मूल तत्व - इज योपाल
11. पादप परिस्थितकी - एन० के० प्रसाद
12. कोशिका विज्ञान, अनुवांशिकी एवं विकास - पी० के० गुप्ता

### BOTANY(SUBSIDIARY)

#### Practical

Time - 3 hours

Full Marks - 25

1. Temporary slide preparation, sketches and characteristic feature of given anatomical material. 5 marks
2. Description of the given angiospermic plant in semitechnical terms and identification upto the family level 5 marks
3. Identification and comment upon the given spots 4 marks
  - a. Anatomy 1 mark
  - b. Ecology 1 mark
  - c. Cytology 1 mark
  - d. Morphology 1 mark
4. Comment upon Phsyiology Experiment 4 marks
5. Practical Record 5 marks
6. Viva-voce 4 marks