

**BOT- 531 SEMESTER V**

**Paper: 5**

**Theory: 45 hrs**

**Taxonomy II, Economic botany and Environmental biology, Phytogeography.**

**Unit 1:**

**12 hrs**

**Study of the following families:**

**Gamopetalae: a. Verbanaceae b. Labiatae c. Acanthaceae d. Rubiaceae**

**e. Cucurbitaceae f. Compositae**

**Monocotyledons: a. Graminae b. Musaceae c. Cannaceae**

**Unit 2: Economic botany: Study of the family name, botanical name, the parts used and the economic importance of the following:**

**4hrs**

**Cereals and millets – wheat, rice, jowar, ragi.**

**Pulses - Pigeon Pea, Black gram and Bengal gram.**

**Oils and Fats - Ground nut, Coconut and Safflower.**

**Fibers - Cotton, Jute and coir.**

**Beverages - Coffee, Tea and Cocoa.**

**Spices - Cardamom, Clove and Cinnamomum.**

**Sugar and Starch - Sugarcane, Beetroot, Potato and Tapioca.**

**Timber - Teak and Rosewood.**

**Paper and Pulp - Bamboo and Eucalyptus.**

**Narcotics - Ganja and Opium.**

**Unit 3: Environmental Biology:**

**12hrs**

**Introduction and scope of Environmental Biology.**

**Environmental Factors: a. Climatic (water, temperature, light, air etc)**

**b. Edaphic (organic matter and soil profile, erosion and conservation)**

**c. Biotic (Interactions, effect of plants on environment, competition, mutualism, proto co-operation, commensalism, amensalism, saprophytism, parasitism, predation (plants vs. animals))**

**Ecosystem: Concept and components with reference to marine, grassland and tropical deciduous forest ecosystems.**

**Unit 4: Ecosystem management: Pollution – Air, water, soil.**

**14hrs**

**Global warming, greenhouse effect, ozone depletion.**

**Soil reclamation for sustainable agriculture. Watershed management-rain water harvesting. Remote sensing. Organic farming, biofertiliser, biopesticides and biofuel- a brief account.**

**Ecological succession: Hydrosere, Xerosere**

**Ecological adaptations: Hydrophytes, Xerophytes, Halophytes,**

**Epiphytes, Parasites, Saprophytes and Symbionts.**

**Chipko and Appico movements.**

**Unit 5: Phytogeography**

**3hrs**

**Phytogeographical regions of India. Vegetational types of Karnataka**

**BOT 551 SEMESTER V Practical 5**

1. Study of families : Verbanaceae, Labiatae and Asclepiadaceae.
2. Study of families : Acanthaceae, Rubiaceae.
3. Study of families: Cucurbitaceae, Compositae.
4. Study of families : Gramineae, musaceae. Cannaceae.
5. Study of economically important plants covered in theory and to identify with botanical names, family, parts used and uses.
6. Study of plant adaptations-Hydrophytes, Xerophytes and Parasites.
7. Study of soil profile, texture and soil Ph. (garden soil)
8. Field trip to study watershed management (or) rain water harvesting (or) organic farming. Preparation of report.
9. Submission of report for practical exam.
10. Chloride estimation .
10. Submission of economically important plant parts.

**BOT 551 SEMESTER V PRACTICAL 5**

**QUESTION PAPER**

**TIME: 3 hrs**

**Max. marks: 50**

1. Assign the specimens A, B and C to their respective families giving diagnostic features. 3x5=15
2. Describe D in technical terms. Draw the floral diagram with floral formula. 8
3. Estimate the amount of chloride in the given water sample E. 10
4. Identify the specimens, F, G & I and highlight their economic importance/adaptations. 3x4=12
5. Comment/Test the pH of J 5
6. Submission: Records and 10 economically important plant parts.

**SCHEME OF EVALUATION**

1. A, B and C – two dicot and one monocot;  
(identification and classification-2, features-3)
2. D- description-4; diagram-3; formula-1
3. Chloride estimation . experiment 5 calculation 5
4. F- Economic importance, Adaptation (identification-1, characters-3)  
(E, F identification-1, Bot. name and family-2, importance-1)
5. J- soil profile/texture/ pH 5.

**Text books**

**Sundarajan s.(1997)College Botany Vol II Himalaya Publication\_**

**Trivedi A text book of Environmental Sciences,LB Publishes.**

**Odum E.P(1971)Plant Ecology, W.B.Sanderson Co. Philadelphia.**

**Sharma.P.D.(1993)Ecology and Environment, Rastogi**

**Dutta S.C Systematic Botany Wiley Eastern,New Delhi.**

**References :**

- **Ganguly and Kar(1970)College Botany-II ,New Central Book Agency-Calcutta.**
- **Lawrence GHM(1951)Taxonomy of vascular plants. Mc Millan New York.**
- **Trivedi and Sharma Taxonomy of Angiosperms L.B.Publications.**
- **Ambasht.A text book of Plant Ecology.L.B.Publishers**
- **Croizal L.(1952)Manual of Phytogeography.**
- **Pandey, Botany Vol II Chand Publication.**
- **Polumine N.(1950)Introduction to Plant Geography.Longmans Publishers,London.**
- **Publications, New Delhi.**

