Reg. No ..... Name **25P2038**

M. Sc. DEGREE END SEMESTER EXAMINATION - APRIL 2025

SEMESTER 2 : BOTANY

COURSE : **24P2BOTT07 : PLANT ANATOMY AND MICROTECHNIQUE**

(For Regular - 2024 Admission)

Time : Three Hours Max. Weights: 30

PART A

Answer any 8 questions **Weight: 1**

1.	Explain the role of velamen roots.	(U)
2.	Write the applications of anatomy in systematics and Pharmacognosy.	(An)
3.	Write the anatomical features in CAM plants.	(U)
4.	How can you differentiate the specimen preparation for electron microscope and light microscope?	(U, CO 6)
5.	Write a note on nectaries and laticifers.	(E)
6.	Explain the role of Plant anatomy in Taxonomy and systematics.	(U, CO 1)
7.	Define Botanical Microtechnique.	(R, CO 6)
8.	Explain the advantages of killing and fixing.	(U, CO 6, CO 7)
9.	What are chrom-acetic acid fluids?	(R, CO 6, CO 7)
10.	What are the advantages of using DPX as a mounting medium for permanent slide preparation?	(R)

(1 x 8 = 8)

PART B

Answer any 6 questions **Weights: 2**

11.	What are the chemical components of a stain or dye? Explain its significance.	(U, CO 6, CO 7)
12.	Briefly explain the theories of root apex meristem.	(U)
13.	What are the purposes of dehydration in microscopic specimen preparation? Name one reagent used.	(R, CO 6, CO 7)
14.	Write a critical note on kranz anatomy.	(U)
15.	Briefly describe the activity of cork cambium.	(A)
16.	Discuss on Safranin - Fast green method of staining.	(E, CO 6, CO 7)
17.	Explain the development of epigynous ovary.	(An, CO 1, CO 2, CO 5)
18.	Discuss the technique of smear and squash preparation.	(E, CO 6, CO 7)

(2 x 6 = 12)

PART C

Answer any 2 questions **Weights: 5**

19. Write the stages of permanent slide preparation of hand sectioned material using single staining technique. (A, CO 6, CO 7)

20. Explain the anomalous secondary growth in *Strychnos* and *Piper*. (U)

21. Give an account on various dehydrating and clearing agents. Assess different dehydration methods. (E, CO 6, CO 7)

22. Explain the floral vasculature of Aquilegia. Add a note on appendicular and receptacular theory of epigynous ovary development. (An, CO 1, CO 2, CO 5)

(5 x 2 = 10)

OBE: Questions to Course Outcome Mapping

CO	Course Outcome Description	CL	Questions	Total Wt.
CO 1	Understand plant cell structure in a detailed manner	U	6, 17, 22	8
CO 2	Appraise tissue level organization in plant system	An	17, 22	7
CO 5	Analyze floral, nodal and reproductive anatomy of plants	An	17, 22	7
CO 6	Apply microtechnique and microscopic examination in histochemical studies	A	4, 7, 8, 9, 11, 13, 16, 18, 19, 21	22
CO 7	Develop skills in techniques of botanical slide preparation.	A	8, 9, 11, 13, 16, 18, 19, 21	20

Cognitive Level (CL): Cr - CREATE; E - EVALUATE; An - ANALYZE; A - APPLY; U - UNDERSTAND; R - REMEMBER;