Reg. No ..... Name **25P330**

MSc DEGREE END SEMESTER EXAMINATION - OCTOBER 2025

SEMESTER 3 : BOTANY

COURSE : **24P3BOTT11 : PLANT PHYSIOLOGY AND BIOCHEMISTRY**

(For Regular - 2024 Admission)

Time: Three Hours Max. Weights: 30

PART A

Answer any 8 questions **Weight: 1**

1.	What is Lineweaver-Burk plot? What is the significance?	(A)
2.	What is uridylate?	(U, CO 5, CO 6)
3.	What are phytochromes?	(R)
4.	What do you mean by TCA cycle? Explain its importance.	(U, CO 2)
5.	What is a Domain?	(U, CO 5, CO 6)
6.	What do you mean by nitrogen fixation?	(R, CO 2)
7.	What do you mean by cation exchange of mineral nutrients?	(R, CO 2)
8.	Give an account on photorespiration.	(An, CO 2)
9.	Which will die first, the root or the shoot in a ringed plant? Explain.	(U, CO 2)
10.	Explain (a) Torus and (b) Margo	()

(1 x 8 = 8)

PART B

Answer any 6 questions **Weights: 2**

11.	Explain the assembly of purine ring system by de novo pathway.	(U, CO 5, CO 6)
12.	What is meant by transpiration ratio? What does it indicate?	()
13.	Give an account on the two phases included in glycolysis.	(An, CO 2)
14.	Give an account on the physiological actions of auxin.	(R, CO 3)
15.	Briefly explain the formation of sucrose in plants.	(R, CO 2)
16.	What are the major Plant and Rhizobial genes involved in the root nodule formation?	(R, CO 2)
17.	How high temperature stress become deleterious to plants?	(U, CO 4)
18.	What is Ramachandran plot? Explain the significance.	(U)

(2 x 6 = 12)

PART C

Answer any 2 questions **Weights: 5**

19.	Write an account on the different methods of regulation of enzyme activity.	(A, CO 5, CO 6)
20.	Explain the structure of ATP synthase. Give an account of its functioning.	
21.	Describe the light dependent reactions of photosynthesis,including the role of PS I and II and the generation of ATP and NADPH.	(U, CO 2)
22.	Write an essay on theories of stomatal movement with reference to the leaf anatomy for regulating transpiration.	()

(5 x 2 = 10)

OBE: Questions to Course Outcome Mapping

CO	Course Outcome Description	CL	Questions	Total Wt.
CO 2	Examine the mechanism of photosynthesis, respiration, mineral nutrition nitrogen metabolism and translocation	A	4, 6, 7, 8, 9, 13, 15, 16, 20	16
CO 3	Develop a knowledge in photobiology and plant growth regulators	Cr	14	2
CO 4	Classify the plant responses to various environmental stresses	A	17	2
CO 5	Identify and compare the structure and functions of biomolecules	U	2, 5, 11, 19	9
CO 6	Perceive a detailed account on proteins, enzymology and nucleotide metabolism	E	2, 5, 11, 19	9

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