Reg. No .... Name **23P147**

M. Sc. DEGREE END SEMESTER EXAMINATION : NOVEMBER 2023

SEMESTER 1 : BOTANY

COURSE : **21P1BOTT04 : CELL BIOLOGY**

(For Regular - 2023 Admission and Improvement/Supplementary -2022/2021 Admissions)

Duration : Three Hours Max. Weights: 30

PART A

Answer any 8 questions **Weight: 1**

1.	What is apoptosis?	(U, CO 5)
2.	Differentiate F-actin and G-actin.	(A, CO 3, CO 6)
3.	What are cell cycle checkpoints?	(R, CO 1, CO 6)
4.	Give an account on dystrophin.	(R, CO 2)
5.	Write a short note on the significance of nuclear lamina.	(R, CO 1, CO 6)
6.	Give an account on tail anchored protein.	(U, CO 1, CO 3)
7.	Give an account on G protein coupled receptors.	(U, CO 2, CO 6)
8.	What are hormones? State two examples.	(E, CO 2, CO 6)
9.	Why are lysosomes called as suicidal bags of a cell?	(U)
10.	What is Phosphatidic acid?	(U)

(1 x 8 = 8)

PART B

Answer any 6 questions **Weights: 2**

11.	What is guanine nucleotide dissociation inhibitors (GDI)?	(A, CO 2, CO 6)
12.	Explain the various steps occurring in the process of apoptosis.	(U, CO 5)
13.	Explain the functions of profilin and cofilin.	(R, CO 3, CO 6)
14.	Briefly explain the levels of chromatin structure in eukaryotes.	(R, CO 1, CO 6)
15.	What are the different proteins involved in cell to cell interactions? Explain briefly	(An, CO 2)
16.	What are the different types of movements exhibited by phospholipids?	(R, CO 1, CO 6)
17.	Briefly explain cell cycle checkpoints.	(U, CO 1, CO 6)
18.	Briefly explain the process of uptake of proteins into chloroplast.	(R, CO 1, CO 3)

(2 x 6 = 12)

PART C

Answer any 2 questions **Weights: 5**

19. What is calmodulin? Give its functions. (An, CO 3, CO 6)

20. With the help of suitable examples explain facilitated diffusion. (A, CO 1, CO 6)

21. Explain the organization of eukaryotic chromosomes. Write an account on heterochromatin and euchromatin. (U, CO 1, CO 6)

22. Give an account on secretory pathway. Briefly explain how proteins are transported to plasma membrane and lysosomes. (U, CO 1, CO 3)

(5 x 2 = 10)

OBE: Questions to Course Outcome Mapping

CO	Course Outcome Description	CL	Questions	Total Wt.
CO 1	Explain the structures and purposes of basic components of prokaryotic and eukaryotic cells, especially macromolecules, membranes, and organelles.	U	3, 5, 6, 14, 16, 17, 18, 20, 21, 22	26
CO 2	Understand how the cells interact among themselves and with the environment through signal molecules.	U	4, 7, 8, 11, 15	7
CO 3	Explain about cytoskeleton, endomembrane system, protein trafficking and cell cycle.	U	2, 6, 13, 18, 19, 22	16
CO 5	Understand the molecular mechanisms of cancer.	U	1, 12	3
CO 6	Develop basic knowledge to prepare for competitive examinations in life science.	A	2, 3, 5, 7, 8, 11, 13, 14, 16, 17, 19, 20, 21	30

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