Reg. No ..... Name **22P1049**

M. Sc. DEGREE END SEMESTER EXAMINATION : OCTOBER 2022

SEMESTER 1 : BOTANY

COURSE : **21P1BOTT04 : CELL BIOLOGY**

(For Regular - 2022 Admission and Supplementary - 2021 Admission)

Duration : Three Hours Max. Weights: 30

PART A

Answer any 8 questions **Weight: 1**

1.	Give an account of microtubules.	(U, CO 3, CO 6)
2.	What is histone core?	(R, CO 1, CO 6)
3.	What are cell cycle checkpoints?	(R, CO 1, CO 6)
4.	What are proteoglycans?	(U, CO 2)
5.	Give an account on signal peptidase.	(An)
6.	Why lysosomes are called as suicidal bags of a cell?	(U)
7.	Explain the various steps occurring in the process of apoptosis.	(E, CO 5)
8.	Give an account on receptor tyrosine kinase receptors.	(U, CO 2, CO 6)
9.	What are the different alcohol moieties of phosphoglycerides?	(R, CO 1, CO 6)
10.	Give an account on the various types of secondary messengers in signalling.	(U, CO 2, CO 6)

(1 x 8 = 8)

PART B

Answer any 6 questions **Weights: 2**

11.	With the help of a labelled diagram, explain the structure of mitochondria.	(U, CO 1, CO 3, CO 4)
12.	Give a brief account on plasmodesmata.	(An, CO 2)
13.	What is cell cycle? Explain the events in cell cycle.	(U, CO 1, CO 6)
14.	Give an account on G protein-coupled receptor kinase (GRK).	(A, CO 6)
15.	Briefly explain the mechanism of nuclear export.	(U, CO 1, CO 6)
16.	Explain the structure and functions of integral membrane proteins.	(U, CO 1, CO 6)
17.	Explain the molecular structure and functions of kinesin.	(An, CO 3, CO 6)
18.	Give an account on intrinsic pathway of apoptosis.	(U, CO 5)

(2 x 6 = 12)

PART C

Answer any 2 questions **Weights: 5**

19.	Explain the process of protein transport into mitochondria.	(R, CO 1, CO 3)
20.	With the help of suitable examples explain Facilitated diffusion.	(A, CO 1, CO 6)
21.	Explain the transport of proteins from cytoplasm to the nucleus.	(U, CO 1, CO 6)
22.	What is calmodulin? Give its functions.	(An, CO 3, CO 6)

(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	2, 3, 9, 11, 13, 15, 16, 19, 20, 21	26
CO 2	Understand how the cells interact among themselves and with the environment through signal molecules.	U	4, 8, 10, 12	5
CO 3	Explain about cytoskeleton, endomembrane system, protein trafficking and cell cycle.	U	1, 11, 17, 19, 22	15
CO 4	Understand recent advancements in Chloroplast and Mitochondrial research.	U	11	2
CO 5	Understand the molecular mechanisms of cancer.	U	7, 18	3
CO 6	Develop basic knowledge to prepare for competitive examinations in life science.	A	1, 2, 3, 8, 9, 10, 13, 14, 15, 16, 17, 20, 21, 22	31

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