

Roll No:

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

MPHARM
(SEM I) THEORY EXAMINATION 2023-24
CELLULAR AND MOLECULAR PHARMACOLOGY

TIME: 3 HRS

M.MARKS: 75

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt all questions in brief. 10 x 2 = 20

a.	Define the concept of post-translational modifications.
b.	Discuss pyknosis.
c.	List the physiological functions of NO, and calcium.
d.	Classify receptors with their examples.
e.	Discuss about probe and target DNA.
f.	Differentiate between MAPK and MLCK.
g.	Enumerate the applications of microarray techniques.
h.	Review the terms proteomics and transcriptomics.
i.	Write examples of Pro-apoptotic and anti-apoptotic genes.
j.	Discuss the types and functions of RNA polymerases.

SECTION B

2. Attempt any two parts of the following: 2 x 10 = 20

a.	Explain the mechanism of GPCR (adenylyl cyclase and IP ₃ -DAG) mediated physiological actions.
b.	Illustrate the process of apoptosis highlighting the intrinsic and extrinsic pathways of Apoptosis.
c.	Explain various applications of proteomics, nutrigenomics, metabolomics, and transcriptomics in science.

SECTION C

3. Attempt any five parts of the following: 5 x 7 = 35

a.	Explain the intercellular and intracellular signalling pathways.
b.	Discuss the concept of Gene expression and its regulation.
c.	Describe the types and procedure of cell culture.
d.	Explore the types of restriction enzymes and vectors with suitable example.
e.	Discuss the principle and applications of flow cytometry.
f.	Explain genetic variation in drug transporters with examples.
g.	Document the principle and applications of cell viability assays.