Roll No: | | | | | | | | | | | |

MPHARM
(SEM I) THEORY EXAMINATION 2021-22
CELLULAR AND MOLECULAR PHARMACOLOGY

Time: 3 Hours *Total Marks: 75*

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

SECTION A

10 x 2 = 20

1. **Attempt *all* questions in brief.**

a. Describe Autophagy.

b. Discuss the role of Cytochrome c and CASPASEs in apoptotic pathways.

c. Explain the events activated during MAPK signaling.

d. Describe the different types of Vectors.

e. Elaborate the principle of DNA Microarray.

f. Illustrate the role of Restriction enzymes.

g. Describe the technique of Gene sequencing in brief.

h. Explain the process of Cryopreservation of cells.

i. Elaborate the role of trypsin in cell subculturing.

j. Describe the utility of Biosimilars.

SECTION B

2 x 10 = 20

2. **Attempt any *two*parts of the following:**

a. Illustrate the intrinsic and extrinsic pathways of Apoptosis.

b. Sketch the signal transduction process of GPCR.

c. Write in detail the principle and applications of Flow cytometry.

SECTION C

7 x 5 = 35

3. **Attempt any *five*parts of the following:**

a. Explain the events of Cell cycle

b. Describe the JAK-STAT signaling pathway.

c. Explain the principle and outcomes of Recombinant DNA Technology.

d. Demonstrate the concept of metabolomics and genomics.

e. Explain how genetic polymorphism affects drug metabolism.

f. Interpret the technique of Immunotherapeutics and humanization of antibody

g. Describe Cell viability assays putting special emphasis on Luciferase assay

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