

SEMESTER EXAMINATION-2021

Class: M.Pharm 1TH Semester
Subject: Cellular and Molecular Pharmacology
Paper Code: MPL104T

Time: 3 hour

Max. Marks: 70

Min. Pass: 40%

Note: Question Paper is divided into two sections: **A and B**. Attempt both the sections as per given instructions.

SECTION-A (SHORT ANSWER TYPE QUESTIONS)

Instructions: Answer any five questions in about 150 words each. Each (5 X 7 = 35 Marks) question carries seven marks.

- Question-1: What are the Structure and functions of cell.
Question-2: Explain how drug polymorphism will affect drug metabolism
Question-3: Write a note on proteomics and genomics
Question-4: What are the principles and applications of flow cytometry.
Question-5: Elaborate on biosimilars and their applications
Question-6: What is the basic equipment used in cell culture lab
Question-7: Define Cell Lines. How cells are cultured in cell culture techniques?
Question-8: What is calcium influx assay? What is its application?
Question-9: Discuss the principles and applications of polymerase chain reaction
Question-10: Define Gene Therapy. What are the various techniques of gene transfer?

SECTION-B (LONG ANSWER TYPE QUESTIONS)

Instructions: Answer any FOUR questions in detail. Each question (4 X 10 = 40 Marks) carries 10 marks.

- Question-11: What are second messengers? Give examples. Explain the functions of the NO substances in intracellular cell signaling.
Question-12: What is mean by necrosis? How it induces inflammatory degenerative cascade action?
Question-13: How SiRNA acts and controls transcription? Explain with example.
Question-14: How do cells communicate with each other? Discuss in detail the JAK-STAT signaling pathway.
Question-15: Explain in detail mitogen activated protein kinase signalling and its role as drug target.
Question-16: Explain a) Gene sequencing techniques b) ELISA
Question-17: Explain
a) Gene mapping and its applications
b) GPCR
Question-18: Write notes on:
a) Recombinant DNA technology and its applications.
b) Micro array techniques