

Exam Date & Time: 14-Mar-2022 (10:00 AM - 01:00 PM)



## MANIPAL ACADEMY OF HIGHER EDUCATION

Manipal Academy of Higher Education, Manipal MPharm Theory End-Semester Examinations.

**Cellular and Molecular Pharmacology [PHA-MPL104T - S2]**

**Marks: 75**

**Duration: 180 mins.**

### SECTION - A

**Answer all the questions.**

Answer the following (10 marks x 5 = 50 marks)

- 1) Describe the structure of RNA polymerase. Emphasizing the role of promoter explain the process of transcription in prokaryotes (10)
- 2) Depict the intracellular signaling pathway occurring via MAP Kinase activation (10)
- 3) With clinically relevant examples, discuss various polymorphisms modulating metabolism of drugs (10)
- 4) Explain the basic equipment required for establishing cell culture laboratory (10)
- 5) Discuss the concept of biosimilars (10)

### SECTION - B

**Answer all the questions.**

Answer the following (5 marks x 5 = 25 marks)

- 6) Describe the mechanism of action of zolgensma in spinal muscular atrophy. Comment on the usage of viral vectors in gene therapy (5)
- 7) How do you isolate plasmid DNA from E.coli? (5)
- 8) (5)

Describe families of Cyclins and Cyclin-dependent kinases. Explain the mechanism of Cyclin-dependent kinases regulation

9) Write a note on nuclear receptors (5)

10) Enumerate the applications of nutrigenomics (5)

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