

Question Paper

Exam Date & Time: 29-Nov-2023 (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]

Marks: 75

Duration: 180 mins.

SECTION - A

Answer all the questions.

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

- 1) Discuss the general principles of signal transduction. Describe a model for kinase mediated signal transduction (10)
- 2) Describe the regulation of transcription in prokaryotes. Explain the structure of RNA polymerase and promoter sequence. (10)
- 3) Explain the terms a) Start codon and stop codon, b) Anticodon and reading frame c) Wobble pairing and Shine- Dalgarno sequence (10)
- 4) How immunological therapy is used for the treatment of cancer? Give suitable examples of drugs (10)
- 5) Serious concerns surfaced during investigation starting from the cell culture laboratory, during the global outbreak of corona virus in 2019. What precautions were not considered? Explain the basic equipment and reagents required for such type of research. (10)

SECTION - B

Answer all the questions.

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

- 6) Discuss the role of cyclins and cyclin dependent kinases in cell cycle. (5)
- 7) Describe the role of nitric oxide in cellular and molecular signaling (5)
- 8) Discuss recombinant DNA technology. Explain the steps involved in it. (5)
- 9) Explain the genetic variation occurring in ABC transporters with clinically relevant examples (5)
- 10) Discuss the principle underlying flow cytometry. Enumerate its applications (5)

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