

Exam Date &amp; Time: 11-Sep-2021 (02:00 PM - 05:00 PM)



## MANIPAL ACADEMY OF HIGHER EDUCATION

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

**Bioinformatics and Computational Biotechnology [PBT-MPB203T]****Marks: 75****Duration: 180 mins.**

### SECTION - A

**Answer all the questions.**

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

- 1) Compare the mutations and add a note on DNA repair mechanisms. (10)
- 2) What is MPF? Describe its structure and functions. Add a note on degradation of cyclins. (10)
- 3) Discuss the characters of different types of cellular receptors present in mammalian cells. Illustrate the importance of BAX/BCL-2 ratio in apoptosis. (10)
- 4) Explain sequence alignment, its significance, and the evolutionary basis in detail. (10)
- 5) Explain various steps employed in deciphering the protein structure using comparative modelling in detail. (10)

### SECTION - B

**Answer all the questions.**

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

- 6) Write a note on mitochondrial DNA (5)
- 7) Discuss cAMP as a second messenger (5)
- 8) Discuss three tests to verify that a predicted ORF is likely to encode a protein. (5)
- 9) Briefly explain various steps involved in the automatic genome annotation pipeline. (5)
- 10) Discuss the importance of target validation in the drug discovery process. (5)

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