

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



## MANIPAL ACADEMY OF HIGHER EDUCATION

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

### Microbial and Cellular Biology [PBT-MPB102T]

Marks: 75

Duration: 180 mins.

#### SECTION - A

Answer all the questions.

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

- 1) Describe the features of bacterial growth and discuss bacterial growth curve. Add a note on physical growth requirements. (10)
- 2) Define probiotics and prebiotics. Discuss the desirable features, mechanism of action and applications of probiotics. (10)
- 3) Elaborate on the epidemiology of infectious diseases. (10)
- 4) Write a note on antimicrobial drugs that inhibit bacterial cell wall biosynthesis. (10)
- 5) Write notes on the following:
  - i. Non-overlapping and overlapping code
  - ii. Reading frame
  - iii. Degeneracy of the genetic code
  - iv. Wobble base
  - v. Codon and anti-codon pairing(10)

#### SECTION - B

Answer all the questions.

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

- 6) Explain lysogenic cycle of a bacteriophage and mention its significance. (5)
- 7) Write a note on recycling of vital elements. (5)
- 8) Write a note on the role of efflux pumps in biofilm resistance. (5)
- 9) Briefly explain the accidental discovery of the antibiotic penicillin in the laboratory. (5)
- 10) Define the following terms related to mutations:
  - a. Auxotrophs
  - b. Prototrophs
  - c. Conditional mutations
  - d. Resistant mutations
  - e. Spontaneous mutations(5)

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