

# Question Paper

Exam Date & Time: 27-Mar-2021 (01:30 PM - 04:30 PM)



## MANIPAL ACADEMY OF HIGHER EDUCATION

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

**Microbial and Cellular Biology [PBT-MPB102T - S2]**

**Marks: 75**

**Duration: 180 mins.**

### SECTION - A

**Answer all the questions.**

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

- 1) A. Explain the structure of a typical bacterial flagellum. Mention how they differ in a Gram positive and Gram negative bacteria. Write a note on its arrangement with suitable examples (7marks). (10)  
B. Write the principle and purpose of EMB agar (3 marks).
- 2) A. Elaborate on the factors influencing the development of gut microbiota (5 marks). (10)  
B. Write a brief note on recycling of vital elements (5 marks)
- 3) Describe the different terms such as (a) Sensitivity (b) Resistance (c) tolerance and (d) persistence with respect to response of microorganisms to antimicrobials. Explain the mechanisms of biofilm tolerance. (10)
- 4) What is multiple drug resistance? Describe the reasons for MDR. How can it be prevented? (10)
- 5) Describe the enzymology of DNA replication. (10)

### SECTION - B

**Answer all the questions.**

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

- 6) Explain the lytic cycle of a bacteriophage infection, Add a note on burst size and burst time. (5)
- 7) Explain various methods of insect pest control. (5)
- 8) Write a brief note on the portals of entry of microorganisms into human body. (5)
- 9) Write a note on mechanism of antimicrobial action of aminoglycosides. What are the different mechanisms by which bacteria develop resistance against aminoglycosides? (5)
- 10) What are plasmids. Enlist different types of plasmids and their relevance in microbial and cellular biology. (5)

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