

**BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(END SEMESTER EXAMINATION)**

**CLASS: PHARMACY
BRANCH: PHARMACY**

**SEMESTER: III
SESSION: MO/2024**

SUBJECT: BP303T PHARMACEUTICAL MICROBIOLOGY

TIME: 3.00 Hours

FULL MARK: 75

INSTRUCTIONS:

1. The missing data, if any, may be assumed suitably.
2. Before attempting the question paper, be sure that you have got the correct question paper.
3. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.
4. This question paper consists of (03) three parts. Read the part wise instructions before attempting the questions.

PART-I

Objective types questions (Instruction: Answer all questions)

Q1. (10 x 2 = 20 Marks)

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| A. Differentiate between optimum growth temperature and maximum growth temperature | CO4 |
| B. Compare the functions of fimbriae with pilli and Capsule with Slime layer. | CO1+CO2 |
| C. At which phase of growth the microorganisms are most susceptible against action of sterilizing agents? Cite reason. | CO2+CO3 |
| D. What is the principle of working of fluorescence microscope? | CO3 |
| E. Propose the role of UV in sterilization | CO4 |
| F. Outline the functions of different macro and micronutrients in microbial growth. | CO1+CO2 |
| G. Enlist different types of plasmids and their examples | CO3 |
| H. Define the terms HTST and UHT and their functions. | CO2 |
| I. Define TDP and TDT. | CO4 |
| J. Illustrate different asexual spores formed by fungi. | CO5 |

PART-II

Short Answers

(Instruction: Answer seven out of nine questions)

(7 x 5 = 35 Marks)

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| Q2. Differentiate between prokaryotic and eukaryotic cells. | CO1 |
| Q3. Compare the compositions of gram positive and gram-negative cell wall. | CO1 |
| Q4. Classify major nutritional types of microorganisms with examples. Indicate their source of energy. | CO2 |
| Q5. Illustrate and explain the growth curve of bacteria. | CO2 |
| Q6. How the phase contrast microscope works? | CO3 |
| Q7. Elaborate the term "microbial population death is exponential as population growth" with suitable example. | CO4+CO5 |
| Q8. What are the different classes of fungi? Discuss with examples. | CO1 |
| Q9. Illustrate the principle and function of an equipment used for sterilization of air. | CO3+CO4 |
| Q10. Compare the functions of different components used in the aerobic and anaerobic media for sterility testing. | CO4+CO5 |

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PART-III
Long Answers
(Instruction: Answer two out of three questions)

(2 x 10 = 20 marks)

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| Q11. | Discuss the principles of different Electron Microscopes. | C01 |
| Q12. | Classify and elaborate the chemical sterilization methods. | C04 |
| Q13. | Discuss the structure and function of the following with appropriate illustrations and examples:
a) Flagella; b) Glycocalyx; c) bacterial cell wall d) plasma membrane | C03+C04 |

:21/11/2024:E