

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -3 EXAMINATIONS- 2024

B.Tech-III Semester (BI)

COURSE CODE (CREDITS): 18B11BI312 (3.1.0)

MAX. MARKS: 35

COURSE NAME: Microbiology and Immune System

COURSE INSTRUCTORS: Dr. Tyson

MAX. TIME: 2 Hours

Note: (a) All questions are compulsory.

(b) The candidate is allowed to make Suitable numeric assumptions wherever required

For solving problems

Q.No	Question	CO	Marks
Q1	Distinguish between active and passive immunization. Elaborate on the underlying mechanisms by which each form of immunization confers immunity, and provide examples.	II	4
Q2	Antibodies, also known as immunoglobulin's, exhibit a remarkable diversity in their structure and function. Justify the Statement.	IV	4
Q3	Which methodological approaches are employed in microbiology for the cultivation of fastidious microorganisms, and how do they contribute to optimizing growth conditions for specific microbial strains?	I	4
Q4	In what ways does bacterial conjugation contribute to the spread of antibiotic resistance genes, and how does this process influence the evolution of multidrug-resistant bacterial strains?"	V	4
Q5	Explain the precipitation curve theory in the context of antigen-antibody interactions and describe its application in immunoelectrophoresis.	II	4
Q6	How does T-cells activation occurs and responds to foreign antigens in the body, and what role do antigen-presenting cells (APCs) play in this process?	IV	5
Q7	Discuss the different phases of the bacterial growth curve, explaining the physiological changes occurring in each phase, and analyze the role of growth factors in influencing bacterial replication and survival.	II	5
Q8	Explain the structural and functional differences between Class I and Class II Major Histocompatibility Complex (MHC) molecules. Explain how these differences influence antigen presentation and the subsequent activation of T cells.	IV	5