

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNACHAT

TEST -I EXAMINATION- 2025

M.tech / M.Sc-II Semester (BT/Micro)

COURSE CODE (CREDITS): 14M11BT212/I8MS1BT211 (3-0-0) MAX. MARKS: 15

COURSE NAME: Immunotechnology/Immunology and Immunotechnology

COURSE INSTRUCTORS: Dr. Tyson

MAX. TIME: 1 Hour

Note: (a) All questions are compulsory.

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

Q.No	Question	Marks
Q1	If the complement system can be activated even in the absence of antibodies, what other pathways or molecules might trigger its response, and how does this ensure a rapid defense against pathogens?	3
Q2	How do cytokines contribute to the balance between pro-inflammatory and anti-inflammatory immune responses, and what could be the consequences of an imbalance?	3
Q3	Explain how PRRs contribute to the activation of the adaptive immune system with example.	3
Q4	While humoral immunity is highly effective against extracellular pathogens, it has limited impact on intracellular infections. How do CD8 ⁺ T cells and Th1-polarized CD4 ⁺ T cells enhance cell-mediated immunity to combat intracellular pathogens like viruses?	3
Q5	Antibodies are classified based on isotype, allotype, and idiotype, each of which has a distinct immunological significance. How do these classifications differ in terms of their antigenic determinant? Additionally, how do variations in allotypes influence immune compatibility in blood transfusions and organ transplantation?	3