

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT
TEST -1 EXAMINATIONS-2022
B.Tech-V Semester (BT/BI)

Course Code (Credits): 18B11BT513(4)

Max. Marks: 15

Course Name: Immunology

Course Instructors: Dr. Abhishek

Max. Time: 1 Hour

Note: All questions are compulsory. Marks are indicated against each question in square brackets.

- Q1. Indicate whether each of the following statements is true or false. If you think a statement is false, explain why? [6] [CO-2]
- Activation of macrophages increases their expression of class I MHC molecules, making the cells present antigen more effectively.
 - All TH cells express CD4 and recognize only antigen associated with class II MHC molecules.
 - Intracellular antigens are internalized by dendritic cells, degraded in the lysosomes and displayed with class II MHC molecules on the cell surface.
 - Only antigen-presenting cells express class I MHC molecules, whereas nearly all cells express class II MHC molecules.
- Q2. A controversy developed between those who held the concept of humoral immunity proposed by Emil von Behring and Shibasaburo Kitasato and those who agreed with the theory of cell mediated immunity proposed by Elie Metchnikoff. Which theory you believe is correct and why? and if believe both the theory are correct then justify your answer in your own words [3] [CO-1]
- Q3. In the laboratory, supervisor provided you a pair of antigens listed below, indicate which is likely to be more immunogenic for rabbit as model animal and why? Explain your answer. [3] [CO-1]
- A globular protein (same amino acid sequence)
A globular protein (Different amino acid)
 - A 30 kda protein isolated from Monkey
A 30 kda protein isolated from Rabbit
 - A globular protein of 60 kda
A globular protein of 100 kda
- Q4. A patient suffered from bacterial infections and after some time patient again suffered from infections but this time by viral infections. In each case bacterial or viral antigen must be processed and presented together with MHC molecule to determine the route that the antigen takes to enter a immune cells. Explain in detail how the host immune cells processed and presented the antigen in both the above cases. If you think both the antigen processed via same processing route then explain how? [3] [CO-2]