

Name:
Enrolment No:



UPES

End Semester Examination, May 2024

Course: Immunology and Immunotechnology

Semester : IV

Program: Int BMSC Microbiology

Duration : 3 Hours

Course Code: HSMB2016

Max. Marks : 100

Instructions: The Assessment consists of 4 sections.

- **Part A contains 20 questions of 1.5 marks each and all questions are compulsory.**
- **Part B consists of 4 questions of 5 marks each and all questions are compulsory.**
- **Part C consists of 2 questions of 15 marks each and all questions are compulsory.**
- **Part D consists of 2 questions of 10 marks each and all questions are compulsory.**

S. No.	Section A Short answer questions/ MCQ/T&F (20Qx1.5M= 30 Marks)	Marks	COs
Q 1	Identify the antigen presenting cell? a. may be a dendritic cell in the skin b. may be a T cell c. does not produce cytokines d. matures upon antigenic stimulation	1.5	CO1
Q 2	Mention that the following does not characterize adaptive immunity? a. Immunogenic memory b. Non-specific antigens c. Self- and non-self-recognition d. Diversity	1.5	CO2
Q 3	Identify the cell that is not a lymphoid progenitor cell? a. Monocyte b. B-cell c. T-cells d. NK cells	1.5	CO1
Q 4	Mention the types of antibodies a. Five b. Three c. Two d. Four	1.5	CO3
Q 5	Interferons are.....?	1.5	CO4
Q 6	Influenza viruses infect humans and elicit an immune response that is often insufficient to protect the individual from sickness or death. Which of the following structures are on influenza viruses, allowing them to be recognized by the human immune system? a. MHC I molecules b. MHC II molecules c. Pathogen-associated molecular patterns d. Pattern recognition receptor	1.5	CO3

Q 7	State in an experiment, mycobacterial organisms are added to a cell culture of macrophages. It is observed that the macrophages ingest the mycobacteria and then display peptides from those organisms on their cell surfaces. The peptides are displayed in conjunction with MHC molecules. Peptide antigens displayed in this manner are most likely to activate which of the following cells? a. B cells b. Dendritic cells c. Macrophages d. T cells	1.5	CO4
Q 8	Identify which of the following does not constitute a desirable antigen? a. Large size b. Foreignness c. High complexity d. Only reproducible by binary fission	1.5	CO2
Q 9	Identify which one of the following is not lymphoid tissue? a. Tonsils b. Appendix c. Thymus d. Spleen	1.5	CO1
Q 10	State: Which one is the correct statement about innate immunity? a. The innate immune system usually responds more rapidly and with greater magnitude following repeated exposure to the same pathogen. b. Innate immune responses to infections occur quickly and take place before adaptive immune responses. c. Innate immune responses only occur in response to a subset of microbial pathogens. d. Innate immunity is only mediated by secreted cytokines and not by cells.	1.5	CO1
Q 11	Identify which one of the following is responsible for secondary immune responses? a. Mediated by naïve lymphocytes b. Mediated by memory lymphocytes c. Mediated by effector lymphocytes d. Mediated by antibodies	1.5	CO2
Q 12	Mention a secondary lymphoid organ? a. Bone marrow b. Hypothalamus c. Spleen d. Thymus	1.5	CO1
Q 13	Identify which effectors can eradicate parasites? a. Macrophages b. Neutrophils c. Complement d. Eosinophils	1.5	CO1
Q 14	Mention type of cell specifically destroys virally infected body cells.....?	1.5	CO2

Q 15	The mononuclear phagocyte system includes? a. Granulocytes b. Neutrophils c. Kupffer cells d. Eosinophils	1.5	CO1
Q 16	Cross-reaction is the result of epitopes common between two different antigens: True? False?	1.5	CO2
Q 17	In an ELISA, the use of a “second” labeled antibody is required to detect patient serum that binds to the antigen: True? False?	1.5	CO2
Q 18	Agglutination requires complement activation and the production of chemotactic factors: True? False?	1.5	CO3
Q 19	Inflammatory reactions are often associated with mucosal immunity: True? False?	1.5	CO4
Q 20	CD antigens are used to identify cell types and their functions: True? False?	1.5	CO1
Section B (4Qx5M=20 Marks)			
Q 1	Describe the major elements of the innate immune system that provide defence against pyogenic infection. Illustrate your answer with five diverse examples?	5	CO1
Q 2	Compare and contrast the structure, expression, and functions of MHC class I and class II molecules?	5	CO3
Q 3	Briefly describe cellular immunity and humoral immunity?	5	CO2
Q 4	Discuss the principles and application of antigen and antibody interactions?	5	CO4
Section C (2Qx15M=30 Marks)			
Q 1	Write short notes on the importance of each of the following in the Immunity? a. Antigen Presenting Cells? b. T Cells? c. Antibodies?	15	CO1
Q 2	Describe the strategies used by the immune system to protect against bacterial infection? Illustrate your answer with a diagram and an example? justify why we need specific immunity?	15	CO4
Section D (2Qx10M=20 Marks)			
Q 1	Discuss the principle of ELISA? Diagrammatically illustrate the different types of ELISA techniques used for the assay?	10	CO2
Q 2	Explain whether antigens and immunogens are similar? Discuss about the factors influencing the immunogenicity of the pathogen?	10	CO3