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GIET UNIVERSITY, GUNUPUR – 765022
 B. Tech (Fifth Semester – Regular) Examinations, December – 2022
BPCBT5020 – Immunology & Immunotechnology
 (Biotechnology)

Time: 3 hrs

Maximum: 70 Marks

Answer ALL Questions

The figures in the right hand margin indicate marks.

PART – A: (Multiple Choice Questions)

(1 x 10 = 10 Marks)

- Q.1. Answer ALL questions [CO#] [PO#]
- a. What is the life span of the memory B-cells of the immune system? CO1 PO1
- (i) A few hours (ii) A few days
- (iii) A few years (iv) A few years to whole life CO1 PO1
- b. Which of the following substances will not stimulate an immune response unless they are bound to a larger molecule?
- (i) Antigen (ii) Hapten
- (iii) Carrier (iv) Virus
- c. Which of the following immune cells/molecules are most effective at destroying intracellular pathogens? CO1 PO2
- (i) T cytolytic cells (ii) T helper cell
- (iii) B cell (iv) NK cell
- d. B-cells and T-cells are two types of cells involved in _____. CO2 PO4
- (i) Innate Immunity (ii) Active immunity
- (iii) Passive immunity (iv) Acquired immunity
- e. Which of the following is the central molecule in complement pathway? CO2 PO6
- (i) C1 (ii) C2b
- (iii) C3b (iv) C5
- f. Helper T cells assist in the functions of CO2 PO4
- (i) B cells (ii) T cells
- (iii) B cells and T cells (iv) None of the above
- g. Which of the following is an immunosuppressant drug? CO3 PO4
- (i) Antihistamine (ii) Cyclosporin
- (iii) Neomycin (iv) Streptokinase
- h. The inappropriate response of immune system towards a relatively harmless antigen causing harm to the host is referred as CO3 PO6
- (i) Auto-immune diseases (ii) Hypersensitivity
- (iii) Immunodeficiency (iv) Tolerance
- i. Which of the following is introduced during smallpox vaccination? CO4 PO4
- (i) Antigens (ii) Attenuated vaccine
- (iii) Live Vaccine (iv) Adjuvant
- j. In agglutination reactions, the antigen is a..... and in precipitation reactions, the antigen is a..... CO2 PO6
- (i) Bacterium/virus (ii) Protein/Antibody
- (iii) Whole cell/soluble molecule (iv) Soluble molecule/whole cell

PART – B: (Short Answer Questions)**(2 x 10 = 20 Marks)**Q.2. Answer ALL questions

	[CO#]	[PO#]
a. How would your body deals with the foreign pathogenic microorganism?	CO1	PO1
b. Which immunity provides specific immunity and how?	CO1	PO2
c. Differentiate between primary and secondary immune response.	CO2	PO4
d. Endocytic pathway of antigen processing is essential for which type of antigens and name the cells involved?	CO2	PO4
e. Differentiate between monoclonal and polyclonal antibodies.	CO2	PO6
f. Name two systemic auto immune diseases in human?	CO3	PO4
g. What do you mean by host versus graft rejection?	CO3	PO4
h. What is anaphylactic reaction?	CO3	PO5
i. How antigen-antibody reaction principle is useful in blood grouping?	CO4	PO6
j. What is killed vaccine? Give an example	CO4	PO4

PART – C: (Long Answer Questions)**(10 x 4 = 40 Marks)**Answer ALL questions

	Marks	[CO#]	[PO#]
3. a. What is immunity? Briefly explain the types of immunity.	5	CO1	PO1
b. Describe the principle mechanism of acquired immunity.	5	CO1	PO2
(OR)			
c. Define lymphoid organs? Explain the structure and function of both lymph node and spleen.	2+8	CO1	PO2
4. a. Give a note structure and function of MHC-I?	5	CO2	PO2
b. Explain the cytosolic pathway of antigen processing and presentation?	5	CO2	PO4
(OR)			
c. What is hybridoma technology? Describe the principle and steps involved in production of monoclonal antibodies.	2+8	CO2	PO4
5. a. Give a note on immune tolerance?	5	CO3	PO5
b. Discuss various types of transplantations with implications.	5	CO3	PO5
(OR)			
c. What is hypersensitivity reaction? Explain Gell and Coombs classification of hypersensitivity reaction.	2+8	CO3	PO4
6. a. Give a detailed note on lymphokines?	5	CO4	PO4
b. Explain the principle of sandwich ELISA with its applications?	5	CO4	PO6
(OR)			
c. What do you mean by immunization? Give a detailed account on types of vaccines with examples.	2+8	CO4	PO4

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