Reg. No. : | | | | | | | | | | | | |

Question Paper Code: U7D03

B.E./B.Tech. DEGREE EXAMINATION, NOV 2024

Seventh Semester

Biotechnology

21UBT703 IMMUNOLOGY

(Regulations 2021)

Duration: Three hours | Maximum: 100 Marks

Answer All Questions

PART A - (10x 2 = 20 Marks)

1.	How do C` proteins facilitate phagocytosis?	CO2-App
2.	Are antigen and immunogen similar? Write about the factors influencing immunogenicity of the pathogen	CO2- App
3.	Discuss the role of complement proteins in immune responses.	CO1 U
4.	What is the role of adjuvants in immunology?	CO1 U
5.	Where IgA is primarily found in the body?	CO1 U
6	Name the key proteins involved in the alternative pathway activation.	CO1 U
7	What is the importance of HLA matching in organ transplantation?	CO1 U
8	What is type I hypersensitivity and what are its main characteristics?	CO1 U
9	Name a type of white blood cell associated with autoimmune responses.	CO1 U
10	Define Autoimmunity	CO1 U

PART – B (5 x 16= 80Marks)

11.	(a)	Analyze the structure and functions of immuno reactive cells, including macrophages, granulocytes, and NK cells. Provide a case study where the dysfunction of these cells leads to a specific immunological disorder, and propose potential therapeutic approaches to manage the condition.	CO2 App	(16)
		Or		
	(b)	Innate and adaptive immunity act in cooperative and interdependent ways to protect the host. Discuss the collaboration of these two forms of immunity.	CO2 App	(16)

12.	(a)	Describe the processes involved in the development, maturation, activation, and differentiation of T-cells. Apply this knowledge to explain how defects in these processes can lead to immuno deficiencies or autoimmune diseases.	CO2 App	(16)
		Or		
	(b)	Analyze the process of B-cell development, activation, and differentiation. Provide a case study where abnormalities in these processes result in a specific immunological disorder, and propose potential treatments to address the condition.	CO2 App	(16)
13.	(a)	Describe the structure of immuno globulins and explain the differences among the five major types. Discuss their distribution and biological properties	CO1 U	(16)
		Or		
	(b)	Describe the structure and function of monoclonal and polyclonal antibodies. How are they produced, and what are their key differences in terms of specificity and application?	CO1 U	(16)
14.	(a)	Explain the immunological challenges in organ transplantation. Provide a detailed example of how immunosuppressive therapies are used to prevent transplant rejection, and discuss their potential side effects.	CO2 App	(16)
		Or		
	(b)	Analyze the role of cytokines, lymphokines, and chemokines in immune regulation. Provide an example of a clinical condition where dysregulation of these molecules occurs, and propose a potential therapeutic strategy to address the condition.	CO2 App	(16)
15.	(a)	Demonstrate the diagnosis and management of Systemic Lupus Erythematosus (SLE). Include the role of antinuclear antibody tests, autoantibody tests, and other relevant laboratory investigations in your answer.	CO2 App	(16)
		Or		
	(b)	Examine a clinical scenario involving Hashimoto's Thyroiditis. Discuss the diagnostic tests used to confirm the diagnosis and outline the treatment strategies to manage the condition.	CO2 App	(16)