Avinashilingam Institute for Home Science and Higher Education for Women

(Deemed to be University under Category 'A' by MHRD, Estd. u/s 3 of UGC Act 1956)
Re-accredited with 'A++' Grade by NAAC. Recognised by UGC Under Section 12B
Coimbatore - 641 043, Tamil Nadu, India

Bachelor's Degree Arrear Examination – November 2024
II Semester

Class :2023 Batch **Time:3Hours**
Major :Biochemistry&Biotechnology **Max.Marks:100**

23BBCC02 Immunology

Course Outcome:

CO1: Gain an insight into the various cells and organs involved in the immune system.
CO2: Understand the components of the immune system and the molecular mechanisms involved in their interactions.
CO3: Gain knowledge on the various disorders and diseases. affecting the immune system.
CO4: Comprehend the immunization procedures and defense mechanisms.
CO5: Learn practical aspects of various immunological techniques.

Part A **10x1= 10**
Choose the Correct Answer

1. The organ that can serve as both a primary and secondary lymphoid organ is **CO1 K2**
   a. Spleen b. Thymus c. Peyer's patches d. Bone marrow

2. The principal developmental organ of T cells corresponds to the **CO1 K1**
   a. Thymus b. Bone Marrow c. Both options A and B are correct d. Spleen

3. For the first time adult stem cells were used in **CO2 K2**
   a. Bonemarrowtransplantation b. Erythropoiesis
   c.Neurotransmission d. Kidneytransplantation

4. Recognition of self vs. non-self by the adaptive immune system in humans is accomplished in which of the following ways? **CO2 K3**
   a. Exposure of B cells to the body's own antigens in the Bursa of Fabricius.
   b. Exposure of B cells to the body's own antigens in the thymus
   c. Exposure of T cells to the body's own antigens in the thymus
   d. Exposure of T cells to the body's own antigens in the Bursa of Fabricius

5. Which type of hypersensitivity reaction is known as a delayed hypersensitivity reaction?
   a. Type I b. Type II c. Type III d. Type IV **CO3 K2**

6. Which of the following is a non-organ-specific (systemic) autoimmune disease? **CO3 K2**
   a. Pernicious anemia b. Systemic lupus erythematosus (SLE)
   c. Hashimoto's thyroiditis d. Myasthenia gravis

7. Monoclonal antibodies against CD20 have been used to treat **CO4 K2**
   a. B cell lymphoma b. HIV-1 c. HTLV-1 d. Multiple sclerosis

8. For which discovery did Georges Köhler and César Milstein share the noble prize in 1984? **CO4 K2**
   a. Inventing genome sequencing
   b. Discovery the structure of DNA
   c. Discovery of B-cell cancer myeloma
   d. Discovery of the process of producing monoclonal antibodies

9. The compound added in vaccine to enhance its power is **CO5 K2**
   a. Adjuvant b. Preservative c. Drugs d.TCA

10. In the ABO system, blood group 'O' is characterized by the **CO5 K3**
    a. presence of antigen O
    b. presence of both antigen A and antigen B
    c. absence of both antigen A and antigen B
    d. presence of antigen A and absence of antigen

Part B 5x6=30

Answer ALL questions

Each answer should not exceed 400 words or two pages

11.a. Differentiate primary and secondary immune response.	CO1 K3
(or)	
11.b. Describe the functions of antigen presenting cells.	CO1 K2
12.a. Illustrate the structure of antibody and describe its parts.	CO2 K2
(or)	
12.b. Explain the structure and functions of Class I MHC molecules.	CO2 K2
13.a. Describe the basic concepts, causes and types of autoimmune diseases.	CO3 K1
(or)	
13.b. What are Immunodeficiency diseases? Explain with one example.	CO3 K1
14.a. Summarize the recombinant DNA vaccines.	CO4 K2
(or)	
14.b. Differentiate between active and passive immunization.	CO4 K3
15.a. Write about ABO & Rh blood grouping systems.	CO5 K2
(or)	
15.b. Review the principle and applications of Immunodiffusion.	CO5 K3

Part C 5x12=60

Answer ALL questions

Each answer should not exceed 800words or four pages

16.a. Elaborate the differentiation and maturation of B-cells and T- cells	CO1 K3
(or)	
16.b. Given an account of defense mechanisms of the immune system.	CO1 K2
17.a. Outline the classical and alternative pathways of complement system.	CO2 K2
(or)	
17.b. Explicate the types and functions of immunoglobulins.	CO2 K2
18.a. Highlight the mechanisms of type I and II hypersensitivity.	CO3 K3
(or)	
18. b. Explain the following: i. Hashimoto's thyroiditis ii. Systemic Lupus Erythematosus.	CO3 K2
19.a. Outline the Hybridoma technology with illustration.	CO4 K2
(or)	
19.b. Describe the types and principles of vaccine production.	CO4 K2
20.a. Give an overview of western blotting.	CO5 K2
(or)	
20.b. Classify ELISA with illustration.	CO5 K3