

QP Code : P24A032

Reg. No :

Name :

ST MARY'S COLLEGE (AUTONOMOUS), THRISSUR-20

I SEMESTER M.Voc (CBCSS-VPG) DEGREE EXAMINATION, November 2024

M.Voc Applied Biotechnology

SDC1AB02 : Immunology and immunotechnology

2024 Admission Onwards

Time : 3 Hours

Maximum Weightage : 30

Part A

*Short answer type questions: Answer **any four** questions. Weightage 2 for each question*

1. Describe the process of clonal selection and expansion in B cells upon encountering an antigen. [BTL2]
2. Discuss the significance of agglutination in diagnostic tests. [BTL2]
3. If a patient has a deficiency in NK cell function, predict how might this affect their ability to control viral infections. [BTL3]
4. What are the most common autoimmune diseases and its primary affected organs or systems? [BTL1]
5. Summarize the function of primary lymphoid organs in immune response. [BTL2]
6. Analyze the differences between the primary and secondary immune responses. [BTL3]
7. Analyze the differences between Type II and Type III hypersensitivity reactions. How do these differences influence the clinical manifestations of diseases like hemolytic anemia and systemic lupus erythematosus? [BTL4]

(4x2 = 8 Weightage)

Part B

*Short essay-type questions: Answer **any four** questions. Weightage 3 for each question*

8. Describe the process of Western blotting in detail. [BTL2]
9. Analyze the advantages and limitations of conventional vaccines compared to DNA vaccines in the context of pandemic preparedness. How do their differences in development, production, and immune response impact their roles in a global health crisis? [BTL4]
10. Write notes on cytokines. [BTL1]
11. What do you mean by immunomodulation? Define immunosuppression and immunostimulation. List three examples of each in clinical practice. [BTL2]

Turn Over

12. List the four main subclasses of IgG and briefly describe the function of each. [BTL4]
13. Examine the impact of immunosuppressive therapy on long-term transplant success. [BTL4]
14. Compare and contrast the roles of haptens and adjuvants in modulating the immune response. [BTL3]

(4x3 = 12 Weightage)

Part C

*Essay-type questions: Answer **any two** questions. Weightage 5 for each question*

15. Describe how you would produce and purify antibodies for use in a specific research application, such as detecting a novel protein or pathogen. [BTL3]
16. Examine the process of antigen presentation by MHC class II molecules to explain the activation of helper T cells during an infection. [BTL3]
17. Apply the concept of vaccination schedules to design an immunization plan for a child in a high-risk area for measles. [BTL3]
18. List the structural features of an antigen that determine its immunogenicity. [BTL4]

(2x5 = 10 Weightage)

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