

PSG COLLEGE OF ARTS & SCIENCE  
(AUTONOMOUS)

BSc DEGREE EXAMINATION MAY 2024  
(Fourth Semester)

Branch - BIOTECHNOLOGY

IMMUNOLOGY

Time: Three Hours

Maximum: 50 Marks

SECTION-A (5 Marks)

Answer ALL questions

ALL questions carry EQUAL marks

(5 x 1 = 5)

- Which substances will not stimulate an immune response unless they are bound to a larger molecule?  
(i) Antigen (ii) Virus  
(iii) Hapten (iv) Adjuvant
- B and T cells are produced by stem cells that are formed in \_\_\_\_\_.  
(i) Bone marrow (ii) The liver  
(iii) The circulatory system (iv) The spleen
- In agglutination reactions, the antigen is a..... and in precipitation reactions, the antigen is a.....  
(i) whole-cell/soluble molecule (ii) Soluble molecule/whole-cell  
(iii) Bacterium/virus (iv) Protein/carbohydrates
- B Cells are activated by \_\_\_\_\_.  
(i) Complement (ii) Antibody  
(iii) Interferon (iv) Antigen
- Monoclonal antibodies recognize a single \_\_\_\_\_.  
(i) Antigen (ii) Bacterium  
(iii) Epitope (iv) B cell

SECTION - B (15 Marks)

Answer ALL Questions

ALL Questions Carry EQUAL Marks

(5 x 3 = 15)

- a. Compare the different types of Immunity?  
OR  
b. Compare the origin and development of T and B cells.
- a. Differentiate immunogens from immunoglobulins.  
OR  
b. List out the applications of antibodies.
- a. What are cytokines? Mention the classes of cytokines.  
OR  
b. Describe the classical pathway of complement system.
- a. Explain about Type I hypersensitivity reactions.  
OR  
b. List out the application of Monoclonal antibodies.

Cont...

- 10 a. Distinguish direct and indirect agglutination test.  
OR  
b. Give the principle and applications of ELISA.

**SECTION -C (30 Marks)**

Answer ALL questions

ALL questions carry EQUAL Marks

(5 x 6 = 30)

- 11 a. Give an outline cells and organs of the Immune system.  
OR  
b. Describe the structure and function of Immunoglobulins.
- 12 a. Explain the principle and application of Radioimmuno assay.  
OR  
b. Illustrate and explain the production technology of Monoclonal antibodies.
- 13 a. Explain the technique of HLA tissue typing.  
OR  
b. How will you purify and characterize various antigens.
- 14 a. Discuss about vaccine technology and its importance.  
OR  
b. Discuss the in vivo methods of delayed type hypersensitivity assessment.
- 15 a. Give a brief account on isolation and characterization of T- lymphocytes.  
OR  
b. Explain in detail about the techniques in purification of antibodies.

Z-Z-Z

END