

Seat No. : \_\_\_\_\_

# MJ-108

May-2022

B.Sc., Sem.-V

CC-303 : Microbiology

(Principles of Immunology)

Time : 2 Hours]

[Max. Marks : 50

- Instructions :**
- (1) All questions in **Section-I** carry equal marks.
  - (2) Attempt any **Three** questions in **Section-I**.
  - (3) **Section-II** is COMPULSORY.

## SECTION – I

1. (A) Describe structure and functions of spleen and lymph node. 7  
(B) Discuss in brief structure and functions of granulocytes. 7
2. (A) Explain characteristics of immune response. 7  
(B) Discuss the properties of human class I and II MHC protein. 7
3. (A) Describe various properties of immunogens that contribute to its immunogenicity. 7  
(B) Classify immunoglobulins and discuss their functions in brief. 7
4. (A) Explain how diverse types of antibodies can be generated in our body. 7  
(B) Discuss production of monoclonal antibodies by hybridoma technology. 7
5. (A) Discuss principle and applications of precipitation reactions. 7  
(B) Explain mechanism and significance of ELISA. 7
6. (A) Discuss skin test and its significance in diseases diagnosis. 7  
(B) Explain principle and applications of radio immunoassay. 7
7. (A) Discuss delayed type of hypersensitivity reactions. 7  
(B) Describe autoimmune diseases with examples. 7

8. (A) Discuss mechanisms for rejection of a transplanted organ. 7  
(B) Write a note on blood banking. 7

### SECTION – II

9. Answers the following in 1-2 lines (Any 8) : 8
- (1) What is anamnestic response ?
  - (2) Define the term opsonization.
  - (3) Name the medium used for producing hybridoma cells.
  - (4) Mention the role of TH<sub>2</sub> helper cells.
  - (5) What is herd immunity ?
  - (6) Write name of any one super antigen.
  - (7) Write an example of fluorochrome used to tag antibodies.
  - (8) Name any two cytokines.
  - (9) What is RAST ?
  - (10) What is the use of western blotting in serology ?
  - (11) Define the term anaphylaxis.
  - (12) Name any one primary immunodeficiency disease.
  - (13) What is Xenograft ?
  - (14) Name any one tumor antigen.
  - (15) Name any one anticoagulant used for blood collection.
  - (16) Which cells of blood occur in highest numbers ?
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