

Seat No. : _____

JI-123

January-2021

B.Sc., Sem.-V

CC-303 : Microbiology

(Principles of Immunology)

(New Syllabus)

Time : 2 Hours]

[Max. Marks : 50

- Instructions :**
- (1) Students should write the answers from the **question paper** applicable to them; either **“NEW COURSE”** or **“OLD COURSE”** and it must be mentioned at the beginning of the **answer paper**.
 - (2) Answer any **three (3)** questions **out of eight (8)** questions. Question No. **9** is compulsory.
 - (3) Draw figures wherever necessary.
 - (4) Figures to the right indicate marks.

1. Explain in detail: Types of **acquired immunity**. **14**
2. (A) Discuss in detail **about lymphnode**. **7**
(B) Describe the **characteristics** of immune response. **7**
3. Describe in detail **the classes** of antibody. **14**
4. (A) **Discuss** in detail: types of antigens. **7**
(B) **Write a note** on: adjuvant and its types. **7**
5. **Explain in detail : ELISA** **14**
6. (A) What is immunofluorescence ? Explain direct and indirect immunofluorescence. **7**
(B) Explain RIA. **7**
7. Write in detail about Transplantation immunity. **14**

8. (A) Write in detail about Type 4 hypersensitivity. 7
(B) Give a brief introduction to blood banking. 7

9. Give short and specific answers in 1-2 lines only : (any eight) 8

- (1) What are CD8 cells ?
 - (2) On which cells do you find class I MHC molecule ?
 - (3) Define Species immunity.
 - (4) What is secondary immune response ?
 - (5) Define : Epitope
 - (6) Give 2 examples of adjuvant.
 - (7) Which class of immunoglobulin is able to cross placenta ?
 - (8) Who invented the hybridoma technology for monoclonal antibody production ?
 - (9) Define : agglutination.
 - (10) What is SRID ?
 - (11) Give any one example of a fluorescent dye.
 - (12) Who won the Nobel prize for the development of RIA ?
 - (13) Which envelope glycoprotein present on HIV binds to CD4 protein on T_H cells ?
 - (14) What are Rhogam antibodies ?
 - (15) What is Bombay blood group ?
 - (16) Define: xenograft.
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1. Explain in detail: Types of Immunity. 14
2. (A) Write a note on: Monoclonal antibodies. 7
(B) Discuss the structure and function of one central lymphoid organ. 7
3. Explain in detail the basic structure of immunoglobulin molecule. 14
4. (A) Discuss various types of antigens. 7
(B) Explain in detail : RIA 7
5. Describe giving examples different types of Autoimmune diseases. 14
6. (A) Discuss Type I Hypersensitive reactions in detail. 7
(B) Explain any two Primary immunodeficiency diseases. 7
7. Enlist and explain : Types of vaccines. 14

8. (A) Explain ABO blood grouping system in detail. 7
(B) Give a brief outline of blood constituents. 7
9. Give short and specific answers in 1-2 lines only : (any **eight**) 8
- (1) Define Herd immunity.
 - (2) Which cells serve as antigen presenting cells ?
 - (3) Which are the two arms of Immune response ?
 - (4) Name two secondary lymphoid organs.
 - (5) Define : Hapten.
 - (6) What is Freund's complete adjuvant made up of ?
 - (7) Which class of immunoglobulin has a pentameric structure ?
 - (8) What is the full form of ELISA ?
 - (9) Define anaphylaxis.
 - (10) What is the full form of SCID ?
 - (11) What is xenotransplant ?
 - (12) What is a malignant tumor ?
 - (13) Who gave the ABO blood grouping system ?
 - (14) What are lectins ?
 - (15) Give the full form of BCG.
 - (16) Give one hazard of vaccine.
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