

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<sub>H</sub> 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.                                 | <b>14</b> |
| 2. | (A) Write a note on: Monoclonal antibodies.                           | <b>7</b>  |
|    | (B) Discuss the structure and function of one central lymphoid organ. | <b>7</b>  |
| 3. | Explain in detail the basic structure of immunoglobulin molecule.     | <b>14</b> |
| 4. | (A) Discuss various types of antigens.                                | <b>7</b>  |
|    | (B) Explain in detail : RIA   | <b>7</b>  |
| 5. | Describe giving examples different types of Autoimmune diseases.      | <b>14</b> |
| 6. | (A) Discuss Type I Hypersensitive reactions in detail.                | <b>7</b>  |
|    | (B) Explain any two Primary immunodeficiency diseases.                | <b>7</b>  |
| 7. | Enlist and explain : Types of vaccines.                               | <b>14</b> |

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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