

**V Semester B.Sc. Degree Examination, April/May 2023****(CBCS Scheme)****BIOTECHNOLOGY (Paper VI)****Immunology and Animal Biotechnology**

Time : 3 Hours

SECTION – D

Max. Marks : 70

**Instruction : Draw *neat* labelled diagram wherever necessary.****SECTION – A**

- I. Write short notes on the following :

(5×2=10)

- 1) Immunogenecity.
- 2) B Lymphocytes.
- 3) Attenuated Vaccine.
- 4) Biological fluid.
- 5) Transfection.

**SECTION – B**

- II. Answer **any four** of the following :

(4×5=20)

- 6) Describe the types of defense mechanism in innate immunity.
- 7) What are primary lymphoid organ ? Add a note on Thymus.
- 8) Explain the technique and application of Immunoelectrophoresis.
- 9) Define disaggregation. Explain the Mechanical method.
- 10) Give an account on primary cell culture and secondary cell culture.

**SECTION – C**

- III. Answer **any three** of the following :

(3×10=30)

- 11) Define immunoglobulin. Explain the structure and function of Ig A and Ig M.
- 12) What are complement protein ? Explain Lectin pathway.
- 13) Describe Hypersensitivity type III and IV with suitable example.
- 14) Explain HAT selection method in screening of hybrid cell.



15) Give an account on :

- Transgenic sheep
- Application of Animal Biotechnology.

### SECTION – D

IV. Answer the following in **one** sentence : **(10x1=10)**

- Neutrophils.
- ABO Blood grouping.
- Allergic reaction.
- Megakaryocytes.
- Opsonin.
- Agranulocytes.
- Electrofusion.
- Expressed protein.
- EGF.
- Log phase.

### SECTION – A

I. Write short notes on the following :



### SECTION – B

II. Answer such four of the following :

- Describe the bases of defense mechanism in immune immunity.
- Write the principles and application of immunosuppression.
- Explain the techniques and synthesis of antibodies.
- Define dislodgement. Explain the mechanisms involved.
- Give an account on phagocytosis and secondary cell outline.

### SECTION – C

III. Answer such three of the following :

- Define immunopathology. Explain the structure and function of IgM, IgG.
- What is complement system ? Explain its function briefly.
- Describe Haptonegativity types III and IV with suitable example.
- Explain HAT selection mechanism in synthesis of lymphoid cell.