

M.Sc. (Zoology) Semester - 2 (CBCS) Examination
April/May-2023 (NEW COURSE)
Biotechnology & Immunology(CORE)

Time: 2:30 Hours**Marks: 70****Instructions:**

1. All questions are compulsory.
2. Figures to the right indicate marks.

Q .1 Answer the following (any seven out of ten, each of **two marks) (14)**

1. Explain opportunity in the field of Biotechnology.
2. Define the term remediation.
3. Define Biotechnological application of immobilization cell.
4. What is blunt end?
5. Explain the blue-white screening?
6. Enlist key characteristics of cosmid vector.
7. Discuss the importance of tissue culture.
8. Give the two example of tissue culture techniques widely used for plant culture.
9. Explain immunofluorescence in brief.
10. What is delayed hypersensitivity.

Q. 2 Answer the following. (any two out of three, each of **seven marks) (14)**

1. Explain principle and protocols of immobilize enzyme and mention its application.
2. Discuss the cell immobilization techniques and explain the advantage of immobilization.
3. Explain the basic principle, methods, and advantage of bioremediation.

Q.3 Answer the following. (14)

1. Describe basic steps for tissue culture development. (05)
2. Explain basic principle, techniques, and advantage of plant tissue culture. (05)
3. Explain types of tissue culture technique. (04)

OR

Q. 3 Answer the following (each of **seven marks) (14)**

1. Discuss principle and techniques of animal tissue culture.
2. Write a note on plant tissue culture.

Q.4 (A) Answer the following (any two out of three, each of **five marks) (10)**

1. Explain PBR322 plasmid with its molecular feature.
2. Describe the techniques used for screening of recombinant clone.
3. Explain the types of restriction enzyme with its key features and molecular application.

Q.4 (B) Answer the following (any One out of two) (04)

1. Explain the concept of genetic engineering.
2. Explain gene targeting.

Q.5 Answer the following (any two out of four, each of **seven marks) (14)**

1. Explain principle and procedure of monoclonal antibody and explain its advantage.
2. Discuss autoimmunity in detail.
3. Write a short note on agglutination as an antigen-antibody interaction.
4. Explain type II hypersensitivity with suitable diagram.
