

M.Sc. (Micro) Semester - 2 (CBCS) Examination
March/April – 2026 (As Per Syllabus Year-2018)
Biotechnology & Immunology(CORE)

Time: 2:30 Hours

Marks:70

Instructions:

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

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- Que.1** **Answer the following** (any seven out of ten) **(14)**
- (1) What is modern biotechnology?
 - (2) Define bioremediation.
 - (3) Enlist two methods of DNA extraction.
 - (4) What is a host-vector system?
 - (5) Explain the uses of sterilization in PTC.
 - (6) Define plant tissue culture in brief
 - (7) Define T-cells.
 - (8) Explain precipitation reaction in brief.
 - (9) Define animal tissue culture.
 - (10) Define monoclonal antibodies.
- Que.2** **Answer the following** (any two out of three) **(14)**
- (1) Explain advantages and disadvantages of immobilization techniques.
 - (2) Discuss in-situ and ex-situ bioremediation with examples.
 - (3) Explain the definition, history, and career scope of enzyme technology.
- Que.3** **Answer the following** (any two out of three) **(14)**
- (1) Explain gene targeting and its importance in genetic engineering. (05)
 - (2) Describe methods for screening recombinant clones. (05)
 - (3) Explain the steps involved in DNA isolation techniques. (04)
- OR
- Que.3** **Answer the following**
- (1) Explain restriction enzymes and their types with suitable examples.
 - (2) Write a note on DNA isolation techniques.
- Que.4(A)** **Answer the following** (any two out of three) **(10)**
- (1) Explain the principles of plant tissue culture.
 - (2) Describe techniques used in animal tissue culture.
 - (3) Explain the concept of totipotency and its significance.
- Que.4(B)** **Answer the following** (any one out of two) **(04)**
- (1) Write a note callus culture.
 - (2) Explain any one plant tissue culture technique.
- Que.5** **Answer the following** (any two out of four) **(14)**
- (1) Explain hypersensitivity and its types.
 - (2) Describe adaptive immunity.
 - (3) Explain the structure of immunoglobulin with a diagram.
 - (4) Write a note on immunofluorescence.
