



DBX-003-1192002

Seat No. _____

**M. Sc. (Microbiology) (Sem. II) (CBCS)
(W.E.F. 2016) Examination**

July - 2022

MICRO-208 : Biotechnology & Immunology

Faculty Code : 003

Subject Code : 1192002

Time : $2\frac{1}{2}$ Hours]

[Total Marks : 70

- 1 Answer any Seven of the following (2 marks each) 14
- (a) What is biostimulation ?
 - (b) Why do the properties of enzymes change upon immobilization ?
 - (c) Enlist various matrices used for enzyme immobilization.
 - (d) Define isoschizomeric restriction enzyme with a suitable example.
 - (e) What is gene targeting ?
 - (f) Enlist hormones routinely used for plant tissue culture.
 - (g) What are the applications of plant tissue culture in horticulture ?
 - (h) Enlist biological activities of antibody.
 - (i) What is the difference between agglutination and precipitation ?
 - (j) Enlist symptoms of inflammation.
- 2 Answer any Two of the following (7 marks each) 14
- (a) Describe advantages & disadvantages of ex situ bioremediation processes.
 - (b) Explain any one method of cell immobilization and its applications.
 - (c) Discuss enzyme immobilization by covalent-binding with its advantages and limitations.

- 3** Answer the following (7 Marks each) **14**
- (a) Discuss various restriction enzymes.
 - (b) Explain the basic steps of genetic engineering in detail.
- OR**
- (a) Discuss the screening of recombinant clones.
 - (b) Write a note on applications of plant tissue culture in various fields.
- 4** Answer the following (7 Marks each) **14**
- (a) Explain basic steps of plant tissue culture.
 - (b) Give a brief account of immediate hypersensitivity.
- 5** Answer any Two of the following (07 Marks each) **14**
- (a) Innate immune system.
 - (b) Autoimmune diseases.
 - (c) Monoclonal antibodies.
 - (d) Multiple shoot culture and its importance.
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