



PAR-003-1192002 Seat No. _____

M. Sc. (Microbiology) (Sem. II) (CBCS)

(W.E.F. 2016) Examination

August / September - 2020

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) Why do properties of enzymes change upon immobilization?
- (b) State the difference between static and dynamic method of immobilizing enzyme by adsorption.
- (c) Name important micronutrients used in plant tissue culture media.
- (d) Write applications of plant tissue culture in horticulture.
- (e) Define the term opsonization.
- (f) What is inflammation?
- (g) Enlist factors influencing immunogenicity?
- (h) What is the difference between precipitation and agglutination?
- (i) What is the function of restriction enzymes within a cell?
- (j) What is the role of EDTA in DNA isolation technique?

2 Answer any **two** of the following : (7 Marks each) **14**

- (a) Give an account of strategies used for immobilization of cells.
- (b) Describe *in situ* bioremediation processes.
- (c) Describe any one method of enzyme immobilization and its applications.

- 3** Answer the following : (7 Marks each) **14**
- (a) Explain gene setup, selection strategy, application and limitation of pBR322 vector.
 - (b) Write a short note on restriction endonucleases.
- OR**
- 3** Answer the following : (7 Marks each) **14**
- (a) Explain basic procedures of various DNA isolation techniques.
 - (b) Discuss the steps of genetic engineering in detail.
- 4** Answer the following : (7 Marks each) **14**
- (a) Write a note on applications of plant tissue culture in various fields.
 - (b) Give a brief account of Ig classes and its biological activities.
- 5** Answer any **two** of the following : (7 Marks each) **14**
- (a) Adaptive immune system.
 - (b) Adjuvants and its applications.
 - (c) Immediate hypersensitive reactions.
 - (d) Basic protocols of plant tissue culture.
-