



Seat No. _____

HP-003-1192002

**M. Sc. (Sem.-I) (CBCS)
(W.E.F. 2016) Examination**

April - 2023

Micro-208 : Biotechnology & Immunology

Faculty Code : 003

Subject Code : 1192002

Time : $2\frac{1}{2}$ Hours / Total Marks : 70

1 Answer the following questions: (Attempt any 7) **7×2**

- (1) What is immobilisation of cells with example?
- (2) Explain the 'In situ and Ex situ bioremediation with their merits and limitation.
- (3) Enlist applications of ATC.
- (4) Write steps of gene cloning.
- (5) What is difference between cloning vector and expression vector.
- (6) Discuss about role of auxins in regeneration of plant cells.
- (7) What is difference between antigenicity and immunogenicity.
- (8) What are advantages of Immunofluorescence.
- (9) Write applications of monoclonal antibodies.
- (10) Write fundamental difference between innate and adaptive immunity.

2 Answer the following questions: (Any two out of three) **2×7**

- (1) Explain in detail about Immobilization of cell.
- (2) Write note on technique of animal tissue culture.
- (3) Write note on methods of Bioremediation.

3 Answer the following questions: **2×7**

- (1) Write note on steps involved in genetic engineering.
- (2) Write difference between prokaryotic and eukaryotic DNA isolation.

OR

- (1) Write note on Restriction enzymes and its applications.
- (2) Enumerate the steps involved in the establishment and maintenance of callus and suspension culture.

4 Answer the following questions: **2×7**

- (1) What is totipotency? How can we exploit totipotency in plant tissue culture?
- (2) Write a note on Vectors used in gene cloning.

5 Answer the following questions: (Any **two**) **2×7**

- (1) Write note on Structure and function of Ig molecule.
- (2) Write note on ELISA and its applications.
- (3) Write note on Hypersensitive reactions.
- (4) Write note on Autoimmunity.
