Seat No. _____

HO-003-1142002

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

April - 2023

Botany : BOT - 208

(Biotechnology & Immunology)

Faculty Code : 003

Subject Code : 1142002

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

1 Answer the following : (any **seven**) **7×2=14**

(a) Write the step for gene cloning.

(b) Highlight characteristics of IgM.

(c) Define RE enzymes as sticky and blunt end cutters.

(d) Define differentiation and redifferentiation.

(e) What are xenobiotic compounds?

(f) What is balance ratio in plant tissue culture?

(g) What is the difference between monoclonal and polyclonal antibody?

(h) Write the explant selection criteria.

(i) Enlist various methods of enzyme immobilization.

(j) List out different types of defensive barriers in innate immunity.

2 Answer the following : (any **two**) **2×7=14**

(a) Describe bioremediation processes.

(b) Describe any one method of enzyme immobilization and its applications.

(c) Briefly describe DNA isolation techniques.

3 Answer the following : **2×7=14**

(a) Describe the method of genetic engineering.

(b) Explain types of restriction enzymes.

OR

3 Answer the following : **2×7=14**

(a) Write note on plasmids.

(b) What is callus? Write application of callus culture.

4 Answer the following : **2×7=14**

(a) Write major steps of plant tissue culture and applications in brief.

(b) Give brief account on essential media components of plant tissue culture.

5 Write the short note on any **two** of the following : **2×7=14**

(a) ELISA

(b) Hypersensitivity

(c) Autoimmunity

(d) Immunogen.