



NCC-003-014202 Seat No. _____

M. Sc. (Botany / Zoology / Microbiology)
(Sem. II) (CBCS) (W.E.F. 2016) Examination

April / May - 2017

Biotechnology & Immunology : Zoo-208

Faculty Code : 003

Subject Code : 014202

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

[Total Marks : 70

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

- (a) What antigen? Give examples.
- (b) Define genetic engineering.
- (c) Define antibody.
- (d) What are cosmids and phages ?
- (e) What are Sandwich ELISA ?
- (f) Define Opsonization.
- (g) Define monoclonal antibodies.
- (h) What is hypersensitivity ?
- (i) Enlist various methods of enzyme immobilization.
- (j) Define immunofluorescence.

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

- (a) Write a note on restriction enzymes and gene targeting.
- (b) Discuss the bacterial characteristics useful for their commercial applications.
- (c) Briefly describe the embryo transfer technique in animal husbandry.

3 Answer the following: **7+7=14**

- (a) Write a short note on the basic structure of antibody.
- (b) Briefly describe the application of immobilized enzymes and cells.

OR

3 Answer the following: **7+7=14**

- (a) Write a note on the types of plant tissue culture. Add a note on their uses.
- (b) Write a short note on monoclonal antibody.

4 Answer the following : **7+7=14**

- (a) Write the principles and techniques of animal cell culture.
- (b) Write a note on the autoimmunity.

5 Answer the following : (any two) **7+7=14**

- (a) Write a note on the immediate hypersensitivity.
- (b) Briefly describe the ELISA test.
- (c) Give a brief account on the scopes of genetic engineering.
- (d) Write a note on the T-cell receptors.
