



NCC-003-1182002 Seat No. _____

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

April / May - 2017

Zoology : Zoo-208

(Biotechnology & Immunology)

Faculty Code : 003

Subject Code : 1182002

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

[Total Marks : 70

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

- (a) What are recalcitrant compounds ?
- (b) Define genetic engineering.
- (c) List out steps involved in hybridoma formation.
- (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 of the following : (any two) **7+7=14**

- (a) Discuss the bacterial characteristics useful for their commercial applications.
- (b) Write a note on restriction enzymes and gene targeting.
- (c) Briefly describe the basic steps of plant tissue culture.

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

- (a) Write a note on basic structure of antibody and highlight antibody mediated effector functions.
- (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.
- (b) Write a note on agglutination and precipitation of an antigen-antibody reaction.

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

- (a) Write the principles and techniques of animal tissue culture.
- (b) Write a note on the cells of the immune system.

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

- (a) Write a note on the delayed hypersensitivity.
- (b) Briefly describe the advantages of immobilized cells over enzymes in commercial biotransformations.
- (c) Give a brief account on Innate Immune System.
- (d) Write a note on the host vector system.
