



**DHH-003-018202**

Seat No. \_\_\_\_\_

**M. Sc. (Sem. II) (Zoo.) (CBCS) Examination**

**May / June – 2015**

**Biotechnology & Immunology**

*(New Course)*

**Faculty Code : 003**

**Subject Code : 018202**

Time : Hours]

[Total Marks : 70

**Instruction: All questions are compulsory and carry equal marks.**

Q: 1 Explain **any seven** of the followings: (14)

- a. Explain the basic principle of Gram staining of microorganisms
- b. List the methods for protein immobilization
- c. Write applications of microorganisms in agriculture
- d. Explain gene targeting
- e. Define vectors
- f. Distinguish between mother plant and explant
- g. Write basic composition of plant tissue media
- h. Distinguish between antibody and vaccines
- i. What is adjuvant? Explain.
- j. Define autoimmunity

Q:2 Answer any **two** of the following: (14)

- a. Write industrial application of microbes
- b. Write techniques for single cell immobilization
- c. Explain general characteristic of microorganisms

Q:3 Answer the following: (14)

- a. Explain role of restriction enzymes in biotechnology
- b. What criteria need to be considered for vector selection for gene cloning?

**OR**

Q:3 Write notes on the following:

- a. Blot techniques
- b. DNA isolation

Q:4. Answer the followings: (14)

- a. What is callus? What are the major steps for callus induction? Add your note on its application.
- b. Write notes on antibiotic production

Q:5 Write notes on any two:

(14)

- a. ELISA Technique
  - b. Structure and function of immune globulins
  - c. Monoclonal antibody
  - d. Innate immunity
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