



NBW-003-014403 Seat No. _____

M. Sc. (Sem. IV) (CBCS) Examination

April / May - 2017

Botany : B - 421

(Plant Biotechnology & Genetic Engineering) (Elective)

Faculty Code : 003

Subject Code : 014403

Time : Hours]

[Total Marks : 70

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

- a. What is probe ? What is its importance in biotechnology ?
- b. What are key feature of Ti plasmid ?
- c. Why DNA purity is important for PCR and other applications ?
- d. What are the contaminants in isolated DNA from plants ?
- e. Why ammonium sulphate is a popular choice for salting out than other techniques ?
- f. How will you remove RNA contamination from the isolated DNA ?
- g. What is the confirmation test for the DNA purity ?
- h. Write the name of anion and cation exchangers.
- i. Describe different methods of protein purification.
- j. Write the principle of Affinity chromatography.

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

- a) Describe various applications of gene cloning in agriculture.
- b) Enumerate the importance of antisense RNA technology in molecular breeding of plants.
- c) Describe various screening techniques used for GMO.

- 3 a) Describe briefly Random Amplified Polymorphic DNA markers and its Applications. $2 \times 7 = 14$
b) Describe Restriction Fragment Length Polymorphism and its applications. Add a note on its disadvantage.

OR

- 3 a) Describe Microarray and its application. $2 \times 7 = 14$
b) What is AFLP ? Briefly describe its principle and application.

- 4 Briefly describe : $2 \times 7 = 14$
(a) Protein Purification by Ion-Exchange Chromatography.
(b) Isoelectric Focusing.

- 5 Write short notes on any two of the following : $2 \times 7 = 14$
(a) Radioimmunoassay
(b) Plantibody
(c) Biological control of pests
(d) ELISA techniques.