NTK/KW/15–7954

Sixth Semester B. Tech. (Biotechnology) (CBS) Examination

GENETIC ENGINEERING

BT BIT 601 (T)

Time : Three Hours] [Max. Marks : 80

N. B. : (1) All questions carry equal marks.
(2) Answer any **Five** questions.
(3) Illustrate your answers wherever necessary with the help of neat sketches.

1. (a) Explain the alkaline phosphatase and polynucleotide kinase as modification enzymes. 8

   (b) Describe the steps involved in development of DNA marker. 8

2. Explain the following terms in reference with r–DNA technology :—

   (a) Restriction enzymes.

   (b) Plasmid as a vector.

   (c) Selectable marker.

   (d) Host cell selection. 16

3. (a) Write any two best method used Widely for gene cloning. 8

   (b) Corelate the T–DNA and transgenic plants. 8

4. (a) Describe the oligonucleotide synthesis and its use in site directed mutagenesis. 8

   (b) What is protein engineering ? Explain the role of mutation in protein engineering. 8

5. (a) Explain the detail procedure of purification of recombinant proteins. 8

   (b) Justify the intellectual property rights are advantageous. 8

6. Discuss the role of genetically engineered micro – organisms in the following fields :—

   (a) Therapeutic protein production.

   (b) Designing new routes to the production of small molecules.

   (c) Plant growth promotion.

   (d) Environmental cleanup. 16

7. Explain the following :—

   (a) Restriction enzymes are used in marker identification, r – DNA technology and gene cloning.

   (b) Draw a labeled diagram of cDNA library construction. 16

8. Describe the various public concerns related to applications of transgenic plants and animals. 16