Registration No. : | | | | | | | | | | |

Total number of printed pages – 2

B. Tech

PCBT 4302

Fifth Semester Regular Examination – 2014

GENETIC ENGINEERING AND R-DNA TECHNOLOGY

BRANCH : BIOTECH

QUESTION CODE : H 160

Full Marks – 70

Time : 3 Hours

*Answer Question No. **1** which is compulsory and any **five** from the rest.*
The figures in the right-hand margin indicate marks.

1. Answer the following questions : 2×10

(a) What is MCS and Linker ?

(b) What is reporter gene ?

(c) Which technique used to detect proten-protein interaction ?

(d) Use the following information to answer the question :

1. Uracil bonds with adenine.
2. Complementary bonding between codon and anticodon.
3. DNA unzips.
4. mRNA joins with ribosome.

Arrange in correct order.

(e) Differentiate between siRNA and miRNA.

(f) What are SCAR and ESTs ?

(g) Differentiate between cosmid and phasemids.

(h) What do mean by site-directed mutagenesis ?

(i) What is two-hybrid system ?

(j) What are QTLs ?

P.T.O.

2. Explain all types enzymes involved in gene cloning in addition restriction enzymes. Discuss important features of restriction enzyme II. 10

3. (a) What are expression vectors ? Explain with example. 5

   (b) Describe briefly steps in Polymerase Chain reaction. 5

4. (a) What is RNA interference ? Briefly explain the mechanism. 5

   (b) Describe briefly western blotting technique and its applications. 5

5. (a) Explain and differentiate DNA Fingerprinting and DNA Foot-printing. 5

   (b) What is cDNA library ? Explain different methods of preparing cDNA. 5

6. (a) What are molecular markers ? Describe any two principles and methodology of determination. 5

   (b) Describe briefly DNA micro array techniques and its applications. 5

7. (a) Explain briefly the mechanism and advantage of chain termination method of DNA sequencing. 5

   (b) What is human Genome Project ? Explain the distinguishing features. 5

8. Write short notes on the followings : 5 × 2

   (a) Gene knock-out

   (b) Ribozyme Technology