

Registration No. :

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Total number of printed pages – 2

B. Tech
PCBT 4302

Fifth Semester Regular Examination – 2014
GENETIC ENGINEERING AND R-DNA TECHNOLOGY

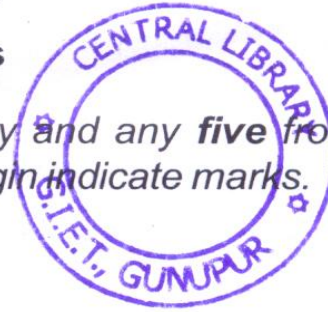
BRANCH : BIOTECH

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 protein-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 phagemids.
- (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

