Registration No. :

Fifth Semester Back Examination – 2014
GENETIC ENGINEERING AND R-DNA TECHNOLOGY
BRANCH : BIOTECH
QUESTION CODE : L244

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. Answers the following questions :   2 ×10

    (a)   What is Dot and Slot ?

    (b)   Write the principle of Polymerase Chain reaction.

    (c)   Differentiate between BAC and YAC.

    (d)   Differentiate between plasmid and Cosmid.

    (e)   Write the application of restriction endonuclease.

    (f)   What is a expression vector ? Give example.

    (g)   What are the different DNA sequencing techniques ?

    (h)   What is RNA interference ?

    (i)   What do you understand by gene silencing ?

    (j)   What are linker, adapter and MCS ?

2. What are the different types of Blotting techniques ? Explain the principle and methodology of Southern blotting.   10

3. What do you mean by molecular markers ? What are the different types of molecular markers ? Write a note on RAPD technique.   10

4. Differentiate between :   5+5

    (a)   RFLP and AFLP

    (b)   DNA fingerprinting and DNA foot printing.

5. (a) Write a note on Gene cloning vectors.   5

    (b) Write a note on Site directed mutagenesis.   5

6. (a) What is Gene knock out ? What are the different types of strategies employed for Gene knock out ?   5

    (b) Write a note on DNA micro arrays.   5

7. (a) Applications of Gene therapy.   5

    (b) Application of molecular markers in diagnostics.   5

8. Write short notes on any **two** : 5×2

    (a) Human genome project

    (b) Cloning of QTLs

    (c) DNA vaccines

    (d) Safety guidelines of Genetic engineering.