PG Odd Semester (CBCS) Exam., December—2017

BIOTECHNOLOGY

(3rd Semester)

Course No. : BTYCC–302

(Fundamentals of Genetic Engineering)

Full Marks : 70
Pass Marks : 28

Time : 3 hours

The figures in the margin indicate full marks for the questions

1. What are restriction enzymes? Discuss different types of restriction enzyme. Write a note on the applications of restriction enzymes in genetic engineering. 2+6+6=14

OR

2. Define gene cloning. Discuss various steps of gene cloning. 2+12=14

3. What are plasmids. Discuss how a gene of interest can be cloned in pBR322 plasmid with suitable diagram. Write a note on the advantages of pBR322 plasmid. 2+8+4=14

OR

4. Discuss the characteristics of plasmids required in gene cloning experiments. Add a note on cosmids. 10+4=14

5. Write the process of Southern blotting. Highlight the utility of Southern blotting technique. What are the precautions necessary for performing Southern blotting technique? 9+3+2=14

OR

6. What is DNA sequencing? Write the procedure involved in different types of DNA sequencing. 2+12=14

7. What do you mean by expression system? Write a note on any eukaryotic expression system with suitable example. 4+10=14

OR

8. Write short notes on the following : 7+7=14

(a) Expression vectors in bacteria and their limitations

(b) Utility of chimeric constructs in recombinant protein production

9. What is microarray? Discuss different types of microarray. Describe different approaches followed in the study of functional genomics.

3+3+8=14

OR

10. Write short notes on the following : 7+7=14

(a) SAGE

(b) DNA chip

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