PG Odd Semester Examination, 2022

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. Write a note on DNA modifying enzymes and restriction enzymes commonly used in genetic engineering. 14

Or

2. What is gene cloning? Describe the various steps of gene cloning. Discuss the properties of a plasmid for gene cloning. 2+7+5=14

3. What is lambda phage? Illustrate how lambda phage can be used as a vactor for gene transfer in E.coli. 2+12=14

Or

4. Deine cosmid and its features. Illustrate the technique of gene cloning using a cosmid vector. 4+10=14

5. Define transformation. Explain the methods of screening of transformant with special reference to blue white screening. 2+12=14

Or

6. Describe the techniques of blotting with special reference to western blotting. 14

7. Define fine structure of gene and gene expression systems. Explain the expression vectors with examples. 7+7=14

Or

8. Write short notes on : 3½x4=14

   (i) Expression vector in bacteria

   (ii) Chimeric construct

   (iii) Induced expression

   (iv) Expression of industrially important products

9. What is the principle of microarray? What are the functions and the advantages of microarray? Write a note on the applications of microarray. 4+6+4=14

Or

10. Discuss the difference between genomics and functional genomics. Write a note on the salient features of functional genomics of human.7+7=14

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