PG Even Semester Exam, 2024

Biotechnology

2nd Semester

COURSE NO. BTYIDC - 554

[Fundamentals of Biotechnology]

Full Marks : 70
Pass Marks : 28

Time : 3 hours

The figures in the margin indicate full marks for the questions

Answer five questions, taking one from each Unit

UNIT-I

1. What is cell-cell interaction? Discuss the different types of junctions between cells and their roles in maintaining cell-cell interaction. 2+12=14
2. Discuss the procedure involved in starting and maintaining animal cell culture. 14

UNIT-II

3. Describe the process of horizontal gene transfer in bacteria. Add a short note on carbohydrate metabolism in bacteria through glycolysis. 7+7=14
4. a. Explain antiviral agents and their mechanisms of action. 7
   b. Differentiate between processing and presentation of exogenous and endogenous antigens. 7

UNIT-III

5. Write short notes on; 3.5x4=14
   a. Next generation sequencing (NGS)
   b MicroRNA
   c. DNA melting and buoyant density
   d. Satellite DNA
6. a. Explain the replication of telomeres. 7
   b. Write a note on DNA repair. 7

UNIT-IV

7. What is linkage? Explain different types of linkage with suitable diagrams. Write a note on advantages and disadvantages of linkage with suitable examples. 2+6+6=14
8. Write short notes on : 7+7=14
   a. Chemical mutagens
   b. Multiple, alleles and their characteristics

UNIT-V

9. What are type II restriction endonucleases? Describe the importance of type II restriction endonucleases in recombinant DNA technology. 14
10. What is a plasmid? Describe the features and use of plasmid PBR322 as a cloning vector. 14

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2024/SEM/EVEN/08/28/BTY-554/312

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