

558290

DCBT501

Reg. No.

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V Semester B.Sc. Degree Examination, February/March - 2024

BIOTECHNOLOGY

Genetic Engineering

(NEP Scheme Freshers 2023-2024 Onwards)

Paper : V



Time : 2½ Hours

Maximum Marks : 60

**Instructions to Candidates:**

1. All parts are compulsory.
2. Draw neat labelled diagrams.

**PART - A****I. Write short notes on any Four of the following.****(4×2=8)**

1. Plasmid.
2. SDS.
3. DNA ligase.
4. PET scan.
5. Industrial enzymes.
6. Therapeutics.

**PART - B****II. Answer any Four of the following.****(4×5=20)**

7. What are restriction endonucleases? Briefly write its types. **(2+3)**
8. Explain the procedure and applications of transformation in gene manipulation techniques. **(2.5+2.5)**
9. Describe PUC19 vector, its advantages and application. **(3+2)**
10. Define gene therapy. Write its role in treating genetic disorder. **(2+3)**
11. Write short notes on :
  - a) Genome editing.
  - b) Biopharmaceuticals. **(2.5+2.5)**
12. What is syphilis? Give a brief note on its diagnostic technique RPR. **(2+3)**

**[P.T.O.]**



III. Answer any **Four** of the following.

(4×8=32)

13. What is hybridization technique? Explain in details northern blotting. (2+6)
  14. Write notes on :
    - a) YAC.
    - b)  $\lambda$  Phage vector. (4+4)
  15. Explain the following :
    - a) Electroporation.
    - b) Transfection. (4+4)
  16. Explain biofuel production. Briefly write about its application. (5+3)
  17. What are molecular diagnostic techniques. Explain WIDAC and monoclonal antibodies. (2+3+3)
  18. Describe DNA fingerprinting with schematic diagram. Mention its various application in forensics. (5+3)
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