K25U 2311

Reg. No. : .....

Name : .....

V Semester B.Sc. Degree (C.B.C.S.S. – O.B.E. – Regular/Supplementary/ Improvement) Examination, November 2025
(2019 to 2023 Admissions)
CORE COURSE IN BIOTECHNOLOGY
5B09BTC : Genetic Engineering

Time : 3 Hours Max. Marks : 40

PART – A

Write short notes on **each** of the following in **2** or **3** sentences. **Each** question carries **1** mark. **(6×1=6)**

1. Cosmid vector
2. DNA ligase
3. Taq polymerase
4. Blue-white screening
5. DNA denaturation
6. Transgenic animals.

PART – B

Write notes on **any 6** of the following. **Each** question carries **2** marks. **(6×2=12)**

7. Write short note on shuttle vectors.
8. Types of PCR .
9. Calcium Chloride method for transformation.
10. Short note on Southern blotting.
11. Short notes on restriction enzymes.
12. Production of recombinant insulin.
13. Recombinant vaccines and their uses.
14. Short note on M13 phage vectors.

P.T.O.

PART – C

Write short essay on **any four** of the following. **Each** question carries **3** marks. **(4×3=12)**

15. Briefly explain alkaline lysis method for plasmid extraction.
16. Explain construction of a genomic library.
17. Sanger sequencing.
18. Compare RT-PCR and qPCR.
19. Applications of rDNA in industrial microbiology.
20. Importance of DNA fingerprinting in forensics.

PART – D

Write essay on **any two** of the following. **Each** question carries **5** marks. **(2×5=10)**

21. Explain steps and uses of PCR.
22. Enzyme mechanisms in gene cloning.
23. Short note on human growth hormones.
24. Agrobacterium mediated gene transfer.

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