

Sixth Semester B.Sc. Degree Examination, April/May 2019

(CBCS Scheme)

Botany

**Paper VIII — MOLECULAR BIOLOGY, GENETIC ENGINEERING,
BIOINFORMATICS AND BIOTECHNOLOGY**

Time : 3 Hours]

[Max. Marks : 90

Instructions to Candidates :

- 1) *Answers all Parts.*
- 2) *Draw diagrams wherever necessary.*

PART – A

- I. Answer any **TEN** of the following : **(10 × 2 = 20)**
1. Mention the nucleotides of RNA.
 2. What is Chargoff's equivalence rule?
 3. What is Western blotting technique? Mention its significance.
 4. What are polysomes? Mention its function.
 5. What is DNA sequencing? Mention its significance.
 6. What is genetic RNA? Give an example.
 7. What is Bioremediation? Mention its significance.
 8. What is genomic Library? Mention its significance.
 9. What is pBR 322?
 10. What is gene therapy? Mention any two uses.
 11. What is Fermentation technology? Mention any two industrial applications.
 12. What is biological database? Mention its types.

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PART – B

II. Answer any **SIX** of the following :

(6 × 5 = 30)

13. Explain Hershey-Chase Experiment.
14. Explain the properties of genetic code.
15. Explain the structure and functions of t-RNA.
16. Explain PCR.
17. Describe the structure of pBR 322.
18. Explain Aims and scopes of Bioinformatics.
19. Explain the production of transgenic plant with reference to golden rice.
20. Explain primary and secondary treatment of waste water.

PART – C

III. Answer any **FOUR** of the following :

(4 × 10 = 40)

21. Explain DNA finger printing technique.
 22. Explain the mechanism of Biosynthesis of proteins.
 23. Explain Lac-Operon concept of gene regulation in Prokaryotes.
 24. Explain recombinant DNA technology.
 25. Explain production of Penicillin.
 26. Write a note on :
 - (a) Bioreactor
 - (b) NCBI
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