

D6BBT2202

Reg. No.....

Name:

SIXTH SEMESTER B.Sc. DEGREE EXAMINATION, APRIL 2025

(Regular/Improvement/Supplementary)

BOTANY

GBOT6B11T: BIOTECHNOLOGY, MOLECULAR BIOLOGY & BIOINFORMATICS

Time: 2 Hours

Maximum Marks: 60

**SECTION A: Answer the following questions. Each carries *two* marks.
(Ceiling 20 marks)**

1. Distinguish between repetitive DNA and satellite DNA.
2. Write an account on Clustal W.
3. Comment on regulation of operon.
4. What is RasMol?
5. What is polyadenylation of pre mRNA? Write its significance.
6. What is the difference between non-sense and mis-sense mutations?
7. What is INFLIBNET?
8. List any four advantages of liposome mediated gene transfer.
9. Enlist the goals of genome assembly.
10. List out major branches of artificial intelligence.
11. What is PHYLIP?
12. Illustrate pBR322.

**SECTION B: Answer the following questions. Each carries *five* marks.
(Ceiling 30 marks)**

13. Discuss the one cistron one polypeptide hypothesis.
14. Give an account on Human genome databases.
15. What are plasmids? How do they work as cloning vectors?
16. Describe the applications of biotechnology in the field of medicine.
17. State and explain the Sanger's method of DNA sequencing.
18. Explain the methods of constructing phylogenetic tree.
19. Describe the molecular mechanism of substitutional mutations.

SECTION C: Answer any *one* question. The question carries *ten* marks.

20. Describe different methods of gene transfer in plants.
21. Explain the Watson & Crick's Model of DNA double helix. Describe the molecular mechanism of DNA replication.

(1 x 10 = 10 Marks)