

SIXTH SEMESTER B.Sc. DEGREE EXAMINATION, APRIL 2023**(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. What is a probe?
2. What is golden rice?
3. Mention the application of M13 cloning vector.
4. Comment on MCS.
5. Define a muton.
6. State Chargaff's rule.
7. Why DNA replication is semi conservative?
8. What is INFLIBNET?
9. Write an account on molecular docking.
10. What is 5' capping in mRNA processing?
11. Give a description on BLAST and its use.
12. What is a scaffold?

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

13. Comment on the application of rDNA technology in the field of agriculture.
14. Briefly describe the alternate forms of DNA.
15. Describe Sanger's DNA sequencing procedure.
16. Explain the mutagen types and their mechanism of action.
17. What are the major findings of Human genome Project?
18. Describe the features and the selection strategy used in pBR 322.
19. Briefly describe the various nucleotide databases.

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

20. Describe the structure and regulation of trp operon.
21. Explain the various methods of gene transfer.

(1 × 10 = 10 Marks)