

SIXTH SEMESTER B.Sc. DEGREE EXAMINATION, APRIL 2026

(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. State the application of M13 phage vector.
2. What is EMBL?
3. What is attenuation in trp operon?
4. Comment on wobble hypothesis.
5. What are okazaki fragments?
6. Genetic code is unambiguous. What does it mean?
7. What is insertional inactivation?
8. What is the purpose of selection marker genes in a vector?
9. What is PEG? Mention its application in plant transformation.
10. What is CADD?
11. What is scaffold in genome sequencing?
12. What are paraphyletic groups?

SECTION B: Answer the following questions. Each carries *five* marks.

(Ceiling 30 marks)

13. Discuss any two applications of rDNA technology in the field of Agriculture.
14. Write a note on sequence alignment tools in Bioinformatics.
15. Describe the role of enzymes in each step of DNA replication.
16. Briefly describe post transcriptional modification of RNA.
17. Give an account on the functions of INFLIBNET.
18. What are the major findings of Human Genome Project?
19. Describe DNA fingerprinting.

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

20. Describe the method of PCR. What are its applications?
21. Explain operon concept and gene regulation in prokaryotes.

(1 × 10 = 10 Marks)