Reg. No ..... Name **26U645**

B. Sc. DEGREE END SEMESTER EXAMINATION - MARCH 2026

SEMESTER 6 : BOTANY

COURSE : **19U6CRBOT11 : BIOTECHNOLOGY AND BIOINFORMATICS**

(For Regular 2023 Admission and Supplementary 2022/ 2021 /2020 /2019 Admissions)

Time : Three Hours Max. Marks: 60

PART A

Answer all (1 mark each)

1. What is bioremediation?
2. Name the polymerase used in PCR technique.
3. What is Biowar?
4. What is a restriction enzyme?
5. What is FASTA?
6. How is an explant sterilized in plant tissue culture?
7. Define cell culture.
8. Give an account on plasmids.

(1 x 8 = 8)

PART B

Answer any 6 (2 marks each)

9. What is Species 2000?
10. State two applications of microaray.
11. What is meant by DNA sequencing? Give an example for the sequencing method.
12. Differentiate somatic stem cells and embryonic stem cells.
13. Write a brief account on Molecular phylogeny.
14. Differentiate between pair wise and multiple sequence alignment.
15. Which are the key features required for a DNA polymerase for polymerase chain reaction?
16. Give an account on microprojectile.
17. Give an account on M.S Medium.
18. Differentiate anther culture and pollen culture.

(2 x 6 = 12)

PART C

Answer any 4 (5 marks each)

19. Give an account on CADD.
20. Give the scope and relevance of Bioinformatics.
21. Give an account of various enzymes used in rDNA technology.
22. How can DNA sequencing be done? What are its applications?
23. What are the potential advantages of *in vitro* conservation of plant germplasm?
24. Give an account on recombinant vaccines. How they differ from normal vaccines?

(5 x 4 = 20)

PART D

Answer any 2 (10 marks each)

25. Write an essay on Protein sequencing with special reference to Edman degradation method.
26. What are restriction enzymes? Give an account on its nomenclature and functions. Breifly explain the action of one restriction enzyme.
27. What is biological database? Describe the different biological databases and mention their important features giving examples.
28. What is cellular totipotency? How is this helpful in plant tissue culture technique?

(10 x 2 = 20)