Reg. No ....   Name **24U641**

B. Sc. DEGREE END SEMESTER EXAMINATION - MARCH 2024
SEMESTER 6 - BOTANY
COURSE : **19U6CRBOT11 - BIOTECHNOLOGY AND BIOINFORMATICS**
(For Regular 2021 Admission and Supplementary 2020/2019 Admissions)

Time : Three Hours   Max. Marks: 60

PART A
Answer All (1 mark each)

1. Polymerase chain reaction is carried out in which machine?
2. What is proteome?
3. Name the enzymes used in DNA technology.
4. Define cell culture.
5. What are stem cells?
6. What is BAC?
7. What is patenting?
8. Define androgenesis.

(1 x 8 = 8)

PART B
Answer any 6 (2 marks each)

9. How does autoclave bring about effective sterilization?
10. Differentiate between transcriptome and proteome.
11. Write a brief account on Molecular phylogeny.
12. Differentiate between phytoremediation and bioremediation.
13. What is genetic profiling?
14. Mention the role of selectable markers in rDNA technology.
15. Explain electroporation.
16. Write a note on Protein sequencing.
17. What is Agar? Mention its role in plant tissue culture.
18. Differentiate between pair wise and multiple sequence alignment.

(2 x 6 = 12)

PART C
Answer any 4 (5 marks each)

19. State the importance of humulin. How it is produced?
20. What are the different steps involved in PCR? Which are the different types of PCR?
21. What are the applications of bioinformatics?
22. Write down the major findings of Arabidopsis thaliana genome project.
23. Write an essay on Molecular docking.
24. What is somatic embryogenesis? Explain the process by which they are developed.

(5 x 4 = 20)

PART D
Answer any 2 (10 marks each)

25. What is a vector? How are they useful in rDNA technology? Enumerate the various vectors commonly used and their special characters.

26. What is biological database? Describe the different biological databases and mention their important features giving examples.

27. Explain Edman's degradation method for protein sequencing.

28. Describe the method and discuss the importance and implication of pollen culture.

(10 x 2 = 20)