

**B. Sc. DEGREE END SEMESTER EXAMINATION : MARCH 2023****SEMESTER 6 : BOTANY****COURSE : 19U6CRBOT11: BIOTECHNOLOGY AND BIOINFORMATICS***(For Regular - 2020 Admission and Supplementary - 2019 Admission)*

Time : Three Hours

Max. Marks: 60

**PART A****Answer All (1 mark each)**

1. Explain organ culture.
2. What is an explant?
3. What is the function of DNA ligases?
4. Give an account on plasmids.
5. Expand YAC.
6. What do you mean by germline therapy?
7. What is meant by patenting?
8. Expand PDB.

**(1 x 8 = 8)****PART B****Answer any 6 (2 marks each)**

9. What is Agar? Mention its role in plant tissue culture.
10. Classify plant tissue culture based on types of explants used.
11. What is a gene library?
12. Give an account on microprojectile.
13. Differentiate phytoremediation and bioremediation.
14. Differentiate somatic stem cells and embryonic stem cells.
15. Explain pairwise alignment.
16. Write a note on Rasmol.
17. How can we do the automation of protein sequence?
18. What is meant by Molecular docking?

**(2 x 6 = 12)****PART C****Answer any 4 (5 marks each)**

19. Briefly explain how anther and pollen culture be used for plant breeding and crop improvement.
20. Explain the technique of PCR. State two applications of PCR.
21. Give an account on the growth hormones produced by genetic engineering.
22. Give the scope and relevance of Bioinformatics.
23. Explain automation of sanger's DNA sequencing.
24. Write a short essay on CADD.

**(5 x 4 = 20)**

**PART D**  
**Answer any 2 (10 marks each)**

25. Write a note on mechanism causing somaclonal variations and its isolation and selection methods.
26. Explain the process of rDNA technology. Give an account on various steps involved.
27. State the aspects of biotechnology in animal cloning.
28. Give a detailed account on different Molecular sequence database.

**(10 x 2 = 20)**