15/01/25 A.N

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Reg. No. : .....

Name : .....

Fifth Semester B.Sc. Degree Examination, December 2024

Career Related First Degree Programme under CBCSS

Botany & Biotechnology

Vocational Course

BB 1571 : RECOMBINANT DNA TECHNOLOGY

(2019 Admission Onwards)

Time : 3 Hours Max. Marks : 80

SECTION – A

Answer **all** the questions in a **word** or **one** or **two** sentences. Each question carries **1** mark.

1. Define phagemids.
2. Name the consortium involved in the Human Genome Project.
3. What is the full form of the acronym RAPD?
4. Mention the reagent used to cleave the phosphodiester bond in chemical method of sequencing.
5. Provide examples of restriction endonucleases.
6. Define a probe.
7. What are terminal deoxy nucleotidyl transferase used for?
8. Define transformation.

P.T.O.

9. What is the speciality of M13 vector?

10. Define microarray.

(10 × 1 = 10 Marks)

SECTION – B

Answer any **eight** questions. Each question carries **2** marks. Answer not to exceed **one** paragraph.

11. What is reverse transcriptase?

12. Define expression vectors.

13. What are reporter genes?

14. Briefly explain multiplex PCR.

15. What are artificial chromosomes? Provide examples.

16. Discuss on southern hybridization.

17. Comment on polynucleotide kinase and its applications.

18. Why are multiple cloning sites needed in vectors?

19. Define shuttle vectors.

20. What is meant by biolistics?

21. Mention the advantages of molecular markers over morphological markers.

22. How are targeted proteins identified using immunoblotting?

(8 × 2 = 16 Marks)

SECTION – C

Answer any **six** questions. Each question carries **4** marks. Answer not to exceed **120** words.

23. Write a short note on enzymes used in recombinant DNA technology.

24. Explain the different methods of DNA sequencing.

25. What is agrobacterium mediated gene transfer?

26. Explain the different types of PCR.

27. Discuss the human genome project.

28. Write a short note on plasmids.

29. Explain the main steps of recombinant DNA technology.

30. Write a short note on Real Time - PCR.

31. Explain the direct methods for gene transfer.

(6 × 4 = 24 Marks)

SECTION – D

Answer any **two** questions. Each question carries **15** marks. Answer not to exceed **3** pages.

32. Discuss transgenic organisms. Give examples.

33. Discuss the principle and applications of DNA libraries.

34. Write an essay on molecular markers. Give note on types and uses.

35. What are vectors? Explain the different types of vectors.

(2 × 15 = 30 Marks)
