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M – 1801

Reg. No. : .....

Name : .....

**Fifth Semester B.Sc. Degree Examination, December 2021**

**Career Related First Degree Programme under CBCSS**

**Group 2(a) — Botany and Biotechnology**

**BB 1571 : RECOMBINANT DNA TECHNOLOGY**

**(2018 Admission)**

Time : 3 Hours

Max. Marks : 80

**SECTION – A**

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

1. What is the difference between Type I and Type II restriction endonuclease?
2. What is the function of exonuclease?
3. Define vector?
4. What does 322 mean in pBR 322?
5. What are the two types of gene therapy?
6. What is particle bombardment gene transfer?
7. Who discovered DNA barcoding?
8. What is AFLP?

P.T.O.

9. What is RT-PCR?

10. What is Bt cotton?

(10 × 1 = 10 Marks)

#### SECTION – B

Answer any **eight** questions. Each question carries 2 marks.

11. Mention two important uses of recombinant DNA technology in protein therapy.

12. What bond do restriction endonuclease break and how?

13. What is the application of Yeast artificial chromosome?

14. What is Electroporation?

15. What are the uses of northern blotting?

16. Mention two uses of gene cloning.

17. What are the principles of bioethics?

18. Why is human genome project important?

19. What is the technology behind biochip?

20. What is the difference between cloning vector and expression vector?

21. What is biosafety?

22. Why Gold particles are used in gene gun?

23. What is the use of DNA microarray?

24. What is mean by PCR annealing temperature.

25. What is helper Phage?

26. Differentiate selectable marker from scorable marker.

(8 × 2 = 16 Marks)



### SECTION – C

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

27. Describe PEG mediated transformation.
28. Enumerate the steps involved in DNA bar coding.
29. Distinguish between plasmid and cosmid.
30. How is cDNA library construction done?
31. What is immunoblotting? Mention its application.
32. Write a brief account on BAC.
33. Write a note on AFLP.
34. Write a short account competent cell preparation by calcium chloride.
35. How is recombinant DNA technology useful?
36. What are the different Polymerase chain reaction types?
37. What are the advantages of microinjection?
38. Write an account on DNA Ligase.

(6 × 4 = 24 Marks)

### SECTION – D

Answer any **two** questions. **Each** question carries **15** marks. (Answer not to exceed **three** pages)

39. Write a detailed account on pUC series of cloning vectors.
40. Describe the Sangers method of nucleic acid sequencing.

41. Give an account on the tools and techniques employed in rDNA technology.
42. Discuss on the-various aspects of transgenic organisms and its uses.
43. Write on what you know about YAC other than its applications.
44. Write an account on cDNA library other than its construction details.

(2 × 15 = 30 Marks)

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