

S.No. 3098

16 SCCBT 3

(For candidates admitted from 2016–2021 Batch)

B.Sc. DEGREE EXAMINATION, NOVEMBER 2023.

Part III – Biotechnology — Major

rDNA TECHNOLOGY

Time : Three hours

Maximum : 75 marks

PART A — (10 × 2 = 20)

Answer ALL the questions.

1. Define Restriction endonuclease with examples.
2. Define genome and its function.
3. Narrate the ORI and recognition sites in vectors.
4. Write about the cloning vectors with examples.
5. Explain DNA fingerprinting.
6. Expand RFLP and RAPD.
7. What is GUS expression?
8. Enumerate the application of DNA sequencing.

9. Define Gene therapy in health problems.
10. Explain hepatocytes.

PART B — ($5 \times 5 = 25$)

Answer ALL questions, Choosing either (a) or (b).

11. (a) Give a short note on various steps involved in rDNA technology.

Or

- (b) Write a detailed account on enzymes of rDNA technology.

12. (a) Comment on BAC vectors with suitable diagram.

Or

- (b) Explain in detail about plasmid vector with suitable diagram.

13. (a) Discuss the methods of transformation in cloning vectors.

Or

- (b) Discuss about the cloning vectors for Eukaryotes with examples.

14. (a) Describe GUS expression system with suitable diagram.

Or

- (b) Describe the methods for selection and screening of recombinant transformants.

15. (a) Give a detailed account on biopharmaceuticals products.

Or

- (b) Comment on recombinant insulin production.

PART C — ($3 \times 10 = 30$)

Answer any THREE questions.

16. Give a detailed account on various steps involved in rDNA technology.

17. Discuss in detail about the viral vectors in gene therapy with suitable diagram.

18. Provide a detailed note on construction of cDNA libraries.

19. Explain analysis of recombinant DNA and gene sequencing.

20. Give a detailed account on Biopharmaceuticals and secondary metabolite production.