

S.No. 5082

16 SCCBT 2

(For candidates admitted from 2016–2017 onwards)

B.Sc. DEGREE EXAMINATION, APRIL 2022

Part III – Biotechnology – Major

rDNA TECHNOLOGY

Time : Three hours

Maximum : 75 marks

PART A — (10 × 2 = 20)

Answer ALL questions.

1. Mention the function of DNA polymerase.
2. Mention the function of kinase and DNA polymerase.
3. Define Restriction endonuclease with examples.
4. Write the components of plasmid vectors.
5. Narrate the ORI and recognition sites in vectors.
6. What is recombinant selection?
7. Explain DNA fingerprinting.
8. Mention the uses of recombinant DNA.

9. What is GUS expression?

10. Define GMO's.

PART B — ($5 \times 5 = 25$)

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

11. (a) Give detailed note on restriction endonucleases.

Or

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

12. (a) Comment on shuttle and expression vectors with examples.

Or

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

13. (a) Give an account of construction of cDNA library.

Or

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

14. (a) What is site directed mutagenesis?

Or

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

15. (a) Give a detailed account on developing stress tolerant transgenic plant.

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 Polymerase Chain Reaction and application of PCR.

19. Explain analysis of recombinant DNA and gene sequencing.

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