

**M. Sc. DEGREE EXAMINATION, APRIL 2018**  
**BIOTECHNOLOGY**  
**SECOND SEMESTER**

**COURSE : CORE**  
**PAPER : RECOMBINANT DNA TECHNOLOGY**  
**TIME : 3 HOURS**

**MAX. MARKS: 100**

**SECTION – A**

**ANSWER ALL THE QUESTIONS**

**(20 x 1 = 20)**

1. Define cloning
2. Give the properties of S1 Nuclease.
3. What do you mean by Transgene ?
4. Explain the enzyme Reverse transcriptase
5. What is a Vector ?
6. What is Plasmid incompatibility ?
7. Explain the significance of Shuttle vectors ?
8. What are Linker molecules ?
9. Write the properties of Expression vector.
10. How are cDNA prepared ?
11. Write about Site-directed mutagenesis.
12. Give the importance of *Pichia* sp.
13. Define DNA probe
14. Expand STS
15. Explain VNTR
16. Why are Physical Maps important ?
17. Give the purpose of HBsAg.
18. Explain the importance of GMOs in cloning.
19. Brief on the Neoplastic disorders.
20. What are Super bugs ?

**SECTION – B**

**ANSWER ANY FOUR QUESTIONS IN ABOUT 600 WORDS**

**(4x 10 = 40)**

21. Write short notes on the different enzymes used in rDNA technology.
22. Give a short account on lambda vectors and its derivatives.
23. Chart out the methodology involved in the expression of foreign DNA in bacteria.
24. Give a brief account on the various types of artificial chromosomes and their applications.
25. Write short notes on chromosome walking.
26. Explain briefly on any four types of molecular markers and their applications.
27. Discuss briefly the GMOs used in industry.

**SECTION – C**

**ANSWER ANY TWO QUESTIONS IN ABOUT 1500 WORDS**

**(2x 20 = 40)**

28. Give a detailed account on the properties, copy number and types of plasmid vectors with suitable examples.
29. Explain the principle behind construction of genomic and cDNA libraries.
30. Write in detail on the principle, types and applications of PCR.
31. Discuss the different applications of rDNA technology in healthcare and medicine.

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