

**M. Sc. DEGREE EXAMINATION, APRIL 2019**  
**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. List the types of restriction enzymes.
2. List any two properties of plasmids.
3. List at least three artificial vectors.
4. What are the steps in PCR.
5. List any two monoclonal antibodies in market.
6. List two properties of DNA ligase.
7. List any two features of a  $\lambda$  phage.
8. What is shot gun cloning?
9. List at least 5 types of DNA markers.
10. List any two uses of GM *Pseudomonas* sp.,
11. What type of a reaction does a phosphate enzyme catalyze?
12. List any three replicative polymerase seen in eukaryotes.
13. What is the main function of DNA Polymerase V?
14. What is meant by a copy number?
15. What is a marker gene?
16. What is primer walking and mention the use of this method.
17. How can you screen the clones with desired DNA inserts?
18. What are the components of an *E. coli* shuttle vector in yeast?
19. What is meant by linker/ adapter in Molecular Biology?
20. How a cassette mutagenesis is done?

**SECTION – B**

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

**(4x 10 = 40)**

21. How can you classify restriction enzymes?
22. What is the mode of action of reverse transcriptase enzyme?
23. How are plasmids classified and typed?
24. What are chimeric proteins? Explain how rDNA technology helps in the production of chimeric proteins.
25. What is a PCR? Mention the steps involved.
26. What is a recombinant vaccine? Mention the methods of production and uses of these vaccines.
27. Mention the uses of gene therapy in inherited disorders.

**SECTION – C**

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

**(2x 20 = 40)**

28. Explain in detail the structure, types and features of a vector.
29. How can you construct a cDNA library and mention the steps involved?
30. What is RFLP and mention its applications?
31. Mention the role of Biotechnology in pharmaceutical manufacturing industries.

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