

**D.K.M. COLLEGE FOR WOMEN (AUTONOMOUS), VELLORE – 1**  
**SEMESTER EXAMINATIONS**  
**NOVEMBER – 2018** **15CMB5D**  
**ELECTIVE I : RECOMBINANT DNA TECHNOLOGY**

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Time: 3 Hrs

Max. Marks: 75

**SECTION – A (10 X 2 =20)**

Answer ALL the questions.

1. Define the role of DNA ligase.
2. What bacteria does Taq polymerase come from?
3. What are cloning vectors?
4. Define Ti plasmid.
5. Why do we use gene cloning?
6. How many recombination systems are present in *E.coli*?
7. What is shot gun cloning?
8. What is the role of primers in PCR?
9. How recombinant DNA useful?
10. Why is gene therapy done?

**SECTION – B (5 X 5 =25)**

Answer any FIVE of the following questions.

11. Give an account on the uses of reverse transcriptase in recombinant DNA technology
12. Give a brief note on alkaline phosphatase enzyme.
13. How do plasmid vectors differ from phage vectors in their structure and utility?
14. Give a brief out line of viral vectors.
15. Discuss about lac Z complementation.
16. Describe the technique of southern blotting.
17. Describe briefly about M13 based vectors.
18. Write a short account on the applications of rDNA technology principles in medical sciences.

**SECTION – C (3 X 10 =30)**

Answer ALL the questions.

19. a) Explain the role of restriction endonuclease enzyme in rDNA technology.  
(Or)  
b) How can plant and animal viruses be used as vectors? Discuss using suitable examples.
20. a) Elaborate any one method used for the construction of genomic library and enlist vectors used in the construction.  
(Or)  
b) Describe the procedure of PCR and discuss its various applications in biology and list the advantages and limitations of this method.
21. a) Write an essay on colony hybridization technique.  
(Or)  
b) Discuss the role of rDNA technology in health care giving suitable examples to support your view.

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