

**T. Y. B. Sc. (Biotechnology) SEM – V (2010 COURSE) : WINTER -  
2018**

**SUBJECT: RECOMBINANT DNA TECHNOLOGY (RDT)**

Day: Wednesday  
Date: 24/10/2018

**W-2018-1198**

Time: 10.00 AM TO 01.00 PM  
Max Marks: 80

**N.B:**

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Answers to both the sections should be written in **SEPARATE** answer books.

**SECTION-I**

- Q.1** A) Answer **ANY ONE** of the following: **(06)**  
a) Discuss various types of enzymes used in DNA manipulation.  
b) Give an account on pUC18 plasmid as cloning vector.
- B) Answer **ANY TWO** of the following: **(10)**  
a) How the GC content affects action of restriction endonucleases?  
b) Discuss the role of linkers in blunt end ligation.  
c) Explain the process of plasmid purification.
- Q.2** Write short notes on **ANY FOUR** of the following: **(16)**  
a) Incompatibility of plasmid  
b) Recognition sequences  
c) Adaptors  
d) BAC  
e) Role of methylases

**SECTION-II**

- Q.3** A) Answer **ANY ONE** of the following: **(06)**  
a) What are competent cells? Explain the process of competent cell preparation.  
b) Write in brief the Sanger's method of DNA sequencing.
- B) Answer **ANY TWO** of the following: **(10)**  
a) What are recombinant vaccines? Explain with example.  
b) Write principle and applications of Southern Blotting technique.  
c) What are genomic libraries? How they are constructed?
- Q.4** Answer **ANY FOUR** of the following: **(16)**  
a) How transformants are selected using *spi* phenotype?  
b) Give an account on pulsed field gel electrophoresis.  
c) Discuss CAPture method of full length cDNA cloning  
d) Why *E. coli* is popular model for recombinant DNA technology?  
e) What is Gene therapy? Give its applications.
- Q.5** Write short notes on **ANY FOUR** of the following: **(16)**  
a) Transgenic plants  
b) Recombinant insulin  
c) *In vitro* packaging of Lambda DNA  
d) Northern blotting  
e) Real time quantitative PCR

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