

**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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