

**T. Y. B. SC. (BIOTECHNOLOGY) SEM – V (CBCS - 2015**

**COURSE) : SUMMER - 2018**

**SUBJECT: RECOMBINANT DNA TECHNOLOGY**

Day : **Wednesday**

Date : **04/04/2018**

Time: **10.00 am to 01.00 pm**

Max. Marks: 60

**S-2018-1060**

**N.B.:**

- 1) **Q.1 and Q.5** are compulsory.
- 2) Answer **ANY TWO** from Questions **2, 3 and 4** and from **6,7 and 8**.
- 3) Figures to right indicate **FULL** marks.
- 4) Answer the questions of Section I and II in **SEPARATE** answer books.

**SECTION - I**

- Q.1** Attempt **ANY FIVE** of the following: (10)
- a) What is nested PCR?
  - b) Mention the applications of Gel electrophoresis
  - c) Enlist various forms of plasmid
  - d) What are ideal characteristics of primer used in PCR?
  - e) What is CHEF electrophoresis?
  - f) What is RAPD?
- Q.2** Answer the following: (10)
- a) Explain with diagram Southern blotting technique
  - b) Explain the process of DNA ligation using Linkers and Adaptor
- Q.3** Explain the following: (10)
- a) Automated DNA sequencing
  - b) Mechanism of action of restriction endonuclease
- Q.4** Write short notes on (**ANY TWO**) (10)
- a) Real time quantitative PCR
  - b) Genome mapping by RFLP
  - c) DNA manipulative enzymes

**SECTION - II**

- Q.5** Attempt **ANY FIVE** of the following: (10)
- a) What are recognition sequences?
  - b) What are competent cells?
  - c) Enlist various methods of Library screening
  - d) What are Cosmids?
  - e) What is insertion vector?
  - f) What is the action of enzyme polynucleotide kinase?
- Q.6** Answer the following: (10)
- a) Explain the process of introduction of phage DNA into bacterial cells
  - b) Discuss the application of Gene therapy in cancer
- Q.7** Write short notes on: (10)
- a) Genomic DNA library
  - b)  $\lambda$  vector DNA
- Q.8** Give an account on (**ANY TWO**) (10)
- a) CAPture method
  - b) Recombinant vaccine
  - c) Role of Antisense RNA in fruit ripening

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