

**T. Y. B. SC. (BIOTECHNOLOGY) SEM – V (CBCS - 2015
COURSE) : WINTER - 2017
SUBJECT: RECOMBINANT DNA TECHNOLOGY**

Day : Monday
Date : 06/11/2017

W-2017-0949

Time: 02.00 PM TO 05.00 PM
Max. Marks: 60

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.
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SECTION - I

- Q.1** Attempt **ANY FIVE** of the following: (10)
- a) What is multiplex PCR?
 - b) Why depurination is necessary before blotting?
 - c) What are blunt and sticky ends?
 - d) Define gene cloning
 - e) Explain the action of S1 endonuclease and DNase I
 - f) What are recognition sequences?
- Q.2** Answer the following: (10)
- a) Explain with diagram principle and procedure of Agarose gel electrophoresis
 - b) What is R-M system? Explain characteristics of type II Restriction Endonuclease
- Q.3** Explain the following: (10)
- a) DNA Microarray
 - b) Linkers and Adaptors
- Q.4** Write short notes on (**ANY TWO**) (10)
- a) Pyrosequencing
 - b) Purification of plasmid DNA by classical method
 - c) Real time quantitative PCR

SECTION - II

- Q.5** Attempt **ANY FIVE** of the following: (10)
- a) What is the effect of Dcm and Dam methylases in gene manipulation?
 - b) Enlist desirable properties of plasmid as a vector
 - c) What is homopolymer tailing?
 - d) What is replacement vector?
 - e) What are transgenic plants?
 - f) How does DNA ligase act?
- Q.6** Answer the following: (10)
- a) Describe the process of recombinant insulin production
 - b) Describe the process of screening by hybridization
- Q.7** Write short notes on: (10)
- a) M13 as vector
 - b) Selection of transformants by antibiotic resistance
- Q.8** Give an account on (**ANY TWO**) (10)
- a) Recombinant vaccines
 - b) cDNA library
 - c) BACs

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