

**M. Sc. (Medical Biotechnology) Sem-II (Choice Based Credit System) :**

**WINTER - 2018**

**SUBJECT : rDNA IN MEDICINE**

Day : : Friday  
Date : 26/10/2018

**W-2018-1296**

Time : 10.00 AM TO 01.00 PM  
Max. Marks : 60

**N.B.:**

- 1) **Q.No.1 and Q.No.5 are COMPULSORY.** Out of the remaining questions attempt **ANY TWO** questions from each section.
- 2) Answers to both the sections should be written in **SEPARATE** answer books.
- 3) Draw neat and labeled diagrams **WHEREVER** necessary.
- 4) Figures to the right indicate **FULL** marks.

**SECTION – I**

- Q.1** With the help of suitable diagram write the principle of following techniques: [10]  
a) Southern hybridization      c) Homopolymer tailing  
b) DNase I foot printing      d) Nick translation
- Q.2** Explain in detail: [10]  
a) Screening methods for selection of recombinant clones from a library.  
b)  $\lambda$  based vectors
- Q.3** Attempt the following: [10]  
a) Elaborate on different types of polymerases used in rDNA work.  
b) Compare and contrast different classes of restriction enzymes.  
c) Explain characteristics features of YAC vectors and give their applications.  
d) What is the principle and applications of phage display?
- Q.4** Write short notes on the following: [10]  
a) Inclusion bodies  
b) Pichia vector system  
c) Methyl interference assay  
d) cDNA synthesis

**SECTION – II**

- Q.5** Write the principle of following PCR techniques: [10]  
a) Hot start PCR      c) Reverse transcriptase PCR  
b) Multiplex PCR      d) Real time PCR
- Q.6** With the help of suitable diagrams, explain the following in detail: [10]  
a) Different methods of site directed mutagenesis.  
b) Principle and applications of gene silencing.
- Q.7** Write short notes on the following: [10]  
a) RFLP  
b) Differential gene expression  
c) Introduction of DNA into mammalian cells  
d) Micro RNA
- Q.8** a) Write full form of following techniques: [05]  
i) SSCP      ii) DGGE      iii) RFLP      iv) ASA      v) PTT  
b) Explain the technique of automated DNA sequencing. Add a note on its advantages and applications. [05]

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