M. SC. (MEDICAL BIOTECHNOLOGY) SEM-II (CHOICE BASED CREDIT SYSTEM) : WINTER - 2017

SUBJECT : rDNA IN MEDICINE

Day Wednesday
Date 01/11/2017

W-2017-1052

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 Answer **ANY TWO** of the following: **[10]**

a) What are expression vectors? How are they used to maximize recombinant protein production? Explain with the help of suitable diagram.
b) With the help of suitable diagram explain different methods of DNA labelling.
c) Explain different methods of transcript analysis.

Q.2 Compare and contrast the following: **[10]**

a) Genomic library and cDNA library.
b) λ insertion vectors and λ replacement vectors.
c) Class I and class II restriction enzymes.
d) Different yeast vectors.

Q.3 Write short notes on the following: **[10]**

a) Fluorescence in situ hybridization
b) Vectors for protein purification
c) Restriction mapping
d) Yeast two hybrid system

Q.4 Explain in detail: **[10]**

a) Different methods of blunt end ligation.
b) What is a genomic library? What are different methods for construction of genomic library?

SECTION – II

Q.5 **a)** What is the principle of PCR? Explain with suitable diagram. Add a note on real time PCR. **[05]**

b) What is the principle of Sanger's method of sequencing? Explain with suitable diagram. **[05]**

Q.6 Explain in detail the principle of following techniques: **[10]**

a) SSCP **b)** DGGE **c)** RFLP **d)** ASA **e)** PTT

Q.7 With the help of suitable diagram explain in detail different techniques of: **[10]**

a) Site directed mutagenesis.
b) Gene therapy.

Q.8 Write short notes on the following: **[10]**

a) Disease models
b) Micro RNA
c) Applications of gene silencing techniques
d) Viral vectors for gene cloning in mammalian cells

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