T. Y. B. Sc. (Biotechnology) SEM – V (CBCS - 2015 COURSE) :
WINTER - 2018
Subject: Recombinant DNA Technology

Day: Friday
Date: 26/10/2018

W-2018-1184

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

N.B.:

1) Q1 and Q5 are compulsory.
2) Answer ANY TWO questions from Q 2, 3, 4 in Section I.
3) Answer ANY TWO questions from Q 6, 7, 8 in Section II.
4) Answers to Both the sections to be written in SEPARATE answer books.
5) Draw a labeled diagram WHEREVER necessary.

SECTION - 01

Q.1) Answer the following: (ANY FIVE) (2 Marks X 5 = 10)

a) What is contour-clamped homogeneous electrical-field (CHEF) electrophoresis?
b) What is the difference in PCR and Real Time PCR?
c) How separation of DNA occurs in the gel electrophoresis?
d) Mention the ideal characteristics of primer to be used in PCR
e) What is the role of enzyme Polynucleotide kinase?
f) What is action of enzyme Exonuclease III and Bal31?

Q.2) Answer the following: (5 Marks X 2 = 10)

a) Draw a labeled diagram representing Sanger's method DNA sequencing
b) What is Pulsed-field gel electrophoresis (PFGE)?

Q.3) Explain the following: (5 Marks X 2 = 10)

a) Explain the Principle of Southern blotting technique
b) pUC 18 as cloning vector

Q.4) Write short notes on the following: (5 Marks X 2 = 10)

a) DNA Microarray
b) BACs

SECTION - 02

Q.5) Answer the following: (ANY FIVE) (2 Marks X 5 = 10)

a) Mention the recognition séquence of *HindIII* and *Eco RI*
b) Mention the characteristics of the different types of restriction endonuclease
c) What is insertional inactivation?
d) What is RFLP?
e) What is the role of δ-endotoxin in BT plants?
f) What is blue white screening?

Q.6) Answer the following: (5 Marks X 2 = 10)

a) Genetic map of plasmid pBR322
b) DNA Markers

Q.7) Explain the following: (5 Marks X 2 = 10)

a) Cloning in a cosmid vector
b) Explain how oligonucleotide primers for a PCR are designed?

Q.8) Write short notes on the following: (5 Marks X 2 = 10)

a) cDNA libraries
b) Synthesis of human growth hormones in *E. coli*

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