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B. Sc. (Biotechnology) Part-III Examination, 2016

BIOTECHNOLOGY

Paper : IX

(Recombinant DNA Technology)

Time : Three Hours] *[Maximum Marks : 75*

Note : Attempt *all* questions from *Section-A, seven* questions from *Section-B* and *two* questions from *Section-C.*

SECTION – A

1. Which of the following is *not* true about restriction endonuclease ?

(a) restriction enzyme work in presence of Mg^{2+}

(b) type II restriction endonucleases do not require ATP for restriction activities

(c) it present in both eukaryotes and prokaryotes

(d) each restriction, enzyme only recognizes the same polindromic sequences regardles of source of DNA

2. The first step in the PCR is :

(a) deuaturation (b) primer extension

(c) annealing (d) cooling

3. Dideoxy DNA sequencing exclusively depends on one of the following :

(a) termination (b) ATP

(c) plasmid vector (d) vector primer

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4. The PCR is used to :

(a) amplify a small amount of DNA
(b) cleave bacteria plasmids
(c) Seal 'Sticky end'
(d) identify target plasmids

5. Which of the following sequences along a double-stranded DNA molecule may be recognized as a cutting site for a particular restriction enzyme ?

(a) AAGG
TTCC
(b) AGTC
TCAG
(c) GGCC
CCGG
(d) ACCA
TGGT

6. The polymerase enzyme used in PCR is :

(a) DNA Polymerase I
(b) Taq polymerase
(c) Renese transcriptase
(d) DNA polymerase-III

7. Shatgun approach is used for the construction of :

(a) cDNA library
(b) genomic library
(c) both
(d) none

8. In agarase gel electrophoresis :

(a) DNA migrates towards. The negative electrode
(b) Supercoiled plasmids migrates slower than their nicked counterparts
(c) Larger molecules migrate faster than smaller molecules
(d) Ethidium bromide can be used to visualize the DNA

9. The substate for restriction enzyme is :

(a) Single stranded RNA (b) partially double stranded RNA

(c) Cell wall proteins (d) Double stranded DNA

10. Choose the correct statement :

(a) RT. PCR technique use RNA as starting material

(b) Vector Capable of propagation in two different host is called a shuttle vector

(c) Insecticide-d-endotoxin is produced by Bacillus thuringiensis.

(d) All statements are correct

SECTION – B

1. Write a note on AFLP.

2. Describe the principle and steps involved in Dot blot technique.

3. Write short note on application of gene cloning in studying gene location.

4. Write a note on DNA isolation.

5. Discuss in short the use of various vectors for gene cloning.

6. Explain in short manipulation of printed DNA.

7. Write a note on western blot technique.

8. Write in short about cDNA library.

9. Explain a short note on recombinant vaccines.

SECTION – C

1. Describe in detail the technique of PCR, its principles and various modification and their uses.

2. Explain in detail on various methods for introduction of DNA into living cells and their screening.

3. Discuss in detail role of gene cloning in medicine.

4. Write a explanatory note on immuno screening of libraries.
