

C 40531

(Pages : 2)

Name.....

Reg. No.....

SIXTH SEMESTER B.Sc. DEGREE EXAMINATION, MARCH 2013

(CCSS)

Biotechnology

BT6 B03—RECOMBINANT DNA TECHNOLOGY

Time : Three Hours

Maximum : 30 Weightage

I. Objective Type Questions. Answer *all* questions :

1 Which among the following is a type II restriction enzyme ?

- | | |
|------------|------------------------|
| (a) EcoK. | (b) EcoP. |
| (c) EcoRI. | (d) None of the above. |

2 The buffer used for extracting DNA is generally :

- | | |
|----------------------|------------------------|
| (a) Slightly acidic. | (b) Slightly basic. |
| (c) pH neutral. | (d) None of the above. |

3 Which among the following is a phagemid ?

- | | |
|------------|-----------|
| (a) pEMBL | (b) pUE18 |
| (c) pBR322 | (d) pKN60 |

4 Which among the following is a neutral detergent ?

- | | |
|-----------|------------------------|
| (a) CTAB. | (b) Triton X 100. |
| (c) SDS. | (d) None of the above. |

5 Stuffer region is found in :

- | | |
|-----------------------|-------------------------|
| (a) Insertion vector. | (b) Replacement vector. |
| (c) Both (a) and (b). | (d) None of the above. |

6 Which among the following is a phasmid ?

- | | |
|------------|-----------------|
| (a) pGEM3Z | (b) pBluescript |
| (c) pUC119 | (d) |

State True or False :

- 7 T₄ DNA ligase is capable of both blunt and cohesive and ligation.
- 8 RNA is more alkalilabile than DNA.
- 9 PBR 322 recombinants are selected by a mechanism of a complementation.
- 10 Phagemid can exist as both double stranded and single stranded form.
- 11 Virgenes are *cis* acting.
- 12 CaCl₂ mediated transformation is receptor mediated.

(12 x ¼ = 3 weightage)

Turn over

II. Short Answer Type Questions. Answer *all* nine questions :

- 13 Binary vector.
- 14 M13mp vector.
- 15 X replacement vector.
- 16 Dideoxy nucleotides.
- 17 Primer dimer.
- 18 μ RT PCR.
- 19 Sticky ends.
- 20 Yeast episomal plasmids.
- 21 T DNA.

(9 x 1 = 9 weightage)

III. Short answer or Paragraph Questions. Answer any *five* questions :

- 22 Briefly explain the principle of alkali denaturation procedure of **plasmid** isolation.
- 23 Explain the role of phenol and **chloroform** in nucleic acid isolation.
- 24 What is FISH ?
- 25 Explain the significance of annealing temperature in **PCR**.
- 26 Briefly explain chemical degradation procedure of DNA sequencing.
- 27 What is **biolistics** ?
- 28 What is **triparental** mating ?

(5 x 2 = 10 weightage)

IV. Essay Questions. Answer any *two* questions :

- 29 Briefly explain features, merits and demerits of different types of restriction enzymes.
- 30 Briefly explain the steps in isolating RNA from cells, stressing on the importance of **RNAase** inhibitors.
- 31 What are **cosmids** ? Outline their merits and demerits. Briefly explain **in vitro** packaging.

(2 x 4 = 8 weightage)