**C 80146**

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Name...................................

Reg. No...................................

# SIXTH SEMESTER B.Sc. DEGREE EXAMINATION, MARCH/APRIL 2015

(UG–CCSS)

Core Course

Biotechnology

### BT 6B 03—RECOMBINANT DNA TECHNOLOGY

Time : Three Hours                                                   Maximum : 30 Weightage

I.  Object type questions. Answer *all* questions :

1   Which among the following is a sticky end cutter ?

(a)  EcoRI.                              (b)  Sma I.

(c)  Both (a) and (b).                   (d)  None of the above.

2   The Buffer used for extracting RNA is generally.

(a)  Slightly acidic.                    (b)  Slightly alkaline.

(c)  pH neutral.                         (d)  None of the above.

3   Which among the following is a phasmid :—

(a)  λ EMBL.                             (b)  λ WESWB'.

(c)  λgt 10.                             (d)  λ ZAP.

4   Which among the following is an anionic detergent :—

(a)  SDS.                                (b)  CTAB.

(c)  Triton × 100.                       (d)  All of the above.

5   Which among the following is an exclusive feature of replacement vector :—

(a)  Marker.                             (b)  Promoter.

(c)  Terminator.                         (d)  Stuffer.

6   Which among the following is the odd one :—

(a)  $T_4$ DNA ligase.                   (b)  *E.Coli* DNA ligase.

(c)  Vaccinica topoisomerase II.         (d)  EcoRI.

Say True *or* False :

7   Maxam and Gilbert sequencing is a chain synthesis procedure.

8   RFLP is a codominant molecular market.

**Turn over**

9  Golden Rice is carotenoid rich.

10  First cloned Buffalo is Ghairma.

11  Flavr Savr works by antisense RNA technology.

12  OD value of one at $A_{260}$ = 40 ug/m/DNA.

(12 × ¼ = 3 weightage)

II.  Short answer type questions. Answer all *nine* questions :

13  Triparental mating.

14  Binary vector.

15  Dolly.

16  Reverse transcriptase.

17  λ insertion vectors.

18  Phagemids.

19  Cosmids.

20  α complementation.

21  Virgenes.

(9 × 1 = 9 weightage)

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

22  What is Western Blotting ? Outline the principle of Western Blotting ?

23  Briefly explain the sanger's dicleoxy sequencing ?

24  Compare and contrast pBR 322 and puc18 ?

25  What is qRT PCR ? What are its applications ?

26  What are the different types of ends produced by type II enzymes ?

27  What is the principle of polymerase chain reaction ?

28  Comment on molecular pharming.

(5 × 2 = 10 weightage)

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

29  Briefly explain development, features and applications of M13 mp vectors ? Compare them with phagemids ?

30  Briefly explain the applications of transgenic plants ?

31  What is DNA finger printing ? What are its applications ?

(2 × 4 = 8 weightage)