



BB-211

Seat No. _____

Third Year B. Sc. (Sem. VI) Examination

March/April - 2014

CC - I - 12 : Biotechnology : Paper - XII
(Genetic Engineering)

Time : 3 Hours]

[Total Marks : 70

1 MCQ type : 10

(i) Which type of restriction enzymes are most use full in r DNA technology?

- (A) Typenl
- (B) Type II
- (C) Type III
- (D) None

(ii) _____ is heat resistant DNA polymerase?

- (A) taq DNA polymerase
- (B) Klenow fragment
- (C) T7 DNA polymerase
- (D) All

(iii) _____ is chain terminator nucleotide?

- (A) deoxyri bonucleotide
- (B) ribonucleotide
- (C) dideoxyribonucleotide
- (D) None

(iv) For blue white selection media must have _____

- (A) Xgal
- (B) tetracyclin
- (C) Peptone
- (D) beaf extract

- (v) Northern blotting detects_____
- (A) RNA
 - (B) DNA
 - (C) Protein
 - (D) None
- (vi) In pBR 322_____is selectable marker
- (A) Ori
 - (B) rop gene
 - (C) ampicillin resistance gene
 - (D) All
- (vii) PCR has_____steps
- (A) 1
 - (B) 3
 - (C) 4
 - (D) 5
- (viii) I am highest capacity cloning vector, i am_____
- (A) YAC
 - (B) BAC
 - (C) lambda ZAP
 - (D) None
- (ix) _____is used as volume excluder in hybridization buffer
- (A) Dextran
 - (B) PEG
 - (C) BSA
 - (D) All

- (x) When recombinant pUC vectors are transferred to wild type E.Coli than during blue white selection.
- (A) All colonies will be white colony
 - (B) All colonies will blue colour colonies
 - (C) only recombinant white
 - (D) only non Recombinant colony blue

2 Answer in brief : (any five) 10

- (i) Give use of methylase
- (ii) Explain U tube experiment associated with conjugation.
- (iii) Briefly explain artificial transformation.
- (iv) Draw genetic map of YAC
- (v) Application of DNA sequencing.
- (vi) Explain method detection of RNA post electrophoresis.
- (vii) In vivo gene therapy.

3 Write a short note on : (any five) 30

- (i) Applications of PCR.
- (ii) Western blotting.
- (iii) Give features of pUC series of vector.
- (iv) Genomic library.
- (v) Type II restriction and modification system.
- (vi) Define gene therapy? Briefly discuss various approaches to carry out gene therapy.

4 Give detailed note on any two : 20

- (i) Conjugation as a mode of gene transfer.
 - (ii) Hybridization technique for detection of nucleic acid fragment.
 - (iii) Application of r-DNA technology for welfare of human society.
 - (iv) Explain pyrosequencing and microarray based sequencing.
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