PARUL UNIVERSITY

PARUL INSTITUTE OF APPLIED SCIENCES

MID SEMESTER INTERNAL EXAMINATION,MARCH 2020

B. Sc. Semester 4

Subject: Biotechnology

Paper Code: (11102254) **Title of the paper:Recombinant DNA technology**

Date:2/ 3/2020 **Time:12:00 pm to 1:30pm**

Maximum Marks: 40

Instructions:

1. **All questions are compulsory and options are given in first and second question only.**
2. **Numbers to the right of question indicate the marks of respective question.**

Q. 1 Attempt any one question of the following. **(08)**

(i) Explain with diagram Western hybridization along with application

(ii)Describe in detail Natural method for gene transfer method.

Q. 2 Attempt any three questions of the following. **(12)**

(i) Give detail about Nick Translation

(ii) Write short note on Biolistics method

(iii) Short note on genomic library

(iv) Describe PCR technique along with steps

(v)Describes non radio active labeling (Any two)

Q. 3 Do as directed. Attempt all five questions. **(05)**

(i)What is DNA library?

(ii) Which is the Electrical gene transfer method?

(iii) Define- Probe

(iv) List out the common method for Nucleic acid Purification

(v)What is hybridization?

Q. 4 Write correct option in your answer sheet for following 15 multiple choice questions. **(15)**

MCQ 1 Arrange the following in correct order

1. Southren blotting	A. RNA-DNA hybride
2. Western blotting	B. DNA-DNA hybride
3. Northen Blotting	C. Southern blotting
4. DNA fingerprinting	D. antigen- antibody reaction

(A) 1-A, 2-C, 3-D,4-B (B) 1-B,2-D,3-A , 4-C

(C) 1-B , 2-D , 3-C ,4-A (D) 1-B ,2-A , 3-D, 4-C

MCQ 2 Which of the following technique is suitable for identifying DNA molecule in sample?

(A) Northern blotting (B) Southern blotting

(C) Western blotting (D) None of above

MCQ 3 Which of the following statement are true for Agarobacterium mediated gene transfer method

(A) Vir genes (B) T-DNA borders

(C) Ori C (D) All of these

MCQ 4 Choose the correct statement for genomic libraries.

(A) Genomic libraries include the representation of the whole genome of the organism
(B) Sequences such as telomeres are also represented
(C) Telomeres can be readily cloned
(D) None of above

MCQ 5 In gel electrophoresis fragments are separated on basis of

(A) Size
(B) Charge
(C) Both A and B
(D) Temperature sensitivity

MCQ 6 Why is a probe labeled ?

(A) Improve visibility
(B) Improve stability
(C) Improve location identification
(D) Improve binding capability

MCQ 7 Radiolabelling is generally brought about by addition of radioactive phosphorus _____

(A) True
(B) False

MCQ 8 Which DNA is restricted to making a genomic library?

(A) Genomic
(B) Plasmid
(C) Phage
(D) Plant

MCQ 9 During electrophoresis denaturation of the double stranded DNA is brought about by _____

(A) Treatment with alkali
(B) Application of current
(C) Treatment with EtBr
(D) Application of heat

MCQ 10 Agrobacterium tumefaciens is a

(A) a) Gram negative soil bacterium causing crown gall disease in dicot
(B) Gram negative soil bacterium causing crown gall disease in monocots
(C) Gram positive soil bacterium causing crown gall disease in dicots
(D) Gram positive soil bacterium causing crown gall disease in dicots

MCQ 11 Which of the following statements are true for agrobacterium mediated gene transfer

(A) Vir genes are essential for gene transfer
(B) T-DNA borders are essential for gene transfer
(C) both a and b
(D) none of these

MCQ 12 Which enzyme is involved in the synthesis of the DNA over an RNA template?

(A) DNA polymerase
(B) Reverse transcriptase
(C) Klenow fragment
(D) RNA polymerase

MCQ 13 Nick translation is done by

(A) DNA polymerase I
(B) DNA polymerase II
(C) DNA Ligase
(D) None

MCQ 14 Which of the following bacterium is considered as ‘natural genetic engineer’

(A) Agrobacterium tumefaciens
(B) Psueudomonasputida
(C) Thermusaquaticus
(D) Agrobacterium radiobactor

MCQ 15 The digestion of mRNA during RT – PCR is carried out by the enzyme

_____

(A) Exonuclease
(B) RNase H
(C) Bal 31
(D) Endonuclease

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