

[51/A9]

SEAT NO. _____

NO. OF PRINTED PAGES: 02

SARDAR PATEL UNIVERSITY
B.Sc. V Semester Examination
Wednesday, 24th October 2018
10:00 am to 1:00 pm
Biotechnology: US05CBIT02
Molecular Techniques

Total Marks: 70

[10]

Q.1 Multiple Choice Questions.

- i) The movement of ions in electric field depends upon _____.
- Shape and size of molecules
 - Magnitude of charge, shape and mass of the molecules
 - Magnitude of charge and shape of the molecules
 - Magnitude of charge and mass of the molecules
- ii) What is the role of SDS in SDS PAGE?
- Protein denaturing and imparting net negative charge.
 - Imparting overall negative charge to the proteins.
 - Imparting equal mass to all proteins.
 - Protein unfolding and imparting net positive charge.
- iii) FISH means _____.
- Foreign insitu hybridization.
 - Fluorescent in situ hybridization.
 - Fast insitu hybridization.
 - Full insitu hybridization.
- iv) Blocking agents used to depress nonspecific binding of probes on the membrane is/are _____.
- Skim milk powder
 - BSA
 - PVP
 - All of these.
- v) cDNA libraries are constructed from _____.
- DNA copies from RNA
 - DNA copies as PCR products
 - DNA from whole chromosome
 - Whole gene.
- vi) Southern hybridization is _____.
- Used to identify a specific proteins
 - Used to identify a specific DNA.
 - Used to identify a specific RNA.
 - Used to identify a specific both DNA and RNA.
- vii) Arrange the following in correct order.
- Southern blotting – A) RNA-DNA hybridization
 - Western blotting -- B) DNA-DNA hybridization
 - Northern blotting – C) Southern blotting
 - DNA fingerprinting – D) Ag-Ab reaction
- 1-A,2-C,3-D,4-B
 - 1-B,2-D,3-A,4-C
 - 1-B,2-A,3-D,4-C
 - 1-b,2-C,3-A,4-D
- viii) _____ was known as the Father of Indian DNA finger printing.
- Karry Mulis
 - L.Singh
 - H.J. Khorana
 - A.Sanger
- ix) How many different types of chemical treatments are required in Maxam-Gilbert method?
- 1
 - 2
 - 3
 - 4.
- x) Which of the following is not a DNA sequencing method?
- LMPCR
 - Sanger's method
 - Edman's method
 - Maxam-Gilbert method

P.T.O.

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Q.2 Answer the following questions in short. (Attempt any 10)

[20]

- i) Write a brief note on factors affecting electrophoresis.
- ii) Give advantages of PCR.
- iii) Diagrammatically represent cassette mutagenesis
- iv) Give the principle of autoradiography.
- v) Write about Dot blot hybridization.
- vi) Define Satellite DNA.
- vii) Define the terms – Hybridization and Blotting.
- viii) What do you mean by molecular marker? Give examples.
- ix) Differentiate between cDNA library and genomic library.
- x) Write applications of DNA fingerprinting.
- xi) Write a brief note on automated method of DNA sequencing.
- xii) Give full form of PCR, VNTR, SNP, RAPD

- Q.3 a) Explain in detail - principle and steps of Agarose Gel Electrophoresis.**
b) Give a detail note on RT-PCR.

[05]

[05]

OR

- Q.3 a) Write a short note on SDS-PAGE.**
b) Explain principle and stages of the method in which thermal cycler is used.

[05]

[05]

- Q.4 a) Give an account on Southern Hybridization.**
b) Discuss in detail Colony and plaque hybridization.

[06]

[04]

OR

- Q.4 a) What is In situ hybridization? Explain in detail FISH and McFISH**
b) Write a short note on Direct Autoradiography.

[06]

[04]

- Q.5 a) Explain in detail RFLP.**
b) Give an account on construction of cDNA library.

[06]

[04]

OR

- Q.5 a) Explain in detail AFLP.**
b) Give a short note on Genomic library.

[06]

[04]

- Q.6 a) Discuss in detail – In vitro translation.**
b) Write a note on DNA foot printing and its applications

[06]

[04]

OR

- Q.6 Explain in detail Chain termination method for DNA sequencing.**

[10]

—X—
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