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SARDAR PATEL UNTVERSITY

B.Sc. Biotechnology, Fifth Semester

15/11/2013 Friday

Time: 10.30 a.m. to 1:30 p.m.

Molecular Techniques (US05CBIT02)

Total Marks: 70

Q1 **Multiple choice questions. All are compulsory** **(1X10=10)**

1 Thickness of gel depends on thickness of.....
- a) Buffer
- b) Comb
- c) Electrodes
- d) Spacer

2 ..... °C is the primer annealing temperature.
- a) 74-84
- b) 94-100
- c) 50-60
- d) None of the above.

3 Which of the following technique is/are used for protein engineering?
- a) Site directed mutagenesis
- b) DNA Foot printing
- c) r DNA technology
- d) All of the above.

4 Transfer of sample from gel to membrane is.....
- a) Hybridization
- b) Blotting
- c) Probing
- d) None of the above

5 Blocking agents used to depress non specific bonding of probes on the membrane is/are.....
- a) Dried milk
- b) Heparin
- c) SDS
- d) All of the above

6 FISH means..... in situ hybridization.
- a) Foreign
- b) Fast
- c) Fluorescent
- d) Full

7 ..... discovered DNA fingerprinting technique.
- a) Karry Mulis
- b) L.Singh
- c) H.J.Khorana
- d) A.Sanger

8 In thermal cycle sequencing .....is used as thermostable enzyme.
- a) Tam
- b) Taq
- c) Tan
- d) TAQ

9 ..... cell type is not suitable for DNA fingerprinting.
- a) Hair
- b) Mature RBC
- c) WBC
- d) Cheek cell

10 Method used for mapping of eukaryotic genome is.....
- a) RFLP
- b) SNPs
- c) AFLP
- d) All of the above.

[P.T.O.]

Q2		**Short Questions. (Attempt any TEN)**	**(2X10=20)**
	1	Define electrophoresis and enlist the factors affecting electrophoretic mobility.	
	2	Define in vitro translation.	
	3	Enlist the different methods of Gene cloning.	
	4	Enlist the methods for preparation of nucleic acid probe.	
	5	Give advantages of PCR over Gene cloning.	
	6	Give the principle of Autoradiography.	
	7	Define: RFLP	
	8	Give applications of DNA Foot printing.	
	9	Diagrammatically represent Cassette Mutagenesis.	
	10	Give the applications of FISH	
	11	Define: Satellite DNA.	
	12	Enlist the techniques in which radio autography is used.	
Q3	**A**	Write a note on AFLP.	**[06]**
	B	Give diagrammatic representation of c-DNA library generation.	**[04]**
		OR	
Q3	**A**	Explain in detail genomic library construction.	**[05]**
	B	Explain DNA finger printing.	**[05]**
Q4	**A**	Write a short note on: Colony Hybridization.	**[05]**
	B	Explain Direct Autoradiography.	**[05]**
		OR	
Q4	**A**	Explain how Southern Hybridization takes place.	**[07]**
	B	What is Differential Screening?	**[03]**
Q5	**A**	Explain the Maxam Gilbert method for DNA sequencing.	**[06]**
	B	Discuss Automated DNA Sequencing.	**[04]**
		OR	
Q5	**A**	Explain In vitro transcription & translation.	**[06]**
	B	Explain thermal cycle sequencing along with diagram.	**[04]**
Q6		Explain basic methodology of PCR and give some of its important applications.	**[10]**
		OR	
Q6		What is site directed mutagenesis? Explain primer extension method for mutagenesis.	**[10]**

ALL THE BEST