enzymes.

M Sc. Biotechnology Second Semester **Genetic Engineering** (MBT-07)

Duration: 3Hrs. Full Marks: 70 (PART-B: Descriptive) Duration: 2 hrs. 40 mins. Marks: 50 1. Write short notes on: (any five) 2×5=10 a) DNA ligases b) Cosmid c) Dot blot d) npt II e) Polymerase III f) M13 g) Blunt end ligation 2. Give the appropriate answer for the following questions: (any five) a) What do you mean by an adaptor? Point out the main difference between adaptor and linker. 1+2=3 b) What do you mean by BAC? What is the advantage of YAC over BAC? 2+1=3 c) Explain transformation method for inserting external gene into one suitable vector. 3 d) Mention the important steps of cDNA library construction with suitable 3

e) What is the contribution of dot blot in genetic engineering?	3
f) What is nick translation?	3
g) What is reporter gene? What is significance of reporter gene?	1+2=3
3. Illustrate the following (any five):	5×5=25
a) Basic principle of RT PCR b) Sourthern blotting mechanism	
c) RAPD	
d) Role of dideoxy nucleotides in DNA sequencing.	
e) Characteristics of a good vector	
f) Restriction enzyme II	
g) Ti plasmid construction	

2013/02

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(The figures in the margin indicate full marks for the questions)

(The Jigares III	the margin mateure full marks for the	questions
Duration: 20 minutes		Marks – 20
	(PART A- Objective)	
Choose the correct option for the follo	wing questions:	1×20=20
1. Restriction enzyme is used in		
a) Dot blot	b) RAPD	
c) RFLP	d) Colony hybridization	
2. Dideoxy nucleotides are used in		
a) cDNA preparation	b) Genomic library preparation	
c) Maxam and Gilbert's method	d) Sanger's method	
3. The main requirement of first step of l	PCR is	
a) Tag polymerase	b) High temperature	
c) Primer	d) Ligase	
4. To make mRNA from DNA molecule	, the PCR required is	
a) Nested PCR	b) RT PCR	
c) Anchored PCR	d) Gradient PCR	
5 Bacterial colonies are selected in		
a) Dot blot	b) Colony hybridization	
c) AFLP	d) RFLP	
6. Molecular glue is		
a) Ligase	b) Endonuclease	
c) Exonuclease	d) Polymerase	
7. Eco RI is used for the construction of		
a) Blunt end	b) Sticky end	
c) Hexa end	d) Penta end	
8. Ready made sticky ends is present in		
a) Adaptors b) Linkers	c) Both	d) None

9. Klenow enzymes are ma	de from			
a) Pol I	b) Pol II	c) Pol III	d)	None of the above
10. The enzyme which cut	exactly at the pa	alindrome sequence is		
a) Type I	b) Type II	c) Type III	d)	Type VI
11. In partial digestion, the	main enzyme i	s (31 7 36)		
a) Restriction enzyme	b) Li		Polymerase	d) Modifying enzyme
12. Shuttle vectors are of gr	reat importance	, because		
a) Can be used in two di	fferent hosts	b) Can be used only for one host		
c) Cost is very low		d) Is very attractive		
13. Largest DNA fragment	can be inserted	in		
a) Plasmid	b) Cosmid	c) Ph	nagmid	d) BAC
14. T DNA is the part of Ti	plasmid in whi	ch		
a) Target gene is inserte	•	b) Resistant gene is	inserted	
c) Ori is inserted		d) Replication site i		
15. Short gun method is use	ed in the constru	uction of		
a) Genomic library		b) cDNA library	c) Both	d) None
16. Western blotting is the	hvbridization te	chnique for		
a) Protein	,	b) DNA	c) RNA	d) Nucleotide
,		PER STATE OF THE PER STATE		2800
17. The sequences in homo	polymer tailing			
a) Same sequences		b) Two different sec		
c) Three different sequen	ices	d) Four different sec	quences	
		20 - 1 - 1		
18. The phosphate group pr				
a) Phosphatase	b) Ki	nase	c) Polymerase	d) RE
10 1777	0			
19. AFLP is the combination	on of			
a) RAPD and RFLP				
b) RAPD and dot blot	1 . 1.			
c) Dot blot and colony h	ybridization			
d) RAPD and RFPL				

20. Liposome is made from

c) Carbohydratesd) Vitamins

a) Lipidsb) Proteins