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PSG COLLEGE OF ARTS & SCIENCE (AUTONOMOUS)

MSc DEGREE EXAMINATION MAY 2024

(Third Semester)

Branch - BIOCHEMISTRY

MOLECULAR BIOTECHNOLOGY

Tin	ne: T	Three Hours	Maximum: 50 Marks
		SECTION-A (5 Marks) Answer ALL questions ALL questions carry EQUAL marks	$(5 \times 1 = 5)$
1	i)	Restriction enzymes are also known as ii) ligase ii) polymerase iv) restriction en	ndonucleases
2	i)	Genomic library construction is concerned with i) Gene isolation ii) Protein production iii) Antibiotics iv) Regeneration	
3		95% transgenic animals are) sheep ii) rabbits iii) pigs	iv) mice
4		Which was the first transgenic plant generated?) Cumin ii) Tobacco iii) Basil	iv) Tomato
5		In gene therapy, the gene defects are cured in a child or _) adult ii) teenage iii) old	stage. iv) embryo
SECTION - B (15 Marks) Answer ALL Questions ALL Questions Carry EQUAL Marks (5 x 3 = 15)			
6	a. b.	State the M13 filaments phage. OR Sketch the linkers and adapters.	(3 x 3 - 13)
7	а. b.	Discuss the shot gun cloning. OR Illustrate the microarray techniques.	
8	a.	Explain the reporter genes. OR	
9	b. a.	Organize the applications of transgenic mice. Analyze the co cultivation with protoplast. OR	
	b.	State the marker genes.	
10	a.	Discuss the adult stem cell. OR	
	b.	Explain the induced pluripotent stem cells.	

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SECTION -C (30 Marks)

Answer ALL questions
ALL questions carry EQUAL Marks

 $(5 \times 6 = 30)$

11 a. Analyze the natural plasmids and cosmid.

OR

- b. Construct the types and target sites of restriction enzymes.
- 12 a. Interpret the next generation sequence.

OR

- b Assess the construction of genomic and cDNA libraries.
- 13 a. Develop the cloning in sheep by nuclear transfer.

OR

- b. Analyze the phospholipids as gene delivery vehicles.
- 14 a. Assess the gene transformation techniques.

OR

- b. Interpret the genetically modified food.
- 15 a. Analyze the in-vivo method of somatic cell gene therapy.

OR

b. Construct the vectors used for gene therapy.

Z-Z-Z

END