TOTAL PAGES: 2

22BCP312N

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

MSc DEGREE EXAMINATION DECEMBER 2025
(Third Semester)

Branch - **BIOCHEMISTRY**

MOLECULAR BIOTECHNOLOGY

Time: Three Hours Maximum: 75 Marks

SECTION-A (10 Marks)
Answer **ALL** questions
ALL questions carry **EQUAL** marks (10 × 1 = 10)

Module No.	Question No.	Question	K Level	CO
1	1	What are relaxed plasmids? a) The ones having copy numbers above 50 per cell b) The ones that can't be digested by endonucleases c) The ones that can't be isolated d) The ones present in more than one strains of the same host	K1	CO1
	2	What is pYAC3? a) Yeast artificial chromosome b) Plasmid vector c) Hybrid of phage and plasmid d) Yeast chromosome	K2	CO1
2	3	Tell the process by which a probe is used to screen a library. a) Hybridization b) Southern blotting c) Colony hybridization d) Western blotting	K1	CO2
	4	Infer that a genomic library is a collection of _____ a) Genes b) Proteins c) Vectors d) Recombinants	K2	CO2
3	5	Select the item whose change can be studied is transgenic animals a) serum b) urine c) gene d) saliva	K1	CO3
	6	95% transgenic animals are visualized in a) sheep b) rabbits c) pigs d) mice	K2	CO3
4	7	What is the transgenic tomato variety with an improved shelf life a) Lyco 100 b) PHB tomato c) Bt tomato d) Flavr savr	K1	CO4
	8	Predict the desirable traits carried by transgenic plants a) harmful genes b) herbicide resistance c) lactose intolerance d) complementary genes	K2	CO4
5	9	Where does the Embryonic stem cells are derived from the blastocyst. a) inner cell mass b) ectoderm c) blastocoel d) mesoderm	K1	CO5
	10	How are persons with hereditary disease cured? a) gene therapy b) cloning c) dialysis d) chemotherapy	K2	CO5

Cont...

SECTION - B (35 Marks)

Answer **ALL** questions

ALL questions carry **EQUAL** Marks (5 × 7 = 35)

Module No.	Question No.	Question	K Level	CO
1	11.a.	Illustrate the gene cloning vectors and the properties of cosmid.	K2	CO1
		(OR)		
	11.b.	Infer the structural features of SV40 viral vectors.		
2	12.a.	Develop the technique of plaque lift hybridization.	K3	CO2
		(OR)		
	12.b.	Construct the significance of hybrid arrest translation technique.		
3	13.a.	Organize the principle and applications of calcium phosphate co precipitate method.	K3	CO3
		(OR)		
	13.b.	Identify the principle of gene transformation by electroporation method and its application.		
4	14.a.	Examine the insect and viral resistance in transgenic plants.	K4	CO4
		(OR)		
	14.b.	Analyze the role of cultivation of protoplast in genetic transformation.		
5	15.a.	Categorize the unique properties of stem cells.	K4	CO5
		(OR)		
	15.b.	Examine the implications in Parkinson's and Alzheimer's diseases.		

SECTION -C (30 Marks)

Answer **ANY THREE** questions

ALL questions carry **EQUAL** Marks (3 × 10 = 30)

Module No.	Question No.	Question	K Level	CO
1	16	Analyze the structure and properties of BAC and YAC.	K4	CO1
2	17	Examine the next generation sequence technology and its applications.	K4	CO2
3	18	Assess the methods developed for the production of transgenic animals and its applications.	K5	CO3
4	19	Explain the advantages and disadvantages of genetically modified food.	K5	CO4
5	20	Elaborate the In vivo method of somatic cell gene therapy.	K6	CO5

Z-Z-Z END