

PSG COLLEGE OF ARTS & SCIENCES
(AUTONOMOUS)
MSc DEGREE EXAMINATION MAY 2026
(Fourth Semester)

Branch – **BOTANY**

PLANT 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	The growth of plant tissues in artificial media is called ----- a. Gene expression b. Transgenesis c. Plant tissue culture d. Cell hybridization	K1	CO1
	2	Plant biotechnology NOT involves ----- a. Production of valuable products in plants. b. Production of virus free plants c. Rapid control multiplication of desired genotypes d. Nanoparticle Synthesised	K2	CO1
2	3	Artificial seeds are----- a. Seeds produced in laboratory condition b. Somatic embryos encapsulated in a gel c. Seeds encapsulated in a cell d. Zygotic embryo encapsulated in a gel	K1	CO2
	4	The variation <i>invitro</i> culture is called as ----- a. <i>Invitro</i> variation b. Mutation c. Somoclonal variation d. Breeding of Plant	K2	CO2
3	5	Who coined the term protoplasts? a. Stephen Hales b. Thomas Nuttall c. James Bolton d. Johannes Von Hanstein	K1	CO3
	6	Which of the following method is used for <i>invitro</i> germplasm conservation? a. Cryopreservation b. Cold storage c. Low pressure and Low O ₂ storage d. Liquid N ₂ Storage	K2	CO3
4	7	A recombinant DNA molecule is produced by joining together----- a. One mRNA with a DNA segment b. One mRNA with a tRNA segment c. One mRNA molecules d. Two DNA segments	K1	CO4
	8	The extra chromosomal self replicating double stranded, closed, circular DNA molecules are called ----- a. Plasmids b. Phages c. Viruses d. Chloroplasts	K2	CO4
5	9	A technique called southern blotting is used in ----- a. Monoclonal antibody production b. <i>Invitro</i> culture c. Genetic finger printing d. Gene therapy	K1	CO5
	10	Genomic library construction is concerned with ----- a. Gene isolation b. Protein production c. Antibiotics d. Regeneration	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.	Explain the types of culture media.	K5	CO1
		(OR)		
	11.b.	Explain the role of Auxin in plant tissue culture.		
2	12.a.	Discuss about techniques of cryopreservation.	K6	CO2
		(OR)		
	12.b.	Explain the methods of somatic hybridization.		
3	13.a.	Examine the secondary metabolites production through cell.	K4	CO3
		(OR)		
	13.b.	Analyze the methods of protoplast fusion and culture.		
4	14.a.	Identify the enzymes involved in genetic engineering.	K3	CO4
		(OR)		
	14.b.	Differentiate between the BACs and YACs.		
5	15.a.	Enumerate the role of Genomic library.	K2	CO5
		(OR)		
	15.b.	Illustrate Sanger sequencing method of genetic engineering.		

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	Explain the role of Cytokinin and Absciscic acid in plant biotechnology.	K2	CO1
2	17	Discover the techniques of organ culture and artificial seeds.	K4	CO2
3	18	Elaborate the methods and <i>invitro</i> conservation of Germplasm.	K6	CO3
4	19	Analyze the applications of plasmids and cosmids in recombinant DNA technology.	K4	CO4
5	20	Estimate the techniques involved in Western Hybridization.	K6	CO5

Z-Z-Z

END