

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)
BSc DEGREE EXAMINATION MAY 2026
(Sixth Semester)

Branch - **MICROBIOLOGY**

APPLIED BIOTECHNOLOGY

Time: Three Hours

Maximum: 75 Marks

SECTION-A (10 Marks)

Answer **ALL** questions

ALL questions carry EQUAL marks (10 × 1 = 10)

Question No.	Question	K Level	CO
1	Choose from the following the host used for the expression of the HSV-IgD gene (i) CHO Cells (ii) HeLa Cells (iii) CRO Cells (iv) MK Cells	K1	CO1
2	Protein engineering of hGH was achieved with the modification of receptors for ----- (i) C3 (ii) Prolactin (iii) HLA (iv) Ca ²⁺	K2	CO1
3	Recall from the following, the organism that produces Byssal adhesive (i) Xanthomonas (ii) Geldium (ii) Flavobacterium (iv) Mytilus	K1	CO2
4	Show from the following the class to which PHAs belong: (i) Xenobiotics (ii) Biofuels (iii) Bioplastics (iv) Biofilms	K2	CO2
5	Identify the antibiotic to which Neomycin phosphotransferase confers resistance in transformed cells (i) Tet (ii) Kan (iii) Van (iv) Amp	K1	CO3
6	Name the pest against which the Potato proteinase inhibitor II is active (i) Pink stem borer (ii) Purple moth (iii) Slimy larvae (iv) Red borer	K2	CO3
7	State the term used for genetically engineered animals modified to produce pharmaceutical products (i) Transgenic animals (ii) Farm animals (iii) Pharm animals (iv) Chimera	K1	CO4
8	The method of employing fluorescent labels for locating markers on chromosomes by detecting the hybridisation probes is (i) Microarray (ii) Biochips (iii) FISH (iv) ISH	K2	CO4
9	Select the one which is not a type of IP? (i) Copyright (ii) Patent (iii) GI tag (iv) Mathematical formula	K1	CO5
10	Which is the only GM crop that can be cultivated in India? (i) Potato (ii) Tobacco (iii) Cotton (iv) Corn	K2	CO5

Cont...

SECTION - B (35 Marks)Answer **ALL** questions**ALL** questions carry **EQUAL** Marks (5 × 7 = 35)

Question No.	Question	K Level	CO
11.a.	Analyse the biotechnological aspects in the production of therapeutic enzymes for CF.	K4	CO1
	(OR)		
11.b.	Examine the role of gene shuffling in the production of hybrid interferons.		
12.a.	List out the applications of GMOs in xenobiotic degradation with examples.	K4	CO2
	(OR)		
12.b.	Inspect the role of rDNA technology in the production of melanin.		
13.a.	Explain the role of the Ti plasmid in the creation of insect-resistant plants.	K5	CO3
	(OR)		
13.b.	Justify the usefulness of genetic engineering for the production of herbicide-resistant plants with examples.		
14.a.	Evaluate the importance of RFLP in the diagnosis of genetic disorders.	K5	CO4
	(OR)		
14.b.	Explain the principle behind DNA Microarray technology.		
15.a.	Compile the procedures involved in patenting biotechnological inventions in India.	K6	CO5
	(OR)		
15.b.	Compose short notes on the GMO regulations in India.		

SECTION - C (30 Marks)Answer **ANY THREE** questions**ALL** questions carry **EQUAL** Marks (3 × 10 = 30)

Question No.	Question	K Level	CO
16	Distinguish the types of novel antibiotics produced through genetic engineering.	K4	CO1
17	Explain the role of recombinant DNA technology in fructose and alcohol production.	K4	CO2
18	Explain with suitable examples how to use plants as bioreactors.	K5	CO3
19	Recommend the best method for the creation of transgenic mice. Justify your answer with supportive diagrams and explanations.	K5	CO4
20	Elaborate upon the various aspects of IPR.	K6	CO5

Z-Z-Z

END