

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION MAY 2026
(Sixth Semester)

Branch – BOTANY

INDUSTRIAL 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 is the primary objective of primary screening? i) To determine the exact yield of a metabolite. ii) To distinguish between desirable and undesirable microorganisms. iii) To identify the chemical structure of a product. iv) To optimize fermentation conditions.	K1	CO1
	2	Which technique is commonly used to detect antibiotic-producing microorganisms? i) Enrichment culture technique. ii) Crowded plate technique. iii) Auxanographic technique. iv) Replica plating.	K2	CO1
2	3	A continuous bioreactor in which only the flow rate is used to control the rate of cell or product productivity is called: i) Turbidostat ii) Chemostat iii) Level stat iv) pH	K1	CO2
	4	Which of the following is commonly used as a nitrogen source in fermentation media? i) Glucose ii) Corn steep liquor iii) Beet molasses iv) Silicone oil	K2	CO2
3	5	Which microorganism is primarily used for the industrial production of citric acid? i) <i>Penicillium chrysogenum</i> ii) <i>Aspergillus niger</i> iii) <i>Saccharomyces cerevisiae</i> iv) <i>Lactobacillus delbrueckii</i>	K1	CO3
	6	Name process of adding sugar to grape juice before fermentation to increase final alcohol content is called: i) Fortification ii) Chaptalization iii) Pasteurization iv) Maceration	K2	CO3
4	7	Microbial protein (SCP) is considered a valuable source of which nutrient? i) Fat ii) Protein ii) Minerals only iv) Carbohydrates only	K2	CO4
	8	Who is the largest producer of biogas? i) China ii) India iii) Andra iv) Kerala	K2	CO4
5	9	Which microorganism is predominantly used for the industrial production of alkaline protease? i) <i>Escherichia coli</i> ii) <i>Bacillus subtilis</i> iii) <i>Saccharomyces cerevisiae</i> iv) <i>Aspergillus niger</i>	K1	CO5
	10	Which fermentation method is commonly used for large-scale production of cellulase? i) Solid-state fermentation ii) Submerged fermentation iii) Continuous fermentation iv) Both i and ii	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.	Discuss influence of biotechnology in industrial applications?	K2	CO1
	(OR)			
	11.b.	Visualize the role of microorganisms in industrial biotechnology.		
2	12.a.	Explain fermentation a batch process.	K2	CO2
	(OR)			
	12.b.	Classify the types of media sterilization. Mention its advantages.		
3	13.a.	Explain industrial production of lactic acid.	K3	CO3
	(OR)			
	13.b.	Determine the industrial production of Streptomycin.		
4	14.a.	Examine the biological methods for sewage treatment.	K3	CO4
	(OR)			
	14.b.	Summarize uses of yeast in Industrial biotechnology?		
5	15.a.	Organize the role of fungi in industrial biotechnology.	K4	CO5
	(OR)			
	15.b.	Infer microbes are used for vitamin production.		

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	Discuss industrially importance of strains isolated and preserve?	K1	CO1
2	17	Classify the raw materials for microbial fermentation process.	K2	CO2
3	18	Compute the process for alcoholic fermentation. Add notes on its significance.	K3	CO3
4	19	Biogas production is sustainable bioenergy industry-Justify.	K4	CO4
5	20	Correlate industrial applications of amylases and proteases.	K5	CO5

Z-Z-Z

END