

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

MSc DEGREE EXAMINATION MAY 2025
(Second Semester)

Branch - APPLIED MICROBIOLOGY

FERMENTATION AND BIOPROCESS TECHNOLOGY

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 preservation by liquid Nitrogen is called as _____. a) Cryopreservation b) Lyophilization c) Freeze-drying d) Desiccation	K1	CO1
	2	Which of the following is not a process of fermentation? a) Batch process b) Continuous process c) Feed Batch process d) Conceptual process	K2	CO1
2	3	Which of the following factors are not involved in the scale-up process? a) Inoculum development b) Sterilization c) Temperature d) Medium design	K1	CO2
	4	Which of the following is not the component of aeration and agitation system? a) Impeller b) Baffles c) Stirrer gland and bearing d) Thermometer	K2	CO2
3	5	The Aeration is mainly provided to organisms present in _____. a) Submerged culture b) Solid State culture c) Surface culture d) Batch culture	K1	CO3
	6	Which of the following process is used to separate insoluble particles from liquids? a) Filtration b) Extraction c) Drying d) Sieving	K2	CO3
4	7	The type of fermentation observed in yeasts is a) acrylic fermentation b) lactic acid fermentation c) pyruvic fermentation d) alcoholic fermentation	K1	CO4
	8	_____ organism was used to produce recombinant insulin. a) <i>Cyanobacteria</i> b) <i>E.coli</i> c) <i>Saccharomyces cerevisiae</i> d) <i>B. subtilis</i>	K2	CO4
5	9	Which of the following fungi produces α-amylase? a) <i>Bacillus</i> b) <i>Penicillium</i> c) <i>Phanerochaetes</i> d) <i>Fusarium</i>	K1	CO5
	10	Which of the following must not be a characteristic of a quality system? a) It must be well-understood b) Products satisfy customer expectations c) Emphasis on problem prevention d) It must be ineffective	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.	Analyze the economic importance of industrial scale recombinant products.	K4	CO1
	(OR)			
	11.b.	Conclude the characters of ideal production media.		
2	12.a.	Examine in brief account on structure of fermenter.	K4	CO3
	(OR)			
	12.b.	Distinguish Newtonian and non-Newtonian fluids with suitable explanation.		
3	13.a.	Explain in brief note on theory of filtration mention any one industrial filter.	K5	CO4
	(OR)			
	13.b.	Evaluate the significance of drying and add a note on types of dryers.		
4	14.a.	Determine the basic steps involved in ethanol production.	K5	CO2
	(OR)			
	14.b.	Interpret your views on mass preparation of Cheese and mention its advantages.		
5	15.a.	Discuss elaborately the industrial production of amylase.	K6	CO5
	(OR)			
	15.b.	Predict the importance of machine learning in fermentation technology.		

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	List out the preservation methods adopted for of industrial microbes.	K4	CO1
2	17	Infer about working principle, applications and limitations of photobioreactor.	K4	CO2
3	18	Justify chromatography is an ideal method for compound separation.	K5	CO3
4	19	Assess the industrial production protocol for wine fermentation.	K5	CO5
5	20	Adopt suitable immobilization method for industrial Enzymes.	K6	CO4