

**PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)**

**BVoc DEGREE EXAMINATION DECEMEER 2024
(Third Semester)**

Branch – FOOD PROCESSING TECHNOLOGY

FOOD MICROBIOLOGY AND FERMENTATION 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	Which of the following is an industrially important bacterium used in food fermentation? a) <i>Saccharomyces cerevisiae</i> b) <i>Lactobacillus</i> c) <i>Clostridium</i> d) <i>Aspergillus</i>	K1	CO1
	2	Show the primary classification of microorganisms based on their morphology. a) Shape and color b) Shape and size c) Size and reproduction d) Color and reproduction	K2	CO1
2	3	Select the food most prone to spoilage by <i>Staphylococcus aureus</i> . a) Meat b) Eggs c) Salad dressings d) Dairy	K1	CO2
	4	Infer the method that is effective in preventing the spoilage of canned foods. a) Pasteurization b) Vacuum sealing c) Salting d) Freezing	K2	CO2
3	5	Which of the following control measures is effective against bacterial foodborne illness? a) Boiling water b) High-pressure processing c) Freezing food d) Vacuum packing	K1	CO3
	6	Infer the foodborne pathogen that can survive in extreme conditions such as high salt concentrations. a) <i>Bacillus spp.</i> b) <i>Clostridium botulinum</i> c) <i>Staphylococcus aureus</i> d) <i>Shigella spp.</i>	K2	CO3
4	7	Which type of fermentation is used to produce alcoholic beverages like beer and wine? a) Lactic acid fermentation b) Acetic acid fermentation c) Ethanol fermentation d) Butyric acid fermentation	K1	CO4
	8	Interpret which of the following is NOT a type of starter culture. a) Mixed culture b) Defined culture c) Undefined culture d) Contaminat culture	K2	CO4
5	9	What is the key advantage of scaling up a bioreactor? a) Reduces cost per unit product b) Increases oxygen consumption c) Decreases microbial growth d) Slows down the fermentation process	K1	CO5
	10	Interpret the common pre-treatment step in downstream processing. a) Sterilization b) Cell lysis c) Purification d) Filtration	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 industrial importance of yeast in the food industry.	K2	CO1
	(OR)			
	11.b.	Illustrate the morphological classification of foodborne bacteria.		
2	12.a.	Identify the common causes of spoilage in dairy products and effective preservation techniques.	K3	CO2
	(OR)			
	12.b.	Construct a description of the factors that lead to spoilage in miscellaneous foods such as cocoa and coffee.		
3	13.a.	Examine the symptoms and sources of contamination for Clostridium botulinum in food.	K4	CO3
	(OR)			
	13.b.	Analyze the role of Escherichia coli in foodborne illness and its associated symptoms.		
4	14.a.	Develop a definition of fermentation and explain its basic principles.	K3	CO4
	(OR)			
	14.b.	Identify the various types of media used in fermentation and their composition.		
5	15.a.	Categorize the basic design criteria for a fermentor.	K4	CO5
	(OR)			
	15.b.	Analyze the working principle and components of a solid substrate fermenter.		

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	Categorize the role of beneficial bacteria in the fermentation of plant-based foods.	K4	CO1
2	17	List the principles behind food contamination and the preventive measures that can be employed in the food industry.	K4	CO2
3	18	Categorize the types of microbial toxins and their roles in foodborne illness.	K4	CO3
4	19	Examine the determination of Thermal Death Time (TDT) and its relevance to the food industry.	K4	CO4
5	20	Examine in detail the stages in downstream processing.	K4	CO5