PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BVoc DEGREE EXAMINATION MAY 2025
(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 not an intrinsic factor influencing microbial growth in foods? a) pH b) Temperature c) Water activity d) Nutrient content	K1	CO1
	2	Show the microorganism that is primarily responsible for the spoilage of bread. a) *Lactobacillus* b) *Rhizopus* c) *Pseudomonas* d) *Saccharomyces*	K2	CO1
2	3	Find the most common cause of spoilage in fresh fruits and vegetables. a) Enzymatic browning b) Bacterial contamination c) Mould growth d) Chemical additives	K1	CO2
	4	Infer the preventive measure for spoilage of dairy products. a) Pasteurization b) Freezing c) Canning d) Fermentation	K2	CO2
3	5	Name a common symptom of *Shigella spp.* infection. a) Double vision b) Diarrhea with blood c) Muscle paralysis d) Skin rash	K1	CO3
	6	Interpret the type of toxin produced by *Bacillus cereus* in foodborne intoxications. a) Neurotoxin b) Enterotoxin c) Endotoxin d) Exotoxin	K2	CO3
4	7	What does TDT stand for in sterilization? a) Thermal Destruction Time b) Total Destruction Temperature c) Total Development Time d) Thermal Death Time	K1	CO4
	8	Show an example of lactic acid fermentation from the following options. a) Cheese production b) Vinegar production c) Alcohol production d) Yogurt production	K2	CO4
5	9	Recall the type of fermentor commonly used for growing microorganisms in liquid media. a) Solid substrate fermentor b) Submerged culture fermentor c) Batch reactor d) Fixed-bed reactor	K1	CO5

Cont...

5	10	Infer which stage of downstream processing involves increasing the concentration of the product. a) Harvest b) Separation c) Concentration d) Purification	K2	CO5

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.	Illustrate the general characteristics of microorganisms involved in food spoilage.	*K2*	CO1
		(OR)		
	11.b.	Explain how beneficial microorganisms are used in the production of fermented dairy products.		
2	12.a.	Construct an explanation of the spoilage mechanisms in eggs and the ways to extend their shelf life.	K3	CO2
		(OR)		
	12.b.	Organize an explanation of the spoilage process in spices and how they can be preserved for a longer shelf life.		
3	13.a.	Compare the differences between foodborne infections and foodborne intoxications.	K4	CO3
		(OR)		
	13.b.	Examine the control measures for preventing foodborne illnesses caused by *Salmonella spp.*		
4	14.a.	Identify the role of Lactobacillus in fermentation and its importance in food production.	K3	CO4
		(OR)		
	14.b.	Develop the process of inoculum preparation during fermentation and its importance.		
5	15.a.	Compare the advantages and disadvantages of submerged culture fermentors.	K4	CO5
		(OR)		
	15.b.	Examine the process and importance of scale-up in bioreactors.		

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	Analyze how intrinsic and extrinsic factors interact to influence microbial growth in different food systems.	K4	CO1
2	17	Examine the microbial contamination risks associated with sugar-rich foods, including how yeasts contribute to their spoilage.	K4	CO2
3	18	Categorize the pathogenesis, symptoms, and prevention strategies for botulism caused by Clostridium botulinum.	K4	CO3
4	19	Examine the importance of sterilization in the fermentation industry and the methods used to ensure effective sterilization.	K4	CO4
5	20	List and explain the different methods of biomass separation in downstream processing.	K4	CO5

Z-Z-Z END