25FTP103 / 23FTP103

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

MSc DEGREE EXAMINATION DECEMBER 2025
(First Semester)

Branch - **FOOD TECHNOLOGY MANAGEMENT**

FOOD MICROBIOLOGY

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	Identify the intrinsic factor that influences microbial growth in foods. a)pH b)Temperature c)Packaging material d) Storage atmosphere	K1	CO1
	2	Classify temperature as an intrinsic or extrinsic factor affecting microbial growth. a)Intrinsic b)Extrinsic c)Both d)*Neither*	K2	CO1
2	3	Name the yeast species commonly used in alcoholic fermentation. a)*Saccharomyces cerevisiae* b)*Candida albicans* c)*Aspergillus niger* d)*Rhizopusoligosporus*	K1	CO2
	4	Among the following which one is homo- and hetero-fermentative lactic acid bacteria based on their end products. a) Homo: lactic acid; Hetero: lactic acid, CO_2, ethanol b)Homo: ethanol; Hetero: lactic acid c)Homo: acetic acid; Hetero: lactic acid d)Homo: CO_2; Hetero: lactic acid	K2	CO2
3	5	List one direct method used for microbial enumeration. a)Plate count b)PCR c)DGGE d)ELISA	K1	CO3
	6	Interpret the role of PCR in detecting food borne microorganisms. a)Amplifies DNA b) Detects proteins c) Measures turbidity d) Counts colonies	K2	CO3
4	7	Identify the pathogen responsible for Botulism. a)*Clostridium botulinum* b)*Bacillus cereus* c)*Salmonella enteric* d) *Listeria monocytogenes*	K1	CO4
	8	Explain why Norovirus is considered a major cause of foodborne outbreaks. a) Resistant to disinfectants b) Low infectious dose c) Survives in water and food d) High viral shedding	K2	CO4
5	9	Identify the Indian regulatory body that enforces HACCP guidelines. a)ISO b)FSSAI c)WHO d)FAO	K1	CO5
	10	How *E. coli* is important as a microbial indicator of faecal contamination. a) Found in sewage b) Easily detectable c) Indicates water quality d) Present in animal intestines	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 effect of high temperature preservation on microbial activity with reference to D- and Z-values.	K2	CO1
		(OR)		
	11.b.	Classify food spoilage in milk and meat based on microbial agents.		
2	12.a.	Discuss the role of starter cultures in cheese fermentation.	K2	CO2
		(OR)		
	12.b.	Compare homo- and hetero-fermentative lactic acid bacteria.		
3	13.a.	Apply PCR in the detection of pathogens in food samples.	K3	CO3
		(OR)		
	13.b.	Demonstrate the use of membrane filtration in microbial enumeration.		
4	14.a.	Analyse the causes and clinical features of Salmonellosis.	K4	CO4
		(OR)		
	14.b.	Differentiate between *Bacillus cereus* and *Clostridium perfringens* food borne illnesses.		
5	15.a.	Evaluate the role of HACCP in ensuring food safety in processing plants.	K5	CO5
		(OR)		
	15.b.	Justify the use of microbial indicators in sanitation monitoring.		

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	Evaluate the influence of intrinsic and extrinsic factors on food spoilage with suitable examples.	K5	CO1
2	17	Analyse the biochemical pathway of alcoholic fermentation with neat flow diagram.	K4	CO2
3	18	Design a molecular-based protocol for detecting microbial toxins in foods.	K6	CO3
4	19	Assess the public health significance of protozoan food borne diseases.	K5	CO4
5	20	Formulate a sanitation strategy for food industry integrating FSSAI and ISO standards.	K6	CO5

Z-Z-Z END