

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

MSc DEGREE EXAMINATION DECEMBER 2024
(First Semester)

Branch - FOOD TECHNOLOGY MANAGEMENT

FOOD PROCESSING & PRESERVATION 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	What is one of the primary reasons for food deterioration? a) Microbial growth b) Proper storage c) Low temperature d) High pressure	K1	CO1
	2	Show one major application of secondary food processing. a) Cultivating crops b) Canning fruits c) Packaging d) Harvesting	K2	CO1
2	3	Which of the following methods involves heating food to destroy pathogens without sterilization? a) Canning b) Blanching c) Pasteurization d) UHT	K1	CO2
	4	Relate the effect of cryogenic freezing on food preservation. a) Increases flavor b) Slows down spoilage c) Changes color d) Reduces texture	K2	CO2
3	5	Which drying technique removes moisture in a controlled low-air environment? a) Conventional drying b) Air drying c) Supercritical drying d) Vacuum drying	K1	CO3
	6	Show the main purpose of using forced circulation in an evaporator. a) Enhances taste b) Improves aroma c) Increases heat transfer d) Adds nutrients	K2	CO3
4	7	Which enzyme is commonly used in the food industry for its specificity in breaking down proteins? a) Pectinase b) Lactase c) Amylase d) Protease	K1	CO4
	8	Relate one primary role of starter cultures in fermentation. a) To increase temperature b) To initiate microbial growth c) To reduce water content d) To change food color	K2	CO4
5	9	What principle is ultrasonic preservation based on? a) Temperature reduction b) Microbial growth c) High-frequency sound waves d) Magnetic fields	K1	CO5
	10	Show one advantage of nanotechnology in food processing. a) Decreases food cost b) Reduces shelf life c) Enhances nutrient delivery d) Increases spoilage	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 historical developments in food processing and their impact on modern food industries.	K4	CO1
		(OR)		
	11.b.	Justify the need for food preservation and its significance in today's global food industry.	K5	
2	12.a.	Compare different freezing methods and determine their effects on food quality.	K4	CO2
		(OR)		
	12.b.	Evaluate the use of aseptic processing as an alternative to traditional canning in food preservation.	K5	
3	13.a.	Apply the principles of drying in designing a preservation technique for perishable fruits.	K3	CO3
		(OR)		
	13.b.	Examine the various types of evaporators and their effectiveness in food concentration.	K4	
4	14.a.	Develop a fermentation process for dairy products using starter cultures, detailing each step.	K3	CO4
		(OR)		
	14.b.	Discover the enzymatic mechanisms involved in lactose breakdown and discuss its applications.	K4	
5	15.a.	Experiment with microwave and infrared technologies in food processing to achieve rapid cooking.	K3	CO5
		(OR)		
	15.b.	Discover the advantages and limitations of high-pressure processing (HPP) for microbial control.	K3	

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	Criticize the current status of food processing in India, comparing it with international advancements and evaluating areas for improvement.	K5	CO1
2	17	Discover and categorize various methods of heat transfer used in high-temperature preservation, assessing their impact on food texture and flavor.	K4	CO2
3	18	Examine the theory behind conventional and novel drying techniques and compare their effectiveness in prolonging shelf life.	K4	CO3
4	19	List and evaluate the benefits of using enzyme-specific processes in food preservation and processing, particularly for the bioconversion of natural substances.	K4	CO4
5	20	Explain the principle of pulsed electric field (PEF) technology and appraise its applications in extending shelf life while maintaining food quality.	K5	CO5

Z-Z-Z END

Cont...

2	12.a.	Identify the types of starch and its application in food industry.	K3	CO2
	(OR)			
	12.b.	Construct on the natural sugar substitutes available in the market.		
3	13.a.	Analyze on de-naturation of proteins.	K4	CO3
	(OR)			
	13.b.	Classify amino acids with its structure.		
4	14.a.	Compare hydrogenation and winterization of fats.	K4	CO4
	(OR)			
	14.b.	Analyze on physical and chemical properties of lipids.		
5	15.a.	Explain permitted and non-permitted colours.	K5	CO5
	(OR)			
	15.b.	Interpret on anti nutritional factors present in foods and its prevention.		

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	Examine on Phase transition of water molecules.	K4	CO1
2	17	Classify carbohydrates with its structure and properties.	K4	CO2
3	18	Explain functional properties of protein derived from dairy and animal foods.	K5	CO3
4	19	Analyze on chemistry and changes occur during processing of fats and oils.	K4	CO4
5	20	Conclude on aroma compounds and state its properties.	K5	CO5

Z-Z-Z

END

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(AUTONOMOUS)
MSc DEGREE EXAMINATION DECEMBER 2024
(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	What is the basic definition of food preservation? a) The process of making food unhealthy b) The process of maintaining food in its original state c) The process of delaying food spoilage and decay d) The process of increasing food weight	K1	CO1
	2	Which preservation principle involves removing water from food to inhibit microbial growth? a) Dehydration b) Fermentation c) Canning d) Refrigeration	K2	CO1
2	3	Which of the following methods preserves food by converting sugars into alcohol and acids, inhibiting the growth of harmful bacteria? a) Dehydration b) Fermentation c) Freezing d) Canning	K1	CO2
	4	The type of fermentation observed in yeasts is a) acrylic fermentation b) lactic acid fermentation c) pyruvic fermentation d) alcoholic fermentation	K2	CO2
3	5	Isolation of pure culture refers to _____ a) purification of culture b) introduction of inoculum c) separation of a single colony d) to grow microorganisms on a surface	K1	CO3
	6	Which of the following is not a physical method for selection of pure culture? a) Heat treatment b) pH of the media c) Cell size and motility d) Use of dilute media	K2	CO3
4	7	Staphylococcus aureus was isolated by a) Rosenbach b) Louis Pasteur c) Passet d) Sir Alexander Ogston	K1	CO4
	8	Fungal disease in human is caused by _____ a) Inhalation of conidia b) Invasion of mucous membrane c) Contamination of wounds with conidia or mycelial fragments d) All of these	K2	CO4
5	9	What does the acronym FSMA stand for in the context of food safety regulation? a) Food Safety Monitoring Agency b) Food Safety Modernization Act c) Food Safety Management Assessment d) Food Safety Monitoring Accreditation	K1	CO5
	10	What is the purpose of food safety training for food handlers? a) To increase contamination risks b) To improve knowledge and practices related to food hygiene and safety c) To decrease awareness of hazards d) To ignore food safety protocols	K2	CO5

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SECTION - B (35 Marks)

Answer ALL questions

ALL questions carry EQUAL Marks (5 × 7 = 35)

ALL questions carry EQUAL Marks (5 × 7 = 35)

Module No.	Question No.	Question	K Level	CO
1	11.a.	Identify the characteristics of microorganisms present in foods.	K3	CO1
	(OR)			
	11.b.	Select the factors affecting the spoilage of foods.		
2	12.a.	Construct the pathways involved in the fermentation of lactic acid bacteria.	K3	CO2
	(OR)			
	12.b.	Utilize on the microbes associated with fermented vegetables and meat.		
3	13.a.	List the methods used to assess microbial diversity in foods.	K4	CO3
	(OR)			
	13.b.	Classify the analytical methods of detection of microbial toxins.		
4	14.a.	Analyze on animal parasites that can trigger gastro-intestinal infections.	K4	CO4
	(OR)			
	14.b.	Classify bacterial diseases which are responsible to produce infections in human.		
5	15.a.	Explain the microbial indicators of food safety and quality of foods.	K5	CO5
	(OR)			
	15.b.	Interpret on the applications of hurdle technology for controlling microbial growth.		

SECTION - C (30 Marks)

Answer ANY THREE questions

ALL questions carry EQUAL Marks (3 × 10 = 30 Marks)

Module No.	Question No.	Question	K Level	CO
1	16	Analyze on microorganisms involved in food spoilage.	K4	CO1
2	17	Examine on the strain selection for yeast fermentation of foods.	K4	CO2
3	18	Explain the culture dependent methods with its merits and demerits.	K5	CO3
4	19	Defend on the types of diseases occurred due to fungi with its risk factors. State on few preventive techniques.	K4	CO4
5	20	List on the ways of waste treatment and disposal of wastes.	K5	CO5

Z-Z-Z

END

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MSc DEGREE EXAMINATION DECEMBER 2024
(First Semester)

Branch - FOOD TECHNOLOGY MANAGEMENT

INSTRUMENTATION & ANALYTICAL TECHNIQUES

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 property determined by use of bomb calorimeters in food analysis? a. Energy content b. Nutrient composition c. Microbial content d. Sensory properties	K1	CO1
	2	Relate the neutral value of the pH scale. a. Less than 5 b. Equal to 7 c. Equal to 8 d. Less than 9	K2	CO1
2	3	Tell the principle on which NMR spectroscopy is based on: a. Absorption of electromagnetic radiation b. Interaction of magnetic nuclei with a magnetic field c. Mass-to-charge ratio of molecules d. Chemical reactions	K1	CO2
	4	Show TEM operates by: a. Focusing light on a sample b. Scanning a sample with a focused electron beam c. Passing a beam of electrons through a thin sample d. Measuring the electrical conductivity of a sample	K2	CO2
3	5	What is Gas chromatography (GC) used for? a. Separating volatile compounds b. Separating non-volatile compounds c. Separating large molecules d. Separating inorganic ions	K1	CO3
	6	Interpret HPLC is a type of which amongst the following: a. Gas chromatography b. Liquid chromatography c. Mass spectrometry d. Spectrophotometry	K2	CO3
4	7	Relate electrophoresis is based on the principle of: a. Differential adsorption b. Differential partitioning c. Differential migration in an electric field d. Differential volatility	K1	CO4
	8	Outline the most commonly used supercritical fluid for extraction is: a. Water b. Ethanol c. Carbon dioxide d. Hexane	K2	CO4
5	9	Match the principle of immunoassays based on: a. Antigen-antibody binding b. Enzyme activity c. Mass spectrometry d. Spectrophotometry	K1	CO5
	10	Translate the number of colonies counted on a plate is directly proportional to: a. The concentration of bacteria in the original sample b. The volume of the sample plated c. The incubation temperature d. The type of agar used	K2	CO5

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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.	Outline the different parameters measured by texture analyser.	K2	CO1
	(OR)			
	11.b.	Summarise the principle and working of a moisture analyser.		
2	12.a.	Model the components of a fluorescent spectrophotometer.	K3	CO2
	(OR)			
	12.b.	Apply the principle of atomic absorption spectrophotometer in food and explain its applications.		
3	13.a.	Organize the working procedure of adsorption chromatography and write its principle.	K3	CO3
	(OR)			
	13.b.	Construct components of a HPLC and note its working principle.		
4	14.a.	Examine gel filtration technique.	K4	CO4
	(OR)			
	14.b.	Dissect the principle and working procedure of isoelectric focusing electrophoresis.		
5	15.a.	Inspect the ELSA technique and its application.	K4	CO5
	(OR)			
	15.b.	Analyze the importance of microbial enumeration in food products .		

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	Categorise the methods of viscometer and state its application.	K4	CO1
2	17	Inspect the principles and parts of UV-Vis spectroscope diagrammatically.	K4	CO2
3	18	Examine the principle, procedure and parts of a gas chromatography.	K4	CO3
4	19	Infer the solid phase extraction principle & procedure with a diagram.	K4	CO4
5	20	Examine the principle and procedure of differential scanning colorimetry.	K4	CO5

Z-Z-Z END

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MSc DEGREE EXAMINATION DECEMBER 2024
(First Semester)

Branch - FOOD TECHNOLOGY MANAGEMENT

FOOD ENGINEERING

Time: Three Hours

Maximum: 75 Marks

SECTION-A (10 Marks)

Answer ALL questions

ALL questions carry EQUAL marks

(10 × 1 = 10)

Question No.	Question	K Level	CO
1	Which of the following represents newton's equation for viscosity? a) $\tau = \mu(dv/dt)$ b) $\mu = \tau(dv/dt)$ c) $\tau = dv/dt$ d) $\tau = \mu^2(dv/dt)$	K1	CO1
2	Which of the following represents Newtonian fluids? a) Lubricating oils b) Honey c) Rubber suspension d) Synthetic oils	K2	CO1
3	Which of the following is a thermodynamics law? a) Zeroth law of thermodynamics b) Faraday's Law of thermodynamics c) Ideal Gas Law of thermodynamics d) Boyle's Law of thermodynamics	K1	CO2
4	Which of the following is an application of thermodynamics? a) Refrigerators b) Gas compressors c) Power plants d) All of the mentioned	K2	CO2
5	Which of the following is not a classification based on Construction of the heat Exchanger? a) Tubular b) Plate Type c) Multipass d) Regenerative	K1	CO3
6	Which of the following is not an Indirect Contact type heat exchanger? a) Shell and Tube b) Feedwater Heater c) Spray and Tray type d) Plate Type	K2	CO3
7	Which of the following is an advantage of size reduction? a) Enhanced heat/mass transfer b) Intimate contact with certain food items c) Enhanced heat/mass transfer & intimate contact with certain food items d) None of the mentioned	K1	CO4
8	Which of the following is NOT a method used for size reduction? a) Cutting b) Impact c) Burning d) Shear	K2	CO4
9	What are the size reduction laws? a) Rittinger's Law b) Kick's Law c) Bond's Law d) Bond's Law, Rittinger's Law, and Kick's Law	K1	CO5
10	What is the mechanism of nut cracker? a) Impact b) Compression c) Shear d) Tear	K2	CO5

Cont...

SECTION - B (35 Marks)Answer **ALL** questions**ALL** questions carry **EQUAL** Marks

(5 × 7 = 35)

Question No.	Question	K Level	CO
11.a.	Illustrate the applications of Dielectric properties.	K2	CO1
(OR)			
11.b.	Infer the applications of Rheological properties.		
12.a.	Identify the role of Psychrometric properties in drying process.	K3	CO2
(OR)			
12.b.	Identify the uses of steam tables and Mollier diagram.		
13.a.	Apply the role of Heisler charts in food applications.	K3	CO3
(OR)			
13.b.	Identify the role of Molecular diffusion in biological solutions.		
14.a.	Inspect the different stages of crystallization process.	K4	CO4
(OR)			
14.b.	Function of different types of agitators and its usage in food industry.		
15.a.	Examine the role of Pulsed electric field (PEF) in food applications.	K4	CO5
(OR)			
15.b.	Examine the role of microwave applications in foods.		

SECTION - C (30 Marks)Answer **ANY THREE** questions**ALL** questions carry **EQUAL** Marks (3 × 10 = 30)

Question No.	Question	K Level	CO
16	Bring out the Application of engineering properties in food industry.	K4	CO1
17	Describe briefly about the Different types of steam boilers.	K4	CO2
18	Explain the importance of Mass and energy balances in food industry.	K5	CO3
19	Assess the role of Mixing and its types.	K5	CO4
20	Elaborate briefly about the Super critical fluid extraction.	K6	CO5

Z-Z-Z END

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

MSc DEGREE EXAMINATION DECEMBER 2024
(Second Semester)

Branch - FOOD TECHNOLOGY MANAGEMENT

GRAIN SCIENCE 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 the pseudocereal crop? a. Maize b. Rice c. Barley d. Buckwheat	K1	CO1
	2	Show the amino acid deficient in cereals. a. Methionine b. Lysine c. Tyrosine d. Arginine	K2	CO1
2	3	Choose the nutrient deficient in Polished rice. a. Iron b. Thiamine c. Vitamin K d. Selenium	K1	CO3
	4	Infer moisture content considered safe for Rice storage. a. 10 % b. 12 % c. 14 % d. 16 %	K2	CO3
3	5	Name the instrument used to find the resistance of dough to mixing with paddles. a. Alveograph b. Farinograph c. Extensiograph d. Mixograph	K1	CO2
	6	Interpret the purpose of Tempering of Wheat. a. To improve aesthetic quality b. To facilitate easier separation of bran and endosperm c. To enhance flavour d. To facilitate fermentation	K2	CO2
4	7	Find the botanical name of Pearl Millet. a. <i>Triticum aestivum</i> b. <i>Pennisetum glaucum</i> c. <i>Oryza sativa</i> d. <i>Sorghum bicolor</i>	K1	CO4
	8	Relate the stabilization process of oats that inactivates lipase enzyme activity. a. Kilning b. Bricking c. Crystallization d. Freezing	K2	CO4
5	9	What is the primary function of an emery roller in pulse milling? a. Size reduction b. Pitting c. Packaging d. Sorting	K1	CO5
	10	Show the quality index used to detect rancidity of oil. a. Peroxide value b. Baudouin test c. Sugar acid ratio d. Benedict's test	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.	Build an overview of Cereal production and utilization in India.	K3	CO1
	(OR)			
	11.b.	Develop an outline of the effect of processing on the nutritional value of Cereals.		
2	12.a.	Construct a diagram of rice grain and detail the nutritional composition.	K3	CO3
	(OR)			
	12.b.	Identify the utilization of byproducts from rice milling.		
3	13.a.	Inspect the role of leavening agents and flour improvers in baking.	K4	CO2
	(OR)			
	13.b.	Simplify the Bread Making Process.		
4	14.a.	Classify millets and elaborate on the pearling process of millets.	K4	CO4
	(OR)			
	14.b.	List and detail the critical parameter used to evaluate the quality of millet-based products.		
5	15.a.	Recommend strategies to reduce antinutritional factors and toxic substances in pulses.	K5	CO5
	(OR)			
	15.b.	Appraise the methodology for the production of soybean isolates.		

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	Distinguish dry and wet milling of corn with a neat illustration	K4	CO1
2	17	Analyze the milling operations and equipment used in paddy processing.	K4	CO3
3	18	Examine the significance of starch and gluten in the rheological properties of wheat flour dough	K4	CO2
4	19	Evaluate the health benefits of bioactive compounds present in millets. Discuss the process flow diagram of millet-based value-added products	K5	CO4
5	20	Explain the steps involved in edible oil processing from oil seed	K5	CO5

Z-Z-Z

END

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

**MSc DEGREE EXAMINATION DECEMBER 2024
(Second Semester)**

Branch - FOOD TECHNOLOGY MANAGEMENT

**POST-HARVEST MANAGEMENT AND PROCESSING OF FRUIT AND
VEGETABLES**

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 chemical is not permitted for artificial ripening of fruits under FSSAI? a. Ethylene gas b. Calcium carbide gas c. Ethephon d. Ethrel	K1	CO1
	2	Identify the maturing index of cabbage a. Firm head b. Immature and glossy skin c. Skin color changes d. Vegetable size and color	K2	CO1
2	3	Recall the dose of Irradiation in fruits and vegetables, low doses of _____ are used to inhibit sprouting of potatoes and onions a. up to 0.1 kGy b. up to 1 kGy c. up to 10 kGy d. up to 20kGy	K1	CO2
	4	Mention the appropriate sizing mechanism for round citrus fruits a. Mesh screens b. Rope grader c. Sizing roller d. Diverging belts	K2	CO2
3	5	Which of the following drying methods are used to intensify moisture removal and lower drying temperature to protect heat-sensitive foods? a. Tunnel drying b. Foam drying c. Contact drying d. Vacuum drying	K1	CO3
	6	Retorting for fruits require _____ temperature and _____ pressure a. 100°C and 10 – 15 lb/sq inch b. 90°C and 5 – 10 lb/sq inch c. 80°C and 10 – 15 lb/sq inch d. 70°C and 5 – 10 lb/sq inch	K2	CO3
4	7	Name the cooling method which is achieved by immersion or by spraying water on fresh produce. a. Room cooling b. Forced-air cooling c. Hydrocooling d. Vacuum cooling	K1	CO4
	8	Frozen peas shall be stored at a. - 15°C or below b. - 18°C or below c. -10°C or below d. 0°C or below	K2	CO4
5	9	Which of the following technique is used to remove scum or foam in marmalade? a. Addition of sugar b. Sheet test c. Addition of edible oil d. Addition of paraffin wax	K1	CO5
	10	Soup powders shall not contain more than _____% moisture (m/m) a. 4 b. 5 c. 8 d. 10	K2	CO5

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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.	Identify the factors affecting the respiration rate and suggest strategies to control gas exchange rates of fruits and vegetables.	K3	CO1
	(OR)			
	11.b.	Develop 10 strategies to prevent post-harvest losses in horticulture commodities.		
2	12.a.	Plan various physical and chemical postharvest treatments for fresh produce.	K3	CO2
	(OR)			
	12.b.	Determine the various types of cleaning and sorting operations for oranges.		
3	13.a.	Illustrate the processes of canning fresh peas.	K4	CO3
	(OR)			
	13.b.	Examine the factors affecting aseptic packaging and storage of horticulture products.		
4	14.a.	Compare cryogenic freezing and freeze drying.	K4	CO4
	(OR)			
	14.b.	Examine the role of IQF in fruit and vegetable preservation.		
5	15.a.	Explain the manufacturing technology of tomato puree.	K5	CO5
	(OR)			
	15.b.	Appraise the role of different stages of sugar cookery and temperatures involved for crystalline and non-crystalline sugar products.		

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	Appraise the metabolic changes that occur in fruits and vegetables during the ripening process.	K5	CO1
2	17	Explain the impact of minimal processing of fruits and vegetables on the physical, chemical and microbial degradation.	K5	CO2
3	18	Compare the applications of different types of drying techniques on fruit and vegetable products.	K4	CO3
4	19	Analyze the impact of CAP and MAP on storage and packaging of fruits and vegetables.	K4	CO4
5	20	Elaborate on the role of ingredients, technological and quality aspects of pickles.	K6	CO5

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

MSc DEGREE EXAMINATION DECEMBER 2024
(Second Semester)

Branch - FOOD TECHNOLOGY MANAGEMENT

**DAIRY PROCESS ENGINEERING & PRODUCT PROCESS
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 National Dairy Development Board (NDDB) and Bureau of Indian Standards (BIS) together developed a dedicated a. Dairy cow logo b. Dairy Mark logo c. Dairy weblink d. Dairy platform	K1	CO1
	2	 can be characterized as a Newtonian fluid for practical purposes. a. Whipped cream b. Drinkable yoghurt c. Skimmed milk d. All of the above	K2	CO1
2	3	Recall the FSSAI standards for percentage of fat and SNF in recombined milk is a.3.5 and 9.0 b.3.0 and 9.0 c.3.0 and 8.5 d.3.5 and 8.5	K1	CO2
	4	The viscosity of evaporated whole milk will depend on the a. Degree of forewarming b. Homogenization conditions c.Type of stabilizers used d.All of the above	K2	CO2
3	5	Identify the process in butter making responsible for the phase reversal of the emulsion. a. Hardening b. Churning c.Working d.Salting	K1	CO3
	6	What is the heating temperature used in the industrial production of butteroil? a.95 to 98 ⁰ C b. 72 to 75 ⁰ C c. 63 to 65 ⁰ C d. 40 to 48 ⁰ C	K2	CO3
4	7	Name the Traditional milk-based sweet that has a very short shelf life, is kept at room temperature and is to be consumed on the same day as per FSSAI guidance. a. Kalakand b. Milk Burfi, c. Rabri Rasmalai d.Khoa	K1	CO4
	8	Identify the partially heat-desiccated cereal-based dairy product. a. Pindi b. Peda c. Gulab jamun d. Kheer	K2	CO4

Cont...

5	9	Recall the enzyme used to coagulate milk a. Peroxidase b. Rennet. c. Lipase d. Catalase	K1	CO5
	10	Which of the below given product is an acid coagulated indigenous dairy product? a. Kalakand b. Basundi c. Chhana d. Dhap	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.	Compare and contrast the quality standards for i) raw and packaged milk ii) standardized and toned milk.	K3	CO1
		(OR)		
	11.b.	Outline the protocol for clot on boiling and dye reduction test.		
2	12.a.	Identify the methods of determining lethality based on the thermal processing of milk.	K3	CO2
		(OR)		
	12.b.	Construct the flow diagram for spray dried milk powder and write short notes on the drying process employed in the processing of this product.		
3	13.a.	Analyse the quality and grades of cream.	K4	CO3
		(OR)		
	13.b.	Infer the stepwise procedure for production of butter.		
4	14.a.	Classify the types of khoa and give the FSSAI standards for these products.	K4	CO4
		(OR)		
	14.b.	List the various challenges in the traditional milk product sector and the measures taken to overcome these challenges.		
5	15.a.	Evaluate the various unit operations involved in manufacturing of Sandesh.	K5	CO5
		(OR)		
	15.b.	Conclude on the physiochemical changes that occur during the manufacture of paneer.		

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	Analyse the effect of processing on the constituents of milk.	K4	CO1
2	17	Categorize the different types of pasteurization and explain the HTST techniques and its advantages in milk processing.	K4	CO2
3	18	Explain the ghee making process adopted in India, the AGMARK standards for ghee and the common adulterants in ghee.	K4	CO3
4	19	Select a value added khoa based confectionary product and write about the product description, method of manufacture and its unique selling properties.	K5	CO4
5	20	Interpret the microbial and enzymatic transformation of milk to cheese.	K5	CO5

Z-Z-Z END

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

MSc DEGREE EXAMINATION DECEMBER 2024
(Second Semester)

Branch-FOOD TECHNOLOGY MANAGEMENT

FOOD TOXICOLOGY AND SAFETY

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	_____ refers to deterioration of physical and chemistry properties of food a) Food safety b) Food spoilage c) Food security d) Food standards	K1	CO1
	2	In 1963 _____ established a commission for setting up International Food Standards a) FAO b) ISO c) CODEX d) BIS	K2	CO1
2	3	A critical control point (CCP) is a point at which _____ can be applied and a food safety hazard can be prevented (a) processing (b) control (c) preservation (d) work flow	K1	CO2
	4	_____ destroys insects, fungi and bacteria a) Fungicides b) Fumigants c) Herbicides d) Insecticides	K2	CO2
3	5	Which of the following toxicity can occur due to single exposure? a). Acute toxicity b) Sub-acute toxicity c) Sub-chronic toxicity d) Chronic toxicity	K1	CO3
	6	The effect of a particular substance on an organism is used to determine which of the following property? a) Toxicity b) Metabolism c) Gluconeogenesis d) Glycogenesis	K2	CO3
4	7	_____ is an example of preservative a) Calcium sorbate b) Potassium oxalate c) Sodium hydroxide d) Potassium chromate	K1	CO4
	8	A toxic substance produced by biological system is specially referred to as a ----- a) toxicant b) toxin c) xenobiotic d) poison	K2	CO4
5	9	Raw food treated with excessive levels of fertilizers ,pesticides are a source of _____ contamination. a) Allergic b) Biological c) Chemical d) Physical	K1	CO5
	10	_____ is the ultimate criterion of the desirability of any food product? a) Quality b) Quantity c) Acceptability d) Appearance	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.	List the objectives of food safety.	K4	CO1
	(OR)			
	11.b.	Analyze the role of water activity in food safety.		
2	12.a.	Interpret the factors leading to food borne diseases.	K2	CO2
	(OR)			
	12.b.	Outline on hygiene and sanitation of milk industry.		
3	13.a.	Build the classification of food toxicants.	K3	CO3
	(OR)			
	13.b.	Identify the natural toxicants with example.		
4	14.a.	Infer on thermal decomposition of fat and lipids.	K2	CO4
	(OR)			
	14.b.	Illustrate on carcinogen in smoked foods.		
5	15.a.	Explain the metallic contamination in food.	K4	CO5
	(OR)			
	15.b.	Evaluate the biological toxicants in food.		

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 factors which affect the food safety.	K5	CO1
2	17	Explain on food biosecurity and food terrorism.	K5	CO2
3	18	Analyze the different natural occurring toxicants with example.	K4	CO3
4	19	Determine the importance of food irradiation.	K5	CO4
5	20	List the role of food standards to find the adulterant in foods.	K4	CO5

Z-Z-Z END

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

MSc DEGREE EXAMINATION DECEMBER 2024
(Second Semester)

Branch - FOOD TECHNOLOGY MANAGEMENT

ANIMAL FOOD PRODUCTS 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	Name the chemical process that is responsible for rigor mortis in meat. a) Glycolysis b) Lipolysis c) Hydrolysis d) Proteolysis	K1	CO1
	2	Show which of the following pathogen is commonly associated with undercooked poultry. a) Escherichia coli b) Listeria monocytogenes c) Salmonella typhi d) Staphylococcus aureus	K2	CO1
2	3	What is the temperature recommended for freezing poultry meat? a) -10°C b) -18°C c) 0°C d) -5°C	K1	CO2
	4	Infer in which of the following products dried egg whites are commonly used a) Ice cream b) Scrambled eggs c) Salad dressings d) Baked goods	K2	CO2
3	5	Find the type of sausage that is made using a fermentation process a) Hot dog b) Salami c) Kielbasa d) Breakfast sausage	K1	CO3
	6	Relate the primary application of meat extract in foods a) Flavouring agent in soups b) For direct consumption c) In grilling d) In salads	K2	CO3
4	7	Recall the ingredient added to surimi to improve texture a) Cornstarch b) Flour c) Gelatin d) Soy protein	K1	CO4
	8	Show which of the following is a critical control point in fish processing a) Using preservatives such as sodium nitrate b) Adding artificial colorants c) Ensuring icing and temperature control d) Reducing fat content	K2	CO4
5	9	Which of the following is a valuable protein derived from poultry feathers? a) Keratin b) Hemoglobin c) Myosin d) Actin	K1	CO5
	10	Infer in which food product gelatin is added a) Custard b) Confectionery c) Milk shakes d) Mayonnaise	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.	Illustrate the importance of water holding capacity in meat.	K2	CO1
	(OR)			
	11.b.	Summarise on the grading of meat.		
2	12.a.	Organise the steps in preparation of sausages and illustrate.	K3	CO2
	(OR)			
	12.b.	Develop a short note on the frozen egg products available in the market.		
3	13.a.	Make use of a flow chart to explain the steps involved in canning of meat.	K3	CO3
	(OR)			
	13.b.	Identify the procedure of meat analogue processing and write about it.		
4	14.a.	List the surimi based products and explain about any one product in detail.	K4	CO4
	(OR)			
	14.b.	Compare the features and advantages of natural and genetically modified fishes.		
5	15.a.	Examine the products prepared using egg shell and elaborate on any one product.	K4	CO5
	(OR)			
	15.b.	Distinguish the preparation and use of fish liver oil.		

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	Compare the slaughter house operations taking place in meat processing industries.	K4	CO1
2	17	Analyse the techniques used in preservation of poultry meat.	K4	CO2
3	18	List the processed meat products and explain in detail about any two products.	K4	CO3
4	19	Categorise the preserved marine products based on commercial importance and explain about any two in detail.	K4	CO4
5	20	Examine the uses and preparation of the byproducts of meat products.	K4	CO5

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

MSc DEGREE EXAMINATION DECEMBER 2024
(Second Semester)

Branch - FOOD TECHNOLOGY MANAGEMENT

MAJOR ELECTIVE COURSE – I : NEW PRODUCT DEVELOPMENT

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	Choose the method by which the problem analysis can be done in new product development a) Attribute listing b) Visual aid c) SWOT analysis d) Brainstorming	K1	CO1
	2	Infer which product life cycle stage, has low and slow sales a) Introductory b) Growth c) Maturity d) Decline	K2	CO1
2	3	Relate the type of innovation in which Coca Cola Cherry Coke belongs a) Incremental b) Disruptive c) Radical d) Sustainable	K1	CO2
	4	Which among these is a gate decision that does not authorize the movement of the project to the next stage? a) Go b) No Go c) Recycle d) Hold	K2	CO2
3	5	Find the equipment used to measure the distance of a food flows under its own weight in a given time period a) Line spread b) Bostwick consistometer c) Magness taylor d) Tensile strength	K1	CO3
	6	Classify moisture to its the quality parameter test given below a) Sensory b) Chemical c) Physical d) Microbiology	K2	CO3
4	7	Label the stage which reduces the wide range of raw materials and processing variables to the input variables affecting important product qualities. a) Ball-park b) Screening c) Optimization d) Scale-up	K1	CO4
	8	Infer which among these comes under unregistered IPR a) Copyright b) Patents c) Trade marks d) Design rights	K2	CO4
5	9	Match the turn over of a food business operator not crossing the limit is subject to basic registration a) 5 lakhs b) 10 lakhs c) 12 lakhs d) 16 lakhs	K1	CO5

Cont...

5	10	Relate the type under sustainability trend a) Novel fibres b) Prebiotics c) Food safety data management d) Waste reduction	K2	CO5
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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.	Model the product life cycle of product development with its features.	K3	CO1
	(OR)			
	11.b.	Identify on the causes for food product success and failure with examples and justify.		
2	12.a.	Model open and closed types of innovation and distinguish between them.	K3	CO2
	(OR)			
	12.b.	Organize and explain the national systems of innovation and its importance.		
3	13.a.	Classify the guidelines to conduct sensory evaluation.	K4	CO3
	(OR)			
	13.b.	Examine the chemical and microbial requirements in shelf-life testing.		
4	14.a.	Categorize the components of marketing mix and segmentation.	K4	CO4
	(OR)			
	14.b.	Classify on the classification and significance IPR.		
5	15.a.	Explain on the product launch and justify.	K5	CO5
	(OR)			
	15.b.	Conclude on the trends and opportunities in developing innovative products.		

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	Examine the stages of product development and discuss the product strategy measures.	K4	CO1
2	17	Inspect the process and benefits of stage-gate process and explain in detail.	K4	CO2
3	18	Examine on different rating evaluation tests in detail.	K4	CO3
4	19	Criticize and discuss on the product prototypes.	K5	CO4
5	20	Determine on setting up commercialization of final product testing and explain.	K5	CO5

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

MSc DEGREE EXAMINATION DECEMBER 2024
(Third Semester)

Branch - FOOD TECHNOLOGY MANAGEMENT

FOOD FERMENTATION & INDUSTRIAL ENZYMOLOGY

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 among the following does not influence the fermentation process? a) Temperature b) Substrate c) Pressure d) pH	K1	CO1
	2	Show the organism that is involved in the production of Acetic acid. a) <i>Saccharomyces cerevisiae</i> b) <i>Acetobacter aceti</i> c) <i>Lactobacillus Spp</i> d) <i>Leuconostoc Spp</i>	K2	CO1
2	3	Recall the part of the fermenter that introduces air into the fermenter liquid medium. a) Heating element b) cooling element c) Agitator d) Sparger	K1	CO2
	4	Infer the typical alcohol content of commercial kombucha from the following. a) 5% b) 0.5% or less c) 10% d) 8%	K2	CO2
3	5	What is the term for the region on the enzyme where the substrate binds? a) Active site b) Inhibitory site c) Binding domain d) Allosteric site	K1	CO3
	6	Relate the primary function of the enzyme from among the following. a) To provide energy b) To catalyze biochemical reaction c) To transport molecules d) To store genetic information	K2	CO3
4	7	Which among the following rice is produced through genetic engineering? a) Black rice b) Bamboo rice c) Golden rice d) Red rice	K1	CO4
	8	Infer the alternative name for artificial enzymes from the following. a) Enzyme mimic b) Proenzyme c) Isoenzyme d) Enzyme modifier	K2	CO4
5	9	Find the enzyme that is responsible for the breakdown proteins into amino acids. a) Ligase b) Transferase c) Hydrolase d) Protease	K1	CO5
	10	Show which among the following is the composition of high fructose corn syrup? a) fructose, glucose, water b) fructose, galactose, water c) fructose, lactose, water d) fructose, maltose, water	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.	Construct the principles involved in fermentation and explain the factors influencing fermentation process.	K3	CO1
		(OR)		
	11.b.	Identify the phases in Microbial growth kinetics.		
2	12.a.	Develop the steps involved in the production of Tempeh and Kombucha .	K3	CO2
		(OR)		
	12.b.	Identify the role and importance of Prebiotic and probiotic foods in nutrition.		
3	13.a.	Categorize the various enzymes based on IUB method of classification.	K4	CO3
		(OR)		
	13.b.	Examine the nature and importance of Lactate dehydrogenase with emphasis on its detection methods.		
4	14.a.	Analyze the tools involved in Enzyme engineering.	K4	CO4
		(OR)		
	14.b.	Examine the concepts of Genetic engineering and its application.		
5	15.a.	Assess the steps involved in the production of protease and its application in industries.	K5	CO5
		(OR)		
	15.b.	Explain the techniques involved in Enzyme immobilization.		

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	Plan out the Batch and continuous culture process in fermentation.	K3	CO1
2	17	Construct a neat diagram of a fermenter explaining its parts and basic functioning of the fermenter.	K3	CO2
3	18	Categorize the properties and functions of Coenzymes based on chemical characteristics.	K4	CO3
4	19	Analyze graphically the factors effecting velocity of enzyme catalyzed reaction.	K4	CO4
5	20	Appraise the general techniques involved in isolation and purification of industrial enzymes.	K5	CO5

Z-Z-Z

END

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

MSc DEGREE EXAMINATION DECEMBER 2024
(Third Semester)

Branch – FOOD TECHNOLOGY MANAGEMENT

FOOD PACKAGING 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	What does the primary purpose of food labeling? a) To advertise the product b) To provide nutritional information c) To ensure food safety d) To attract consumers	K1	CO1
	2	Show the type of packaging material commonly used for snack food. a) Glass b) Paper c) PET d) Aluminum foil	K2	CO1
2	3	What test measures a packaging material's ability to withstand punctures? a) Tensile strength test b) Tear-resistant test c) Puncture resistance test d) Burst strength test	K1	CO2
	4	Recall the test that detects the presence of microorganisms on packaging materials. a) Total viable count test b) Pathogen detection test c) Sterility test d) Sanitization test	K2	CO2
3	5	Select the packaging material used for packing yoghurt. a) Polyethylene b) Polypropylene c) Polyvinyl chloride d) Polystyrene	K1	CO3
	6	Show the type of plastic is commonly used for packaging meat products. a) Polyethylene b) Polypropylene c) Polyvinyl chloride d) Polystyrene	K2	CO3
4	7	Relate smart packaging is _____ a) Packaging with integrated sensors b) Packaging with RFID tags c) Packaging with barcode labels d) Packaging with QR codes	K2	CO4
	8	Which technology is used in smart packaging for inventory management? a) Radio frequency identification b) Near Field Communication c) Bluetooth low energy d) Wi-Fi	K1	CO4
5	9	Which component is responsible for sterilizing the packaging material? a) UV lamp b) Gamma radiation c) Hydrogen peroxide sterilizer d) Steam sterilizer	K1	CO5
	10	Show the type of vacuum packaging machine used for packaging large quantities of products. a) Chamber vacuum machine b) External vacuum machine c) Vacuum sealer d) Continuous vacuum machine	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.	Choose different forms of packaging materials used in food industry & explain its applications.	K3	CO1
		(OR)		
	11.b.	Identify and describe the characteristics of polymers used in food packaging.		
2	12.a.	Choose the appropriate testing Parameters for glass container and metal container to ensure safety and shelf – life of packaged foods.	K3	CO2
		(OR)		
	12.b.	Experiment with various methods used to assess the safety of food packaging materials.		
3	13.a.	Analyze the different packaging materials & techniques used for dairy products.	K4	CO3
		(OR)		
	13.b.	Assume the role of packaging material and specific requirements to retain the freshness of fruits & vegetables.		
4	14.a.	Elaborate the merits and demerits of active packaging.	K4	CO4
		(OR)		
	14.b.	Discuss the types of edible packaging film.		
5	15.a.	Explain the principle of a vacuum packaging machine.	K2	CO5
		(OR)		
	15.b.	Give a note on the application of the bottling machine in food industry.		

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	Explain the importance of food labeling and discuss the key information that must be included on food labels according to fssai regulations.	K4	CO1
2	17	Explain the factors influencing shelf-life evaluation of packaged foods and discuss the methods used to determine shelf life.	K5	CO2
3	18	Discuss various packaging materials for dairy products.	K4	CO3
4	19	Explain the process of retort pouch packing in detail and give a note on its application.	K5	CO4
5	20	Write a detailed note on the machine used for the modified atmosphere and shrink-packaging machines.	K4	CO5

Z-Z-Z

END

Cont...

SECTION - B (35 Marks)Answer **ALL** questions**ALL** questions carry **EQUAL** Marks (5 × 7 = 35)

Question No.	Question	K Level	CO
11.a.	Identify and explain the various types of operation management used in food industry.	K3	CO1
	(OR)		
11.b.	Experiment with different layout designs and develop a layout plan for food production facility.		
12.a.	Examine the significance of industrial management in the food processing industry.	K4	CO2
	(OR)		
12.b.	Survey the key elements of a successful international marketing strategy.		
13.a.	Explain break even analysis.	K3	CO3
	(OR)		
13.b.	Identify the importance of financial record keeping for small businesses.		
14.a.	Categorize overhead cost based on behavior and controllability.	K4	CO4
	(OR)		
14.b.	Examine job costing and state features of job costing.		
15.a.	Recommend marketing strategies for the startup of a food business.	K5	CO5
	(OR)		
15.b.	Explain how market clearing price is determined.		

SECTION -C (30 Marks)Answer **ANY THREE** questions**ALL** questions carry **EQUAL** Marks (3 × 10 = 30)

Question No.	Question	K Level	CO
16	Explain how transportation costs and infrastructure affect the location of food processing plants.	K4	CO1
17	Discuss the regulatory framework governing food exports in India, including the role of FSSAI, APEDA, and Ministry of Commerce and Industry.	K4	CO2
18	Classify the types of budgeting.	K4	CO3
19	Enumerate various purchasing methods.	K5	CO4
20	Recommend a comprehensive marketing budget plan for a new product launch, including objectives, market research and budget allocation.	K5	CO5

Z-Z-Z END

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

MSc DEGREE EXAMINATION DECEMBER 2024
(Third Semester)

Branch – FOOD TECHNOLOGY MANAGMENT

MAJOR ELECTIVE COURSE – II FOOD QUALITY AUDITING

Time: Three Hours

Maximum: 75 Marks

SECTION-A (10 Marks)

Answer ALL questions

ALL questions carry EQUAL marks

(10 × 1 = 10)

Question No.	Question	K Level	CO
1	Which of the following PRPs would most directly address food safety in a food production facility? a) Employee dress code b) Pest control c) Inventory management d) Supplier audits	K1	CO1
2	What is the primary goal of Total Quality Management (TQM)? a) To reduce costs b) To improve customer satisfaction c) To increase production speed d) To expand market share	K2	CO1
3	Which of the following is a standard often associated with QMS implementation? a) ISO 9001 b) ISO 14001 c) ISO 45001 d) ISO 50001	K1	CO2
4	Which of the following is a key requirement of an ISO 22000-compliant quality management system for laboratories? a) Establishing a marketing strategy b) Documenting the food safety management system c) Reducing operational costs d) Limiting employee involvement in decision-making	K2	CO2
5	Tracking and verifying the journey of food products is the primary purpose of in the food chain. a) Marketing strategies b) Production costs c) Increase production speed d) Food traceability	K1	CO3
6	Which of the following is a key requirement of the BRC food safety standard? a) Regular employee outings b) Minimal supplier audits c) Comprehensive documentation of processes d) Flexible production schedules	K2	CO3
7	Which of the following is a common requirement for a food auditor's qualification? a) A degree in environmental science b) Experience in food safety management systems c) Certification in marketing d) Knowledge of agricultural practices	K1	CO4
8	Which of the following is NOT a key principle of Good Documentation Practice? a) Use of clear and legible handwriting b) Avoiding the use of abbreviations c) Documenting information only when convenient d) Ensuring documents are reviewed and approved	K2	CO4
9	Which of the following authorities is responsible for enforcing the provisions of the FSSA 2006 in India? a) Food and Drug Administration (FDA) b) Food Safety and Standards Authority of India (FSSAI) c) Ministry of Agriculture d) Central Bureau of Investigation (CBI)	K1	CO5
10	What is the main purpose of EC regulations concerning food safety? a) To enhance marketing strategies b) To ensure a high level of consumer protection and food safety c) To simplify import/export procedures d) To reduce production costs	K2	CO5

Cont...

SECTION - B (35 Marks)

Answer ALL questions

ALL questions carry EQUAL Marks

(5 × 7 = 35)

Question No.	Question	K Level	CO
11.a.	List the steps involved in conducting a thorough hazard analysis during the HACCP implementation process.	K4	CO1
	(OR)		
11.b.	Analyze, how do organizations evaluate the effectiveness of their risk mitigation strategies?		
12.a.	Identify the significance of QMS Implementation auditing practices.	K3	CO1
	(OR)		
12.b.	Experiment with the clauses and elements of GLP.		
13.a.	Build the key components that constitute an effective Food Safety Management System.	K3	CO2
	(OR)		
13.b.	Construct the role of international food standards in promoting sustainable practices within the food supply chain.		
14.a.	Analyze how food quality auditing contributes to enhanced consumer safety and trust in food products?	K4	CO3
	(OR)		
14.b.	Infer on the core principles of objectivity and impartiality in food audits.		
15.a.	Give your Opinion on Mandatory and voluntary standards.	K5	CO5
	(OR)		
15.b.	Explain the duties and functions of food Authority.		

SECTION - C (30 Marks)

Answer ANY THREE questions

ALL questions carry EQUAL Marks

(3 × 10 = 30)

Question No.	Question	K Level	CO
16	Appraise the 5S methodology and its importance in food processing environments.	K5	CO4
17	Inspect the importance of quality management and requirements specific to food testing laboratory operations.	K4	CO2
18	Analyze the benefits of achieving FSSC 22000 certification for food businesses.	K4	CO3
19	Criticize the three types and explain the significance of food audit.	K5	CO4
20	Examine the penalties or actions can FSSAI impose on food businesses that make misleading claims in their advertising, and how does the regulatory body monitor and enforce these standards?	K4	CO5

Z-Z-Z

END