23FTP317

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

MSc DEGREE EXAMINATION DECEMBER 2025
(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	According to FSSAI regulations, which of the following information is NOT mandatory on a food label? a) Name of the Food b) Net Quantity c) Vegetarian/Non-Vegetarian Logo d) Price of the Product	K1	CO1
	2	Infer the packaging material that offers excellent barrier properties to gases and moisture, is tamper-resistant, but is brittle and heavy? a) Low-Density Polyethylene (LDPE) b) Glass c) Paperboard d) Aluminum Foil	K2	CO1
2	3	Which of the following is a CRUCIAL factor in the safety assessment of food packaging materials? a) The cost of the raw material. b) The transparency of the material. c) The potential for migration of substances from the packaging into the food. d) The printing quality on the material.	K1	CO2
	4	The "Bursting Strength" test is most related to the evaluation of: a) Glass containers b) Metal cans c) Corrugated Fibre Board Boxes d) Plastic films	K2	CO2
3	5	Aseptic packaging is used for products like fruit juices, which involves: a) Sterilizing the product and the package separately and then filling in a sterile environment. b) Freezing the product before packaging. c) Packaging under a vacuum only. d) Using only glass as the packaging material.	K1	CO3
	6	The primary packaging challenge for snacks like potato chips is to protect against: a) Light-induced vitamin loss. b) Moisture gain and oxidative rancidity. c) High-pressure compression. d) High-temperature spoilage.	K2	CO3
4	7	Which innovation in packaging involves the use of sensors or indicators to monitor and provide information about the condition of the food or its environment? a) Modified Atmosphere Packaging (MAP) b) Active Packaging c) Intelligent Packaging d) Retort Packaging	K1	CO4
	8	Choose the package that changes colour if the product has been exposed to temperatures above a critical threshold. a) Tamper-Evident Feature b) Oxygen Scavenger c) Time-Temperature Indicator (TTI) d) Antimicrobial Film	K2	CO4
5	9	A Thermoform-Fill-Seal (TFS) machine is a type of Form-Fill-Seal system where: a) Pre-formed cups are fed into the machine for filling and sealing. b) The packaging web is heated and vacuum-formed into cavities before filling. c) Only flexible pouches are made and filled. d) The machine is used exclusively for bottling liquids.	K1	CO5
	10	The primary purpose of a double seamer in a canning unit: a) Sterilize the empty cans. b) Create a hermetic seal between the can body and the lid (end). c) Fill the product into the cans. d) Label the finished cans.	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.	Compare the characteristics, application, merits, and demerits of glass and metal (tinplate/aluminum) as food packaging materials.	K4	CO1
		(OR)		
	11.b.	Differentiate between Primary, Secondary, and Tertiary packaging with suitable examples from the food industry. Also, state one key function of each.		
2	12.a.	Explain the concept of packaging design and discuss the key factors that contribute to an effective packaging design, excluding graphics and colour.	K3	CO2
		(OR)		
	12.b.	Describe the key testing parameters used for evaluating the quality of glass containers and metal cans.		
3	13.a.	Compare and contrast the packaging requirements for fresh milk (e.g., pasteurized) and UHT (Ultra-High Temperature) processed milk. Justify the choice of common packaging materials for each.	K3	CO3
		(OR)		
	13.b.	Discuss the key factors to consider when packaging fresh fruits and vegetables. Explain the role of Modified Atmosphere Packaging (MAP) in extending their shelf-life.		
4	14.a.	Differentiate between Active Packaging and Intelligent Packaging with suitable examples. Discuss the principle and one advantage of each.	K4	CO4
		(OR)		
	14.b.	Explain the principle of Retort Pouch Packaging. List three advantages it holds over traditional metal cans for packaging ready-to-eat meals.		
5	15.a.	Describe the working principle of a Vertical Form-Fill-Seal (VFFS) machine. List three common food products packaged using this system.	K5	CO5
		(OR)		
	15.b.	Explain the difference between Shrink Packaging and Stretch Packaging. What is the primary purpose of each system? Name one common application for each in the 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	Analyze the purpose and various types of labels used in the food industry. Elaborate on the mandatory labelling requirements as per FSSAI regulations.	K4	CO1
2	17	Describe the important testing methods for evaluating the strength and durability of corrugated fibre board boxes. Discuss the significance of graphics and colour in the design of a food package.	K4	CO2
3	18	Describe the ideal packaging system for (a) frozen fish and (b) spices. Your answer should include the primary spoilage mechanisms, packaging requirements, and the justification for the chosen packaging materials.	K4	CO3
4	19	Compare and contrast Modified Atmosphere Packaging (MAP) and Controlled Atmosphere Packaging (CAP). Discuss the principles, advantages, disadvantages, and two applications for each.	K5	CO4
5	20	Describe the sequence of operations in a typical canning unit for a solid-liquid food product like peas in brine. Briefly explain the function of the major equipment involved in each step.	K5	CO4

Z-Z-Z END