23FTP423

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

MSc DEGREE EXAMINATION MAY 2026
(Fourth Semester)

Branch – **FOOD TECHNOLOGY MANAGEMENT**

PLANT LAYOUT DESIGN AND MANAGEMENT

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	Plant design in food industries primarily ensures _____ (a) Aesthetic appearance (b) Increased paperwork (c) Hygienic and efficient production (d) Manual dependency	K1	CO1
	2	The feasibility study stage mainly evaluates _____ (a) Technical and economic viability (b) Paint selection (c) Office furniture (d) Staff uniforms	K2	CO1
2	3	Which of the following is a major factor in plant location decision? (a) Wall color (b) Availability of raw materials (c) Logo design (d) Canteen menu	K1	CO2
	4	The layout suitable for job-oriented production is _____ (a) Product layout (b) Combination layout (c) Fixed position layout (d) Process layout	K2	CO2
3	5	A pilot plant is mainly intended for _____ (a) Advertising new products (b) Export promotion (c) Process testing and scale-up (d) Final commercial distribution	K1	CO3
	6	The structural base and waterproof membrane are components of _____ (a) Roof construction (b) Drain system (c) Plant flooring (d) Electrical layout	K2	CO3
4	7	Sensors in food industries are used to measure _____ (a) Market share (b) Employee attendance (c) Production cost (d) Physical and chemical parameters	K1	CO4
	8	IoT in food processing industries enables _____ (a) Real-time monitoring and control (b) Manual documentation (c) Increased labour requirement (d) Reduced automation	K2	CO4
5	9	Break-even point is the stage when _____ (a) Profit is maximum (b) Variable cost is zero (c) Total cost equals total revenue (d) Production stops	K1	CO5
	10	Working capital includes _____ (a) Land and building cost (b) Machinery installation (c) Insurance premium only (d) Raw materials and wages	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 stages involved in the food plant design process from project idea to feasibility study.	K2	CO1
		(OR)		
	11.b.	Summarize the general design considerations required for constructing a food processing plant.		
2	12.a.	Examine the factors influencing plant location decisions in food industries.	K4	CO2
		(OR)		
	12.b.	Analyze the different types of plant layouts with suitable examples.		
3	13.a.	Illustrate the utilities required in a food plant and their operational significance.	K3	CO3
		(OR)		
	13.b.	Apply building design principles to ensure hygienic construction in food industries.		
4	14.a.	Explain the types of sensors used in food industries and describe their applications.	K5	CO4
		(OR)		
	14.b.	Determine how IoT systems improve monitoring and control in food processing industries.		
5	15.a.	Differentiate fixed capital and recurring expenses with suitable examples.	K5	CO5
		(OR)		
	15.b.	Assess the break-even point and its significance in financial decision-making.		

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 principles and stages involved in food plant design from project idea to feasibility analysis.	K4	CO1
2	17	Explain the factors influencing plant location and layout planning in food industries with suitable justification.	K2	CO2
3	18	Identify the role of utilities and building design requirements in ensuring efficient food plant operations.	K3	CO3
4	19	Assess the impact of automation technologies and IoT applications in modern food industries.	K5	CO4
5	20	Develop a comprehensive financial and layout design proposal for a food processing plant including break-even analysis.	K6	CO5

Z-Z-Z END