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PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

MSc DEGREE EXAMINATION DECEMBER 2025
(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	In fluid mechanics, which type of fluid follows Newton's law of viscosity? a) Non-Newtonian fluids b) Newtonian fluids c) Thixotropic fluids d) Rheopectic fluids	K1	CO1
2	Which property of food is used in microwave heating? a) Thermal conductivity b) Electric property c) Optical property d) Acoustic property	K2	CO1
3	In boiler classification, a Lancashire boiler is an example of a) Fire tube boiler b) Water tube boiler c) Packaged boiler d) High-pressure boiler	K1	CO2
4	The psychrometric chart is primarily used to determine a) Heat transfer rate in fluids b) Moisture content and air-water vapour properties c) Thermal conductivity of air d) Specific volume of dry air	K2	CO2
5	Fourier's law is used to describe a) Convective heat transfer b) Radiative heat transfer c) Conductive heat transfer d) Mass transfer	K1	CO3
6	Convective heat transfer coefficient is generally higher in a) Laminar flow b) Turbulent flow c) Vacuum d) Radiation	K2	CO3
7	_____ equipment is commonly used for disintegration of fibrous materials a) Hammer mill b) Ball mill c) Centrifugal dryer d) Plate heat exchanger	K1	CO4
8	In crystallization, the stage at which crystals start forming is called as a) Saturation point b) Nucleation c) Supercooling d) Evaporation	K2	CO4
9	Ultrafiltration is used to separate a) Dissolved salts b) Large molecules like proteins and polysaccharides c) Volatile compounds d) Gases	K1	CO5
10	In differential distillation, separation of components occurs due to a) Differences in density b) Differences in boiling points c) Differences in solubility d) Differences in particle size	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.	Determine the importance of rheological properties in food processing.	K3	CO1
		(OR)		
	11.b.	Examine the different methods for flow measurement and viscosity measurement in food fluids.		
2	12.a.	Show the adiabatic mixing of two air streams with the help of psychrometric principles.	K4	CO2
		(OR)		
	12.b.	Classify the steam boilers.		
3	13.a.	Differentiate the steady state and unsteady state conduction with food-related examples.	K2	CO3
		(OR)		
	13.b.	Elaborate the molecular diffusion in solids.		
4	14.a.	Explain the traditional methods of size reduction in food processing.	K6	CO4
		(OR)		
	14.b.	Categorize the types of cleaners with their principle.		
5	15.a.	Determine the concept of vapor-liquid equilibrium and its significance in distillation processes.	K5	CO5
		(OR)		
	15.b.	Asses the principle of pervaporation.		

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	Derive the equation of continuity and Bernoulli's equation.	K3	CO1
2	17	Specify the use of steam tables and Mollier diagram for determining enthalpy and specific volume of steam.	K6	CO2
3	18	Summarize the steps to perform mass and energy balance in a food processing system.	K5	CO3
4	19	Figure out the impact of automation and digitalization in material handling systems in food industries with respect to efficiency, cost, and safety.	K4	CO4
5	20	Outline in detail on the novel separation technologies.	K1	CO5

Z-Z-Z END