

Register No : _____

THE KAVERY ENGINEERING COLLEGE

(An Autonomous Institution)

B.E/B.TECH DEGREE END SEMESTER THEORY EXAMINATIONS, NOV/DEC 2025

Fifth Semester

Agricultural Engineering

AI3002 – Food and Dairy Engineering

Regulations - 2021

Duration : 3 Hrs

Maximum : 100 Marks

PART - A (ANSWER ALL QUESTIONS) (Marks 10*2=20)

<i>Q.No</i>	<i>Questions</i>	<i>BTL</i>	<i>CO</i>	<i>Marks</i>
1.	Give two advantage of freeze concentration in foods.	L1	1	2
2.	What is meant by aseptic packaging?	L1	1	2
3.	State the significance of water activity in microbial growth.	L2	2	2
4.	What is osmotic dehydration?	L1	2	2
5.	Why are storage tanks important in the dairy industry?	L2	3	2
6.	State the principle of pasteurization.	L2	3	2
7.	Name the equipment used in ice cream manufacture.	L1	4	2
8.	Mention two function of CIP in dairy industry.	L2	4	2
9.	Define pulsed electric field (PEF) processing in food.	L1	5	2
10.	Why is regulation of nanotechnology in food important?	L2	5	2

PART - B (ANSWER ALL QUESTIONS) (Marks 5*16 = 80)

Q.No	Questions		BLT	CO	Marks
11.	a	Discuss any three methods of thermal processing of foods.	L4	1	16
		Or			
	b	Discuss the UHT processing of milk with neat sketches.	L4	1	16
12.	a	i Recommend any two methods to reduce the water activity in food in detail.	L2	2	8
		ii Elaborate the sorption behavior of food.	L3	2	8
		Or			
	b	i Discuss the three types of dryers used for dehydration of food.	L2	2	10
		ii Explain why dehydration is considered an important method of food preservation.	L3	2	6
13.	a	Explain the physical, chemical, thermal and rheological properties of milk and discuss their importance in processing and storage.	L4	3	16
		Or			

	b	Compare Low Temperature Long Time (LTLT), High Temperature Short Time (HTST) and Ultra High Temperature (UHT) methods of pasteurization with respect to principle, equipment, temperature-time combinations, and product quality.	L4	3	16
14.	a	Explain the purpose, principle and methods of cream separation.	L2	4	16
		Or			
	b	Explain the manufacturing process with flowchart for any two dairy by-products.	L2	4	16
15.	a	Write notes on Irradiation, Cold Plasma, and Ultrasound as non-thermal methods of food preservation.	L2	5	16
		Or			
	b i	Discuss the applications of nanotechnology in food packaging and food products with examples.	L2	5	8
	ii	Analyze the environmental impacts of nanomaterial in the food sector.	L3	5	8