GURU NANAK INSTITUTE OF TECHNOLOGY
An Autonomous Institute under MAKAUT
2021
FOOD PROCESS TECHNOLOGY –III (Milk and milk products) (BACKLOG)
FT601

TIME ALLOTTED: 3 HOURS **FULL MARKS: 70**

The figures in the margin indicate full marks.
Candidates are required to give their answers in their own words as far as practicable

GROUP – A
(Multiple Choice Type Questions)

Answer any ***ten*** from the following, choosing the correct alternative of each question: **10×1=10**

			Marks	CO No
1.	i)	Lactose is disaccharide containing a) Glucose & Fructose b) Glucose & Galactose c) Glucose & Glucose d) Glucose & Maltose	1	CO1
	ii)	The index organism for Pasteurization is a) Staphylococcus aureus b) Bacillus subtillis c) Coxelliaeburnettii d) Leuconostoc citrovorum	1	CO3
	iii)	Name the sugar present in milk: a) Glucose b) Galactose c) Lactose d) Fructose	1	CO1
	iv)	The greenish yellow colour of milk whey is due to pigment a) Lycopene b) Riboflavin c) Carotene d) Melanoidin	1	CO1
	v)	Yellow color of milk fat is due to presence of? a) Vitamin D b) Carotinoids c) Calcium d) Folic Acid	1	CO1
	vi)	The full form of FDV is a) Float Division Value b) Flow Diversion Value c) Flow diversion Valve d) Float Division Valve	1	CO2

vii)	_____ is an example of Chelating agent in dairy industry: a) Tetraphosphate b) Citric acid c) Casein d) Chlorine	1	CO2
viii)	Name the sugar present in milk: a) Glucose b) Galactose c) Lactose d) Fructose	1	CO1
ix)	Enzyme used for making Cheese: a) Rennin b) papain c) pepsin d) protease	1	CO5
x)	Butter milk is a fluid product resulting from the manufacture of? a) Cheese b) Yogurt c) Ice cream d) Butter	1	CO5
xi)	The yoghurt is made from a) Lactobacillus bulgaricus b) Streptococcus thermophilus c) Penicilium d) mixed culture of (a) and (b)	1	CO5
xii)	Principal protein in milk is: a) Albumin b) Lactalbumin c) Casein d) Lactoglobulin	1	CO1

GROUP – B
(Short Answer Type Questions)

Answer any ***three*** from the following: **3×5=15**

		Marks	CO No
2.	Briefly describe Vacuum Pasteurization and Stassanization with proper diagram.	5	CO3
3.	Discuss about the physico-chemical properties of milk	5	CO1
4.	Name the following: • The enzymes present in milk • Alkalis used as detergent • Sanitizer used • Pigments that gives greenish colour to whey • Phospholipids present in milk	5	CO2

5.		Explain briefly the methods of UHT processing.	5	CO3
6.		Discuss the ways by which disease can be cab transmissible through milk	5	CO1

GROUP – C
(Long Answer Type Questions)
Answer any ***three*** from the following: **3×15=45**

			Marks	**CO No**
7.	a)	Explain the major constituents of milk.	8	CO2
	b)	Define Homogenization. What are the merits and demerits of Homogenization?	4	CO2
	c)	Briefly explain the manufacturing method of Whey Powder	3	CO2
8.	a)	Write down the properties of detergents used in dairy industry. Discuss the CIP method of milk pasteurizer.	9	CO5
	b)	Name the main classes of chemical sanitizers. Explain the mode of action of any two chemical sanitizers.	6	CO5
9.	a)	Define Ice-cream. What are the Food and Nutritive value of Ice-cream?	4	CO5
	b)	Give the detailed Flow diagram of Ice-cream manufacture.	7	CO5
	c)	What are the main properties of the Ice-cream Mix? What is Soft ice cream?	4	CO5
10.	a)	10000kg of 7% milk is received; 40% cream is separated; Skim Milk tests 0.1% fat; Buttermilk tests 0.5% fat; amount of buttermilk= kg. cream-1.20 X fat in cream; misc fat losses are 0.5% of total fat received in whole milk; butter contains 80.5% fat; weight allowance is 10g for 1kg pack. How much butter is packed for sale? What is the percentage overrun?	9	CO5
	b)	Explain the significance of the following steps is manufacturing of Cheddar Cheese. i. Adding Starter culture(ripening) ii. Salting iii. Paraffining	6	CO5
11.	a)	Define Butter according to PFA standard. Explain the methods of manufacture along with a flow diagram.	6	CO5
	b)	Fat in churn= 850kg. Butter is to contain 2% salt. How much salt should be added to the churn?	3	CO5
	c)	What is the significance of: i) Cooling and ageing of cream ii) Ripening of Butter iii) Churning of Butter	6	CO5