

**LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034****M.Sc. DEGREE EXAMINATION – FOOD CHEMISTRY AND FOOD PROCESSING****THIRD SEMESTER – NOVEMBER 2023****PFP3MC02 – DAIRY AND BEVERAGE PROCESSING**

Date: 01-11-2023

Dept. No. 

Max. : 100 Marks

Time: 01:00 PM - 04:00 PM

**SECTION A – K1 (CO1)****Answer ALL the questions****(5 x 1 = 5)****1 MCQ**

- a) Owing to their large particle size or molecular mass, ....., ..... and ..... do not have a significant effect on the freezing point of milk.
- lactose, casein micelles and lactoglobulin.
  - chlorides, casein micelles and lactalbumin.
  - fat globules, casein micelles and whey proteins.
  - casein micelles, citrates and whey proteins.
- b) The fat and SNF percentage in standardized milk is
- 3.0 and 8.5
  - 4.0 and 9.0
  - 4.5 and 8.5
  - 4.5 and 9.0
- c) Which of the following microorganisms are used in yoghurt culture?
- Lactobacillus bulgaricus* and *Streptococcus thermophilus*
  - Lactobacillus acidophilus* and *Streptococcus thermophilus*
  - Lactobacillus bulgaricus* and *Lactococcus lactis*
  - None of the above.
- d) Which of the following is a partially oxidized tea?
- green tea
  - black tea
  - oolong tea
  - white tea
- e) The amount of calcium carbonate present in hard water is .....
- less than 50 ppm
  - 50 – 100 ppm
  - 100 – 200 ppm
  - above 200 ppm

**SECTION A – K2 (CO1)****Answer ALL the questions****(5 x 1 = 5)****2 Answer the following.**

- a) List the dairy product preferences of consumers in 2023.
- b) What is clarification?

c)	Write the principle involved in milk separation.
d)	Identify the appropriate packaging system for roasted and ground coffee.
e)	Define non-carbonated natural mineral water.
<b>SECTION B – K3 (CO2)</b>	
	<b>Answer any THREE of the following (3 x 10 = 30)</b>
3	Interpret the nutritive value of milk for its use as a common nutritional intervention programme across the globe.
4	Elaborate on pasteurization as an essential thermal processing operation.
5	Describe the khoa making process.
6	Explain the commercial production of beer.
7	Examine the role of fermentation and roasting of cocoa in chocolate production.
<b>SECTION C – K4 (CO3)</b>	
	<b>Answer any TWO of the following (2 x 12.5 = 25)</b>
8	Relate the significance of the following properties with regard to dairy processing based on the values given below: i) Titrable acidity greater than 0.22% lactic acid ii) pH of milk above 7 iii) Negative OR potential iv) specific gravity of 1.019 v) Refractive index of 1.331
9	Highlight the common defects observed in butter.
10	Infer the importance of rennet and discuss the conversion of milk to cheese.
11	Illustrate the manufacturing process of ripe coffee bean to coffee powder.
<b>SECTION D – K5 (CO4)</b>	
	<b>Answer any ONE of the following (1 x 15 = 15)</b>
12	Evaluate the role of various ingredients in the production of carbonated soft drinks.
13	Appraise the measures taken by the packaged drinking water companies to implement the mandatory certification of BIS.
<b>SECTION E – K6 (CO5)</b>	
	<b>Answer any ONE of the following (1 x 20 = 20)</b>
14	i) Compile the various challenges faced by the dairy sector and the government initiatives designed to promote dairying in India. (10 marks) ii) Explain the role of the various ingredients used in ice cream preparation. (10 marks)
15	i) Prepare a detailed project report for setting up an efficient milk collection center in a village that has around 100 dairy farmers. (15 marks) ii) Write a note on reuse CIP system. (5 marks)

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