



LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

M.Sc. DEGREE EXAMINATION – FOOD CHEMISTRY AND FOOD PROCESSING

THIRD SEMESTER – NOVEMBER 2022

PFP 3501 – DAIRY AND BEVERAGE PROCESSING

Date: 23-11-2022

Dept. No.

Max. : 100 Marks

Time: 09:00 AM - 12:00 NOON

PART – A

| Q. No | Answer ALL questions | (10 x 3 = 30 Marks) |
|-------|--|---------------------|
| 1. | List any six major dairy cooperatives and six private dairy players in India. | |
| 2. | Briefly discuss refractive index of milk. | |
| 3. | Explain any six unit operations employed in dairy processing. | |
| 4. | What is clot on boiling test? | |
| 5. | Draw the flow chart for production of paneer. | |
| 6. | Differentiate between cream and malai. | |
| 7. | Write about any three properties of beverages. | |
| 8. | What are the standard requirements for Fruit drinks as per FSSAI regulation and the amendment made? | |
| 9. | Classify the bottled water business in India divided broadly into segments in terms of cost. | |
| 10. | Write the packaging and labelling requirements for packaged drinking water and mineral water as prescribed in the FSS (Packaging & Labelling) Regulations. | |

PART – B

Answer ALL the questions (5 x 8 = 40 Marks)

| | | |
|-----|--|--|
| 11. | (a) Write a note on the factors that can influence the composition and quantity of milk produced by milch animals. (OR) | |
| | (b) Write about density and specific gravity as significant physiochemical properties of milk. | |
| 12. | (a) Elaborate on HTST and LTLT pasteurization techniques and its advantages in milk processing. (OR) | |
| | (b) Define the FSSAI specification for i) standardized, toned and double toned milk ii) skimmed and full cream milk. | |
| 13. | (a) Describe the stepwise procedure for ice cream manufacture. (OR) | |
| | (b) Explain coagulation, syneresis and ripening in cheese making. | |
| 14. | (a) Comment on the fermentation and distillation method used in beverage manufacture. (OR) | |
| | (b) In recent years, a number of different energy drinks have been introduced in the Indian market. Discuss the manufacturing of energy drinks and the safety concerns of this growing market. | |

| | | | |
|---------------------------------|-----|---|----------------------------|
| 15. | (a) | Write the consumers perspective on use and concerns about bottled water in India. (OR) | |
| | (b) | Brief out on Isotonic solutions and its various benefits. | |
| PART – C | | | |
| Answer any TWO questions | | | (2 x 15 = 30 Marks) |
| 16. | (a) | Describe the colligative properties of milk. | (10 marks) |
| | (b) | Calculate SNF, TS and comment on the quality of these milk samples Farm A: CLR of 28 and 3.0 % fat. Farm B: CLR of 22 and 2.2 % fat. | (5 marks) |
| 17. | (a) | Elaborate on the setting up of a milk collection system. | (10 marks) |
| | (b) | Write the protocol for Gerber and lactometer test to determine fat and total solids in milk. | (5 marks) |
| 18. | (a) | Comment on the Reuse CIP operation followed in a dairy industry. | (5 marks) |
| | (b) | Describe the ghee making process adopted in India, the AGMARK standards for ghee and the common adulterants in ghee. | (10 marks) |
| 19. | | The alcoholic beverage sector in India is growing rapidly. Explain the process flow for conversion of grapes to wine. Outline the salient features of Food Safety and Standards (Alcoholic Beverages) Regulations, 2018 that all the marketers, manufacturers and other stakeholders in the alcoholic beverages industry need to be aware and follow in the alcoholic beverage manufacturing process. | |

\$\$\$\$\$\$