LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

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

THIRD SEMESTER – **APRIL 2019**

FP 3809– CHEMISTRY OF DAIRY PRODUCTS

Date: 05-04-2019 Dept. No. Max. : 100 Marks

Time: 09:00-12:00

Part A

Answer ALL the questions. 10 x 2 =20 marks

1. List any eight physiochemical properties of milk.
2. What are the buffering compounds present in milk?
3. Define the mutarotation effects of Lactose.
4. Write a note on Thermoplasticity of lactose.
5. What is meant by iso electric precipitation of milk proteins?
6. Highlight the aspects of maintaining salt concentration in milk.
7. Define Milk Fat Globular membrane (MFGM).
8. Briefly denote the structural hierarchy in Proteins.
9. Define cheese.
10. What is COB test?

Part B

Answer any EIGHT questions. 8x5=40 marks

11. Write short notes on specific gravity and refractive index of milk.
12. i.Differentiate between natural and developed acidity. (2 marks)
    ii.How do you determine acidity in milk? (3 marks)
13. Explain the solubility characteristics of α and β lactose.
14. Explain the hydrolysis of primary caseins by Plasmin.
15. Briefly narrate the role of vitamins in milk considering with any one milk product as example.
16. Describe the role of exogenous enzymes in food analysis.
17. Write a note on Fatty acids profile of Milk lipids.
18. Enumerate the following techniques
    i) Ultra filtration (2.5 Marks)
    ii) Gel filtration (2.5 Marks)
19. Explain the determination of lactose concentration by Polarimetry and redox reactions.
20. Write a note on factors influencing salt concentration of milk.
21. Discuss the process of rennet coagulation in cheese making.
22. Give the protocol for determination of SNF using a lactometer.

Part C

Answer any FOUR questions. 4x 10=40 marks

23. Elaborate on the freezing curve and freezing characteristics of milk.
24. Discuss oxidation reduction potential as an important property in milk.
25. Enumerate the steps involved in lactose crystallization.
26. Explain the heterogeneity of milk proteins.
27. Write a detailed note on Maillard reactions and Amadori rearrangements of Glycosylamine.
28. Write the benefits of fermented milk and discuss the biochemical changes in conversion of milk to yoghurt.

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