



LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

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

THIRD SEMESTER – APRIL 2018

FP 3808- INORGANIC, PHYSICAL & CHEM. COMPONENTS OF FOOD

Date: 26-04-2018
Time: 09:00-12:00

Dept. No.

Max. : 100 Marks

Part A

Answer ALL the questions. Each carries TWO marks

(10 x 2 = 20) marks

1. Mention the various factors affecting the ionic bond formation.
2. Define water binding potential.
3. Write any four important characteristics of bound water.
4. What is meant by lyophilization?
5. What are polydentate ligands? Give an example.
6. Define interfacial tension.
7. What are globular proteins? Give an example.
8. Tabulate the differences between endergonic and exergonic reactions.
9. Mention the various factors affecting the absorption of calcium by the biological systems.
10. Write the nutritional aspects of any two minerals.

Part B

Answer ANY EIGHT questions. Each carries FIVE marks

(8 x 5 = 40) marks

11. Discuss the interaction of water with hydrophilic and hydrophobic solutes.
12. Derive an expression for measuring the water activity in food.
13. Explain the importance of moisture-sorption isotherm in the determination of water activity.
14. Write a note on dietary allowances for mineral nutrients.
15. How will you calculate the equilibrium constant using Kirchhoff's equation.
16. Describe the various factors affecting the formation of chelates.
17. Explain air drying and deep freezing technique.
18. Write a note on following a) Critical micelle concentration b) sedimentation
19. Discuss the various types of food gels and their applications in food.
20. How will you determine the total amount of dietary fiber in food by Englyst-Cumming method?
21. Describe any two methods involved in the ash analysis of food.
22. Write a note on microwave drying and IR drying methods in moisture analysis.

Part C

Answer ANY FOUR questions. Each carries TEN marks

(4 x 10 = 40) marks

23. a) Discuss any five key concepts of molecular mobility approach to determine the stability of food.
- b) Write a note on any two weak inter molecular forces. (6+4)
24. a) Discuss the DLVO theory.
- b) a) Describe any five factors affecting the stability of food . (5+5)
25. a) List out the various factors affecting the mineral composition in food.
- b) Explain the bio functional properties of nickel and copper. (4+6)
26. a) Write the principle and various steps involved in gravimetric analysis.
- b) Tabulate the differences between post precipitation and co precipitation. (6+4)
27. Describe any two methods used to estimate the relative shelf life of food.
28. a) How will you estimate the amount of calcium present in food by complexometric titration?
- b) Describe the importance of Dietary fiber in food. (6+4)