



**LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034**

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

**THIRD SEMESTER – NOVEMBER 2016**

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

Date: 03-11-2016  
Time: 09:00-12:00

Dept. No.

Max. : 100 Marks

**Part A**

**Answer all the questions.**

**10 x 2 =20 marks**

1. Define bound water.
2. What is called state diagram in food?
3. What is meant by dipole-dipole interaction? Give an example.
4. Why does the surface tension and boiling point of water are abnormally high?
5. What is meant by post precipitation in gravimetric analysis?
6. What are hydro colloids?
7. How does the decomposition of other food constituents affects the moisture analysis?
8. What are the types of dispersed system?
9. Give any two biological importances of coupled reactions.
10. What is order of reactions?

**Part B**

**Answer any eight questions.**

**8 x 5= 40 marks**

11. Tabulate the differences between ionic and covalent compounds.
12. Illustrate the three dimensional crystalline structure of ice.
13. Derive an expression for measuring the water activity in food.
14. Write a note on dietary allowances for mineral nutrients.
15. Describe the principle and procedure of dry ashing method in ash analysis of food.
16. Explain the bio functional properties of calcium in food.
17. How will you carry out the moisture analysis of food using microwave oven drying method?
18. Describe in detail the major components of dietary fibres.
19. Explain the importance of moisture-sorption isotherm in food analysis.
20. Discuss the some important consequences dispersed system.
21. Write a note on following i) critical micelle concentration (CMC) ii) Contact Angles
22. Explain the polysaccharides food gels.

**Part C**

**Answer any four questions.**

**4 x 10 =40 marks**

23. Describe the interaction of water with hydrophilic, hydrophobic and ionic solutes.
24. How will you determine the amount of moisture present in food using Karl-Fischer titration method?
25. What are chelates? Describe in detail the various factors affecting the stability of chelates.
26. Explain any five key concepts of molecular mobility approach to determine the stability of food.
27. i) Write a note on Lewis theory of acids and bases with examples. (4)  
ii) What is the significance of entropy of chemical reaction in food? (6)
28. Briefly explain following colloidal interactions :  
i) van der Waals ii) Electric double layer (5+5)

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