



LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

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

FIRST SEMESTER – NOVEMBER 2016

16PFP1MC01 - FOOD CHEMISTRY - I

Date: 02-11-2016
Time: 01:00-04:00

Dept. No.

Max. : 100 Marks

Part A

Answer all the questions.

10 x 2 =20 marks

1. What is called entrapped water?
2. What is water activity in terms of food safety?
3. Define enzymatic hydrolysis.
4. Mention any four factors influencing emulsification.
5. What are first order and zero order reaction? Give an example for each type.
6. Differentiate reversible and irreversible inhibitors.
7. Write equations for the conversion of glucose to gluconic acid and glucaric acid.
8. What are gels? Mention any two of its functional characteristics.
9. What are derived lipids? Give an example.
10. Mention any four factors affecting the rate of auto oxidation reaction of lipids.

Part B

Answer ANY EIGHT questions.

8 x 5= 40 marks

11. Discuss the solute effects of water in detail.
12. Describe the key concepts underlying molecular mobility in food.
13. Explain the following
 - a) Sulphitolysis
 - b) Plastein reaction of protein.
14. What is alkylation? How it is involved in reaction of protein in food?
15. Discuss the quaternary structure of protein in detail.
16. Explain the mechanism on steady state rate kinetics of enzymes.
17. What are the roles of endogenous enzyme in food quality?
18. Write a note on lipolysis of fats.
19. Describe the application of Isomerizati and pectin in food industries.
20. Describe the unique Isomeriz of starch among other carbohydrates.
21. Write a note on Isomerization of carbohydrates with an example.
22. Explain the procedure involved in the estimation of iodine value of lipids.

Part C

Answer ANY FOUR questions.

4 x 10 =40 marks

23. How will you evaluate the protein nutritive value by PER and NPOR methods?
24. Explain the primary, secondary and tertiary structure of proteins.
25. a) Give in detail about the classification and nomenclature of enzymes.
b) Explain the use of enzymes in improving nutritional quality in food with suitable examples. **(5+5)**
26. Describe the following
 - (a) Role of enzymes in brewing process.
 - (b) Choice of antioxidants in lipid analysis. **(5+5)**
27. a) Write a note on Maillard browning reaction of carbohydrates.
b) How will you modify starch using cross linking method? Mention any four of its advantages.
28. a) Write the principle of flash point, smoke point and fire point of a lipid.
b) Describe the mechanism of auto oxidation reaction of lipids. **(6+4)**
