



LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

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

FIRST SEMESTER – NOVEMBER 2017

17/16PFP1MC01 - FOOD CHEMISTRY - I

Date: 02-11-2017
Time: 01:00-04:00

Dept. No.

Max. : 100 Marks

Part A

Answer **ALL** questions

(10 X 2 = 20)

1. Mention any four factors affecting water binding potential.
2. Define bound water in food? Mention any two of its properties.
3. What are epimers? Give an example.
4. Define isoelectric point in protein.
5. What are polysaccharides? Give an example.
6. How does the plastein reaction improve the nutritional quality of protein?
7. Mention any four general characteristics of enzymes.
8. What is meant by lyophilisation?
9. Define Reichert meisel value of lipids.
10. What is meant by smoke point and fire point of lipids.

Part B

Answer **ANY EIGHT** questions

(8 X 5 = 40)

11. Describe the procedure for the estimation of water content in food by Karl-Fisher titration method.
12. Write a note on ice – freezing and over drying.
13. Discuss the classification of enzymes based on their biochemical properties.
14. What are alditols? Give an equation for the formation of sorbitol from monosaccharides.
15. Describe the important application of CMC and MCC in food industries.
16. How does phosphorylation reaction modify the structure of protein?
17. Describe the primary and secondary structural analysis of protein.
18. Write a note on rancidity of lipids.
19. Describe the function of chlorophyllase and polyphenol oxidase on food.
20. Describe the mechanism for non enzymic browning reaction of carbohydrates.
21. Mention any three factors affecting the activity of enzymes in food.
22. Describe the various factors affecting the stability of protein structure.

Part – C

Answer **ANY FOUR** questions

(4 X 10 = 40)

23. a. Explain any two methods used to measure the water activity in food.

b. Write the importance of sorption isotherm. (5+5)

24. a. What are polypeptides? Describe the various steps involved in the synthesis of polypeptides.

b. How will you determine the emulsifying property of protein using emulsifying activity index? (6+4)

25. a. Describe the role of enzymes in sweeteners and dairy products.

b. Define iodine value and Polanski value of lipids (6+4)

26. a. Derive Michael- Menton equation for an enzyme catalyzed reaction.

b. Mention any four important characteristics of anti-oxidants. (6+4)

27. What is meant by foaming capacity of a protein? Describe any four environmental factors affecting foam formation and foam stability.

28. a. Explain the mechanism for the action of anti-oxidants on lipids.

b. Describe the importance of Xanthan gums and carrageenan

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