LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

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

FIRST SEMESTER – **APRIL 2019**

18/17PFP1MC01– FOOD CHEMISTRY - I

Date: 02-04-2019 Dept. No. Max. : 100 Marks

Time: 01:00-04:00

Part A

Answer all the questions. 10 x 2 =20 marks

1. Define bound water in food. Write any two of its important properties.
2. Mention any four factors affecting water binding potential.
3. What are hydrocolloids?
4. Give an equation for a Maillard browning reaction.
5. What are pseudo plastic and thixotropic polysaccharide solutions?
6. How does the phosphorylation reaction modify the structure of protein?
7. Mention any four important physiochemical properties of aminoacids.
8. How does the pectic enzyme affect the texture of food?
9. Define Turbitity point of lipids.
10. What is called plastin reaction?

Part B

Answer any eight questions. 8x5=40 marks

11. Explain in detail, the importance of sorption isotherms in determining the water activity of food.
12. Write a note on Vacuum freeze drying.
13. Derive an expression for the kinetics of enzyme-catalyzed reaction.
14. Describe the role of various enzymes in baking and brewing industries.
15. Explain the various types of enzyme inhibition reactions.
16. Write a note on auto-oxidation reaction in lipids
17. Discuss the importance of xanthan gums and carrageenan in food industries.
18. List out any five heterocyclic compounds generated during the processing of food.
19. Describe the primary and secondary structural analysis of protein.
20. How does the hydrogen bonding and disulphide bonds enhance the stability of protein structure?
21. Write a note on lipolysis.
22. Describe the thermal non-oxidisable reactions of saturated fatty acids.

Part C

Answer any four questions. 4x 10=40 marks

23. Define water activity. Describe the nine key concepts involved in Mm(Molecular mobility) and Food Stability.

24. a) Write a note on hydrolysis of poly saccharides.

b) What is meant by gelatinization reaction? (6+4)

25. a) Describe the role of enzymes as processing aids in dairy industries.

b) Explain various factors affecting the concentration of enzymes in food. (6+4)

26. What are anti-oxidants? Describe any five of its important characteristics and mechanism of its action.

27. a) What are peptides? Describe the synthesis of dipeptides using cysteine and alanine.

b) Mention various factors affecting the emulsifying property of proteins. (5+5)

28. a) Explain modification of protein by sulphitolyis reaction.

b) Discuss the role of endogeneous enzymes in maintaining the quality of food. (5+5)

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