LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

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

FIRST SEMESTER – **NOVEMBER 2018**

FP 1806– ORGANIC CHEMISTRY OF FOOD - I

Date: 25-10-2018 Dept. No. Max. : 100 Marks

Time: 01:00-04:00

Part A

Answer all the questions. 10 x 2 =20 marks

1. What are reducing and non-reducing sugars? Give an example for each.
2. What is meant by chirality? Mention the conditions required for a molecule to be chiral.
3. What are phospholipids? Give an example.
4. Define Polanski value.
5. Write any four physiochemical properties of aminoacids.
6. What is meant by emulsifying activity index?
7. Mention any four factors affecting the concentration of enzymes in food.
8. What is meant by competitive inhibition in enzyme kinetics?
9. Draw the structure of vitamin E
10. Write the principle of HPLC technique.

Part B

Answer any eight questions. 8 x 5 = 40 marks

11. Write a note on hydrolysis of polysaccharides.
12. How will you estimate the amount of carbohydrate present in a food sample using Nelson-Somoyogi method?
13. What are erythro and threo isomers? Explain with an example.
14. Explain the effect of lipolysis on fatty acids.
15. What are anti-oxidants? Mention any five of its important characteristics.
16. Define saponification value. How will you determine the saponification value of oil?
17. Describe in detail the primary and secondary structure of proteins.
18. Discuss any two biological methods used to estimate the nutritive value of protein molecules.
19. How will you modify the nature of a protein by alkylation and acylation?
20. Derive Michael –Menton equation for the enzyme catalytic reaction.
21. Describe the role of endogenous enzymes in determining the quality of food products.
22. Discuss the degradation mechanism of Vitamin A.

Part C

Answer any four questions. 4 x 10 = 40 marks

23. a) Write a note on any two dietary fibers.

    b) How will you determine the total amount of starch present in pectin?

24. a) How will you modify the nature of fats by hydrogenation method?

    b) Mention any five factors affecting the consistency of fatty acids in food.

25. a) What are peptides? How are they formed?

    b) Describe any two forces involved in fixing the stability of protein structure.

26. a) What are reversible and irreversible inhibitors?

    b) Describe in detail the importance of mellaloenzymes in food industries.

27. What are water soluble vitamins? Discuss their stability and degradation mechanism of any two Vitamins.

28. Describe the instrumentation and application of HPLC in analysis of vitamins.

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