



LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

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

FOURTH SEMESTER – APRIL 2015

FP 4806 - CHEMISTRY OF FOOD ADDITIVES

Date : 17/04/2015

Dept. No.

Max. : 100 Marks

Time : 09:00-12:00

PART-A

Answer all the questions.

(10 × 2 = 20 marks)

1. What are the differences between chemical pickling and fermentation pickling?
2. How does vacuum packing help in the preservation of food products?
3. Give the general structure of flavones. How does it change its colour from acidic to basic mediums?
4. How does chlorophyll produce bright green colour under acidic conditions?
5. What is noot-katone? Give two of its uses.
6. Name of chemicals responsible for bitter almond and organge odours.
7. What are the constituent sugar units present in malt sugar? Give the structures.
8. What is cyclamate? What are its characteristics?
9. What are anticaking agents? Give an example.
10. List the names of four common foods containing anticaking agents.

PART-B

Answer any eight questions.

(8 × 5 = 40 marks)

11. What are chelating agents? Give two examples. Explain their functions in the preservation of food?
12. Give the structure of sorbic acid. How does it help in the preservation of food products?
13. What are the advantages of using food additives in food products? Explain.
14. What is betalain? Give its structure. What are its characteristics?
15. What is the influence of pH on chlorophyll in food processing?
16. Write a note on fish flavours with suitable examples.
17. Explain the pathway for the synthesis of linolenic acid products in tomato flavour.
18. Give the structure of saccharin. How is it synthesised? What are its characteristics?
19. What are the advantages and disadvantages of using artificial sweeteners?
20. What are leavening agents? Explain their role in food chemistry with suitable examples.
21. What are the characteristics of anticaking agents? Discuss the effect of pH on anticaking agents.
22. Explain the nutritional needs of yeast in doughs.

PART-C

Answer any four questions.

(4 × 10 = 40 marks)

23.a) Explain the mechanism of action of antioxidants.

b) How is rancidity in food products caused? Explain the mechanism.

24.a) What are the significance of food preservatives and additives? Explain.

b) How are antioxidants classified? Explain each type with a suitable example.

25.a) Discuss the effect of colour change on the processing of carotenoids.

b) Discuss the stability of pigments on packaging with suitable examples.

26.a) Explain the biosynthesis of tomato flavour.

b) Explain the chemicals responsible for odour in food products.

27.a) Give the structures of three disaccharides. Explain their characteristics.

b) What are the steps involved in the synthesis of aspartame? Explain.

28.a) Explain the gas retention process in making toughs.

b) Explain the activity analysis of yeast.
