



**LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034**

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

**SECOND SEMESTER – APRIL 2022**

**PFP 2501 – FOOD CHEMISTRY - II**

Date: 15-06-2022

Dept. No.

Max. : 100 Marks

Time: 09:00 AM - 12:00 NOON

**PART – A**

**(10×3 = 30 Marks)**

**Q. No**

**Answer ALL the questions**

- 1 Define the following i) Restoration ii) Fortification and iii) Enrichment.
- 2 What is meant by chelating effect?
- 3 What are parabens? Mention the role of parabens as preservatives.
- 4 List any four important primary antioxidants.
- 5 What are polyols? List out the permitted polyols used in food applications.
- 6 Mention the applications of anticaking agents with a suitable example.
- 7 Tabulate any two differences between natural and nature identical flavors.
- 8 Draw the structure of nootkatone and geraniol.
- 9 What are pH control agents? Mention its food applications.
- 10 List out the applications of stabilizers.

**PART – B**

**(5×8= 40 Marks)**

**Answer ALL the questions**

- |   | <b>Marks</b> |
|---|--------------|
| 11 (a) Explain the stability and mechanism of degradation of Vitamin A.   | (8)          |
| (OR)  |              |
| (b) Enumerate the stability and mechanism of degradation of Vitamin E.  | (8)          |
| 12 (a) Explain the role of sulphites, nitrites, sorbic acid and benzoic acid as preservatives.                  | (8)          |
| (OR)  |              |
| (b) List any five important sequestrants and describe their importance in the stabilization of food.            | (8)          |
| 13 (a) Schematically represent the structure and stability parameters of Betalain with respect to pH and light. | (8)          |
| (OR)  |              |
| (b) Draw the flowchart to explain the various extraction procedures adopted in food colours.                    | (8)          |
| 14 (a) Write a note on fish food flavors and flavors derived from the shikimic acid pathway.                    | (8)          |
| (OR)  |              |
| (b) Describe the synthesis of alkyl pyrazines and Mention its importance as a flavoring agent.                  | (8)          |

15 (a) Explain the gas production and the gas retention effects of dough and batters. (8)

(OR)

(b) What are sweeteners? Mention its types and explain the roles of saccharin and succharyl sodium as an artificial sweetener. (8)

**PART – C**

**(2×15 = 30 Marks)**

**Answer any TWO questions**

16 a) Discuss the Lowry- Bronsted and Lewis acid - base theory (5)

b) Write a detailed note on the properties of emulsions, describe the roles of emulsifying agents towards the surface tension of the foods. (10)

17 a) Discuss the needs and functional classification of food additives with examples. (7)

b) Write a note on synergism and lactic acid-ethanol fermentation. (8)

18 a) Draw and explain the functions of pungent compounds present in Ginger, Pepper and chilli pepper. (6)

b) Explain the following natural pigments in the context of the technology adopted to preserve the color and the influence of pH as a natural food colorant. (9)

i) Carotene                      ii) Chlorophyll

19 a) Explain the following

i) Flour improvers (8)

ii) Batters (7)

b) i) Comment on the various adverse effects of using synthetic sweeteners in diets by quoting any two examples. (7)

ii) Explain the HLB values of foods with respect to O/W and W/O emulsions category. (8)

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