



LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

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

FIRST SEMESTER – NOVEMBER 2019

PFP 1502 – INTRODUCTION TO FOOD PROCESSING

Date: 01-11-2019

Dept. No.

Max. : 100 Marks

Time: 01:00-04:00

Part A

Answer ALL the questions.

(10 x 3 = 30 marks)

1. Mention the various types of heat transfer involved in food processing
2. Cu^{2+} is a better oxidant than Zn^{2+} . why?
3. Define UHT and give examples of two foods which are treated with UHT.
4. Mention any three modern methods of drying with its significance.
5. What are the chemical preservatives used in meat industry?
6. Name any three physiochemical hurdles for microbial growth in foods.
7. State any one innovative new product launched in India and the reason for its success.
8. Differentiate between product specification and product authorization.
9. What numbers on plastic recycling chart are safe for drinking water bottles?
10. List the types of packaging machines.

Part B

Answer ALL the questions.

(5 x 8 = 40 marks)

11. a. Explain the various unit operations involved in food processing industry with their principles of operations and illustrate them by individual processes.

OR

- b. i) Derive an expression to determine the rate constant of a first order reaction (4)
ii) Relate Arrhenius approach on the temperature effects of simple shelf life kinetics plot (4)
12. a. Bring out the various principles of food preservation with suitable examples.

OR

- b. Discuss the various methods of thermal processing techniques used in food industry.
13. a. Explain the role of enzymes in baking industry

OR

- b. Elaborate on any two novel non-thermal food processing techniques used in fruit juice industry.

14. a. Design a packaging material for a food product of your interest and bring out a sensory evaluation score card for the same.

OR

b. Elaborate on Product Life Cycle (PLC) and discuss the factors which affect buying behavior of consumers for traditional food products in an emerging economy

15. a. Assuming that you have developed a new brand of flavored yoghurt, which would be the appropriate packaging material? Justify your answer

OR

b. Discuss the various methods of waste disposal of packaging material.

Part C

Answer ANY TWO questions.

(2 x 15 = 30 marks)

16. a) Derive an expression of Kirchhoff's equation for calculating equilibrium constants. (7)

b) Discuss the theory behind colloidal stability of food components (8)

17. Discuss the following in detail

a. Freezing curve

b. New product development – Factory to Fork

18. Write a detailed note on active packaging and how it extends food product shelf-life

19. Explain in detail the applications of food irradiation and its impact on food.

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