

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



**M.Sc. DEGREE EXAMINATION – BIOTECHNOLOGY**

**THIRD SEMESTER – NOVEMBER 2018**

**16/17PBT3ID01 – PRINCIPLES OF FOOD PROCESSING**

Date: 02-11-2018

Dept. No.

Max. : 100 Marks

Time: 09:00-12:00

**PART – A**

**(20 marks)**

**Answer all the questions**

**1. Choose the best answer:**

**(5 x 1 = 5 marks)**

1. Which of the following combination of processing and preservation techniques works best for smoked products?
  - a) Salt and acidification
  - b) Heat and solid content
  - c) Heat, salt content
  - d) Heat, salt, minimal moisture content
2. Which of the following methods refers to deactivation of microbes in food using electricity?
  - a) Power Ultrasound
  - b) Pulsed Electric field
  - c) Hurdle technology
  - d) All of the mentioned
3. Use of Nitrite/Nitrate salts as a preservative
  - a) Smoking
  - b) curing
  - c) Fermentation
  - d) Pickling
4. Partial boiling of cereals
  - a) Parching
  - b) Parboiling
  - c) Heating
  - d) Thermal decomposition
5. Tempering is an important processing step used in
  - a) Milk
  - b) Chocolates
  - c) Wheat
  - d) Oils

**II. State whether the following are true or false:**

**(5 x 1 = 5 marks)**

6. Multi-target preservation helps to target many factors such as pH, temperature etc and hence helps fight all types of microbes.
7. Disadvantage of microwave cooking is that the energy efficiency in this process is less.
8. Putrefaction is the process of anaerobic degradation of proteinaceous materials.
9. Food additives are intentionally added external substance to enhance the acceptable property of foods.
10. Double yolked and yolkless eggs are often expressed as good quality eggs.

**III. Complete the following:**

**(5 x 1 = 5 marks)**

11. \_\_\_\_\_ help in maintaining / controlling the acidic/alkaline changes during food processing and hence maintain flavor and stability.
12. \_\_\_\_\_ amines are formed when the meat is exposed to very high temperatures.
13. \_\_\_\_\_ is the potent neuro toxin often found in canned foods when the processing scales are not optimized.
14. \_\_\_\_\_ agents prevent the formation of gluten in baked goods.
15. \_\_\_\_\_ is a process of adding a micronutrient to enhance the nutritional property of the formulated food.

**IV. Answer the following, each within 50 words only**

**(5 x 1 = 5marks)**

16. What are D and Z Value?
17. Define Radappertization.
18. Define Pasteurization.
19. Differentiate homo lactic and hetero lactic fermentation process.
20. Highlight the uses of shortening agents.

**PART – B**

(5×8 = 40 marks)

**Answer the following questions, each in about 500 words only.  
Draw diagrams wherever necessary.**

21. a) Write briefly on solid separation from liquid in food processing.

**OR**

b) What is membrane filtration? Comment on its application in the food industry.

22. a) Write a short note on the three basic retort process.

**OR**

b) Comment on the different dryers used in food processing

23. a) Comment on the role of Lactases and proteases in food preservation.

**OR**

b) Write a note on fermented vegetables

24. a) Brief the steps involved in cocoa processing

**OR**

b) Write a note on the refining steps adopted to process oilseeds

25. a) Brief the physiochemical parameters involved in rice processing

**OR**

b) Comment on chilling of fish.

**PART – C**

**Answer any TWO of the following questions, each in about 1500 words (2×20 = 40 marks)  
Draw diagrams wherever necessary.**

26. Explain in detail on developing a HACCP Plan.

27. Explain in detail thermal processing of food.

28. Discuss the following

i) Fermentation biochemistry

ii) Preservation and calculation of nutritive values in egg

29. Explain the steps involved in processing dairy products.

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