

✓ Total number of printed pages-4

53 (FPT 302) PFPP

2017

**PRINCIPLE OF FOOD PROCESSING
AND PRESERVATION**

Paper : FPT 302

Full Marks : 100

Time : Three hours

***The figures in the margin indicate
full marks for the questions.***

Answer **any five** questions from **seven** given.

1. (a) What is Food Preservation? 2
- (b) Why do we need to preserve food? 3
- (c) How does food get spoilt? 3
- (d) Write the various principles of food preservation. 3
- (e) Write the names of various methods used for food preservation. 3

Contd.

- (f) Discuss the importance of hurdle technology in food preservation. 6
2. (a) With a neat diagram discuss the working principles of Tunnel dryer. 9
- (b) Write the advantages and disadvantages of both concurrent and countercurrent tunnel dryer. 3
- (c) With the help of a neat diagram explain the working principle of drum dryer. 8
3. (a) Explain the various steps involved in canning process of fruits and vegetables. 12
- (b) Write the advantages and disadvantages of blanching of fruits and vegetables during canning. 4
- (c) How blanching of fruits and vegetables are performed? 4

4. Write notes on **any four** of the following :
4×5

- (a) Flash-18 process
- (b) Hot-filling
- (c) Aseptic canning
- (d) Preservatives
- (e) Artificial sweeteners
- (f) Intermediate moisture food.

5. (a) What is Freeze Drying? Write the principle of lyophilization. 6

(b) How the food is preserved by freeze drying technique? 6

(c) Write the advantages of lyophilized food product. 2

(d) What do you mean by Food Irradiation? In what way it preserve the food materials? 6

6. (a) Define D-value and z-value. 4

(b) Write the mathematical expression for D-value and z-value. 4

(c) The F-value at 121.1°C equivalent to 99.99% inactivation of strain of *C. botulinum* is 1.659 minutes. Calculate the DO-value of these organisms. 4

(d) The sterilizing value of a process has been calculated to be an FO of 2.99. If each can contained, 10 spores of an organism having a DO of 1.8 minutes, calculate the probability of spoilage from the organism. Assume the FO-value was calculated using the same z-value of the organism. 8

7. Define Fermented Food. How do shelf life of food increases by fermentation? Explain possible advantages of fermented food. How can vegetables be preserved by fermentation? State predominant lactic acid microorganisms grow during fermentation of cabbage. Explain ideal wateractivity value for preservation of food against microbial spoilage. What is I.Q.F.?

2+3+3+5+2+3+2