Total number of printed pages: 3 **PG/1st/PFET102**

2021

RECENT TRENDS IN FOOD ENGINEERING AND TECHNOLOGY

Full Marks: 100

Time: Three hours

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

*Answer **any five** questions.*

1. a) Write about the different filling methods involved in the filling of food products into cans. 10

   b) Describe the working mechanism of following retort systems. 5+5=10

   (i). Crateless retorts

   (ii). Continuous rotary cookers

2. a) Define decimal reduction time and process lethality 4

b) Determine the F_0 value for the thermal processing of canned peas by using the data given in the table below: 6

Time (min)	Temperature (°C)
0	10
2	25
4	55
6	90
8	100
10	110
12	112
14	114
16	118
18	118
20	114
22	110
24	108
26	105
28	103
30	100

c. Explain the working mechanism of following freezing systems 5+5=10

(i). Plate type freezers

(ii). Fluidized bed freezers

3. a) Write about the design considerations for plate type heat exchangers 10

b) Explain the concept of hurdle technology and write about its application in the preservation of food products. 10

4. a) Write short notes on the construction of CAP/CAS rooms. 10

b) Compare and contrast dehydration and drying. 10

5. a) What do you mean by extrusion? 10

b) Why extruded products are more popular among kids and teenagers? 10

6. a) With neat labelled diagram discuss Single screw extrusion. 10

b) Describe the functioning of magnetron in microwave heating system. 10

7. a) How microwave generates heat in food materials? Compare microwave heating with conventional heating citing some examples. 5+5=10

b) Describe briefly the hazards of microwave heating when applied in food processing. 10