

Total No. of printed pages = 4

PG/1st Sem/PFET 102

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) Discuss elaborately about UHT sterilization process. 10
- (b) Explain the working mechanism of hydrostatic sterilizers with suitable diagram. 10
2. (a) Define the term Aseptic Processing. 2
- (b) How the sterilization of aseptic packaging materials and equipment has been performed? 6

[Turn over



(c) Discuss about the working principle of plate type heat changers (PHE) and explain about the design considerations for PHE.

6+6=12

3. (a) Determine the  $F_0$  value for the thermal processing of canned paneer by using the data given in the table below: 6

Time (min)	Temperature ( $^{\circ}\text{C}$ )
0	30
1	40
2	65
3	90
4	99
5	104
6	112
7	114
8	120
9	120
10	114
11	111
12	110
13	109
14	104
15	100



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- (b) Tabulate the difference between direct and indirect freezers. Mention few examples also. 6
- (c) Write short notes on modified atmospheric packaging. 8
4. (a) Define the term Hurdle technology. Write the importance of hurdle technology. 2+2=4
- (b) Explain the mechanism of hurdle technology. 6
- (c) Discuss elaborately about the biochemical hurdles. 10
5. (a) What is meant by multiple effect evaporators ? 5
- (b) Describe falling film evaporator system with a neat diagram. 15
6. (a) How microwaves generate heat in a food material ? 10
- (b) Describe the functioning of magnetron in microwave heating system. 10



7. (a) What are various feeding methods in a multiple effect evaporator? 10
- (b) Describe briefly the hazards of microwave heating when applied in food processing. 10

