

**POST GRADUATE DIPLOMA IN FOOD
SCIENCE AND TECHNOLOGY (PGDFT)**

Term-End Examination

00423

June, 2018

MFT-003 : FOOD PROCESSING AND ENGINEERING

Time : 3 hours

Maximum Marks : 70

*Note : Attempt any **five** questions. All questions carry equal marks.*

1. Explain the following terms (any **seven**) : $2 \times 7 = 14$
- (a) Screen analysis
 - (b) Thermal conductivity
 - (c) First law of thermodynamics
 - (d) Viscosity
 - (e) Pseudoplastic fluid
 - (f) Microwave heating
 - (g) Photometric sorting
 - (h) Cold chain
 - (i) Membrane processing

2. (a) Differentiate between bulk and true density. 4
- (b) Define thermal conductivity and describe how it is measured. 6
- (c) Describe methods used for measurement of specific heat. 4

3. (a) Define 'material balance'. Write different types of material balance and write the basic steps involved in solving material balance operation. 6
- (b) Write a note on belt conveyor. 4
- (c) Explain any four factors affecting the expression of oil. 4

4. (a) State the general guidelines for layout of dairy processing plant. 7
- (b) Differentiate between sterilization and pasteurization. 3
- (c) Explain different types of peeling methods. 4

5. (a) Enumerate various factors which must be considered for cooling load calculation in designing of cold storage. 4
- (b) Differentiate sorting and grading. Explain various methods of sorting of foods. 6
- (c) Describe the factors that affect size reduction of food. 4

6. (a) Give the importance of thermal processing in food industry. Enumerate different methods of thermal processing. Describe the changes likely to occur in foods during thermal processing. 8
- (b) What is freezing ? Explain any two techniques used for freezing of foods. 6
7. (a) Explain the principle, equipment and process used in High Pressure Processing (HPP) and Pulsed Electric Field (PEF) treatment. 8
- (b) State how the microorganisms are inactivated in High Pressure Processing (HPP) and Pulsed Electric Field (PEF) processing methods. 4
- (c) Enumerate factors affecting cleaning efficiency. 2
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