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53 (FPT 502) FPTC-III

2016

FOOD PRODUCT TECHNOLOGY-III

Paper : FPT 502

(Milk & Milk Products)

Full Marks : 100

Time : Three hours

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

Answer **any five** questions.

1. (a) Give the chart showing the detailed classification of milk constituents. 5
- (b) List the factors influencing the composition of milk. 6

Contd.

(c) Match the following : 4

| | Milk Type | - | Fat (%) |
|-------|-------------------|---|----------------|
| (i) | Toned milk | - | 4.5 |
| (ii) | Double Toned milk | - | 6.0 |
| (iii) | Standardized milk | - | 3.0 |
| (iv) | Full Cream milk | - | 1.5 |

(d) Write short notes on milk proteins. 5

2. (a) Explain the following physico-chemical properties of milk. 4+6

(i) Acidity

(ii) Density

(b) Write about the following : 3+3+4

(i) Stages (or) phases in the growth of microbes

(ii) Classification of microbes based on their optimal growth temperatures

(iii) Results of microbial growth in milk.

3. (a) Write about the following quality control tests for milk. 4+4+4
- (i) COB Test
 - (ii) Alcohol Test
 - (iii) The Lactometer test.
- (b) Give the schematic diagrams for the following : 4+4
- (i) Centrifugal milk separator
 - (ii) Batch pasteurizer.
4. (a) Explain the HTST pasteurization process with a proper flow diagram. 12
- (b) Write about the Cleaning-In-Place (CIP) process employed in milk industries. 8
5. (a) Define homogenization. Explain the working principle of milk homogenizer with proper diagram. 2+8
- (b) Write short notes on the production of following products. 5+5
- (i) Reconstituted milk
 - (ii) Recombined milk.

6. (a) Write the classification of milk cream. 3
- (b) Discuss *any one* of the processing methods for the production of milk cream. 5
- (c) Define over run in butter manufacturing. 2
- (d) Tabulate *any five* flavour defects along with causes and preventive measures. 10
7. (a) Give the flow chart for the production of ice cream. 5
- (b) Discuss about *any two* stabilizers used in the manufacturing process of ice cream. 5
- (c) Explain the production process of condensed milk with a proper flow chart. 10
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