

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-VI • EXAMINATION – SUMMER 2013****Subject Code: 161405****Date: 30-05-2013****Subject Name: Milk and Milk Products Technology****Time: 10.30 am - 01.00 pm****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1 (a)** Define the following terms: **07**  
 i) Toned milk ii) Recombined milk iii) Reconstituted milk iv) Flavored milk  
 v) Standardized milk vi) Sterilized milk vii) Homogenized milk
- (b)** Give average composition of cow's milk, buffalo's milk and discuss various factors affecting it. **07**
- Q.2 (a)** Calculate the quantity of whole milk (6.5% Fat and 9.0% SNF) required to prepare 1,00,000 liter of Standardized milk from double toned milk. Make necessary assumptions. **07**
- (b)** Write short notes on: (1) Defects in butter (2) Churning of butter **07**
- OR**
- (b)** Explain shortly the process of ice-cream manufacturing. **07**
- Q.3 (a)** Discuss the principle and methods of cream separation. **07**
- (b)** Give gross composition of Paneer. What is the effect of coagulation temperature on quality, yield and solids recovery of Paneer? **07**
- OR**
- Q.3 (a)** Discuss the importance and process of standardization and pasteurization of cream during butter preparation. **07**
- (b)** Discuss various physico-chemical properties of milk. **07**
- Q.4 (a)** Write the FSSAI specifications for ice-cream and state the role of milk fat, milk solids-not-fat as constituents in ice-cream. **07**
- (b)** Give FSSAI requirement and flow diagram for manufacturing of sweetened condensed milk. **07**
- OR**
- Q.4 (a)** Write Short note on National Dairy Development Board including its role and objectives in dairy development of India. **03**
- (b)** Discuss various phases of Operation Flood. **04**
- (c)** Calculate the quantity of cream (25% fat and 6.5% SNF) and SMP (1.0% Fat and 9.5%SNF) required for preparing 10,000 liter of full cream milk from standardized milk. **07**
- Q.5 (a)** Write short notes on: (1) Ripening of cream (2) Overrun in butter **07**
- (b)** Explain manufacturing of skim milk powder using spray drier with all technical details from raw full cream milk. **07**
- OR**
- Q.5 (a)** Define Processed cheese as per FSSAI. Give requirements for processed cheese spread and processed cheese. Discuss manufacturing Processed cheese in detail. **07**
- (b)** Discuss the role and types of stabilizers and sweetening agents used in ice-cream preparation. **07**

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