Seat No.: _____ Enrolment No._____

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: i) Toned milk ii) Recombined milk iii) Reconstituted milk iv) Flavored milk v) Standardized milk vi) Sterilized milk vii) Homogenized milk	**07**
	(b)	Give average composition of cowôs milk, buffaloôs 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 tonned 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 FSSA specifications for ice-cream and state the role of milk fat, milk solids-not-fat as constituents in ice-cream.	**07**
	(b)	Give FSSA 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 95%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 FSSA. 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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