

GUJARAT TECHNOLOGICAL UNIVERSITY
B. E. - SEMESTER – VI • EXAMINATION – WINTER 2012

Subject code: 161405**Date: 07/01/2013****Subject Name: Milk and Milk Products Technology****Time: 02.30 pm - 05.00 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)** Answer the followings in short: **07**
- i) Enlist the different types of vanilla flavorings available in market.
 - ii) State the advantages of homogenized milk.
 - iii) Enlist the name of major milk proteins.
 - iv) Write the name of instruments used to measure viscosity and refractive index of milk.
 - v) Give the name of the pigments responsible for yellow colour of cow milk and greenish ting of paneer/cheese whey.
 - vi) Define: Softy ice-cream
 - vii) Write the PFA specifications for ice-cream.
- (b)** Write short notes on: **04**
- i) Forced crystallization
 - ii) Anand pattern of milk collection
- (c)** Write in brief for rennet coagulation of milk in cheese making. **03**
- Q.2 (a)** Write short note on various platform test and give principle and procedure for alkaline phosphatase test. **07**
- (b)** Enlist the different types of cream and discuss the methods of preparation of cream. **07**
- OR**
- (b)** Define ripening of cream. Write down the objective and procedure for cream ripening for butter making. **07**
- Q.3 (a)** List benefits of dried milk product preparation and explain various physical and functional properties of dried milk product. **07**
- (b)** Discuss the following steps in preparation of butter: **07**
- i) Neutralization of cream
 - ii) Working of butter
- OR**
- Q.3 (a)** Give PFA requirement and flow diagram for preparation of sweetened condensed milk with technical details. **07**
- (b)** Give the flow diagram for the preparation of butter and describe 'Churning' step in detail. **07**
- Q.4 (a)** Write short notes on: **07**
- i) Recombined milk
 - ii) Flavoured milk
- (b)** Discuss the flow diagram for preparation of cheddar cheese with technical details. **07**

OR

- Q.4 (a)** Define Toned milk and write the advantages and procedure for preparation of toned milk. **07**
- Q.4 (b)** Draw line diagram of Spray Drier indicating various parts and give flow diagram for preparation of high heat skim milk powder. **07**
- Q.5 (a)** Enlist the different non dairy products used in preparation of ice-cream and write the role of stabilizers and emulsifiers with examples. **07**
- (b)** Write detailed constituents of milk in the form of chart and classify traditional Indian Milk products. **07**
- OR**
- Q.5 (a)** Discuss in detail the steps 'Homogenization' and 'Freezing' in preparation of ice-cream **07**
- (b)** To meet the shortage of liquid milk in summer, dairy is required to prepared 10,000liter of Recombined toned milk (3% fat & 8.6% SNF) using white butter (80% fat & 1.5% SNF) and SMP (94.5% SNF, 1.5% fat & 4% moisture). Calculate the quantities of white butter, SMP and water required to prepare the same. **03**
- (c)** Discuss any four physico-chemical properties of cow milk and buffalo milk important for processing and equipment design. **04**
