

Roll No. _____

M.Tech. Food Technology
III Semester Examination 2017
Course Code: MFTC-303

Course Title: Technology of Milk and Milk Products

2017
3rd Sem.

Time: 3 hours

Max Marks: 75

Read the instructions carefully. Marks are mentioned against each question.

Q1. Answer each of the following in one line/one word. (1 X 15)

- a. Define the following: Clarification, Alcohol test, Mellorine, CIP, Pilot sterilization
- b. Why chilling of milk is essential within stipulated time?
- c. Give the storage temperature of butter and ghee.
- d. The pigment responsible for greenish tinge in whey is _____.
- e. The by-product obtained during manufacture of butter is _____.
- f. Ice cream sold without Hardening as drawn from the freezer is known as _____.
- g. _____ is used to measure the specific gravity of milk.
- h. Differentiate between cleaning and sanitization.
- i. Write P.F.A. standards for the following products: Full cream milk; Ice Cream
- j. Expand: NDDB; SSHE

Q2. Attempt any three of the following (5 X 3)

- (a) Explain: (a) Two axis pricing policy of milk; (b) Alkaline phosphatase test
- (b) Calculate the quantity of whole milk (6.5% Fat and 9.0% SNF) required to prepare 50,000 L of standardized milk from double toned milk. Make necessary assumptions.
- (c) Discuss the need and advantages of co-operatives in milk collection.
- (d) Describe present position of dairy industry in India.
- (e) Define homogenization. Briefly discuss theories of homogenization.

Q3. Attempt any three of the following (5 X 3)

- (a) Give the flow diagram of manufacture of skim milk powder using spray drier.
- (b) Discuss any two major flavour defects of heat dessicated milk products.
- (c) Define skimming efficiency. List out the factors causing fat losses in buttermilk.
- (d) Enumerate factors affecting churnability of cream.
- (e) Give the flow diagram for manufacturing of sweetened condensed milk. Fresh milk contains 13.0 % Total Milk Solids (TMS) and sweetened condensed milk contains 31.0 % TMS. How much sugar should be added in milk to keep 43.1 % sugar in SCM.
- (f) What do you understand by the term neutralization of cream. Briefly explain the process.

Q4. Attempt any three of the following

(5 X 3)

- (a) Define cheddar cheese as per FSSAI. Discuss requirements for manufacturing cheddar cheese in detail.
- (b) Give the flowchart for butter making with technical details.
- (c) Explain: (a) King's modern theory; (b) Over-run
- (d) Briefly discuss the purpose and significance of hardening and freezing ice cream.
- (e) Name important flavour, body and texture defects observed in butter. Give the causes and prevention also.

Q5. Attempt any three of the following

(5 X 3)

- (a) What is Khoa? Discuss the method of preparation of khoa.
 - (b) Define *chhana* according to PFA rules. Give the flowchart for preparation of any one *chhana* based sweet.
 - (c) Give gross composition of Paneer. What is the effect of coagulation temperature on quality, yield and solids recovery of Paneer?
 - (d) Explain: (a) Adulterants used in ghee; (b) Traditional method of yoghurt preparation
 - (e) Discuss the types of packaging materials used for milk and milk products.
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