

B.Tech
2019
5/1/20

ROLL NO- _____

B.TECH FOOD TECHNOLOGY
Semester V Examination 2019
Course Code- BFTC-502
Course Title - Technology of milk and milk products

TIME: 3 hours

Max. Marks: 70

Note: 1. It is compulsory to answer all the questions of Section-A.
2. Answer any four questions in Section- B.

Section-A (30 marks)

Q1. Fill in the blanks:

(3M)

- a. Average yield of chhana is about _____% from cow milk and _____% from buffalo milk.
- b. _____ is the membrane separation system used for separation of bacteria and spores in milk.
- c. Ultra high temperature treatment is a technique for preserving fluid milk by exposing it to brief, intense heating, normally to temperatures in range of _____.

Q2.

- a. Differentiate between buttermilk and skimmed milk **(2M)**
- b. Give the principle of multiple effect evaporation. **(2M)**
- c. What is seeding and forced crystallization? **(2M)**

Q3.

- a. Mention different defects related to cheese, their causes and prevention. **(3M)**
- b. Which of the butter churning theories provide a most suitable explanation for production of butter? Explain. **(3M)**

Q4.

- a. Define: Recombined milk, Frozen dessert, Biostabilization of yoghurt **(3M)**
- b. Write FSSAI standards with respect to composition for full cream milk, toned milk, double toned milk and standardized milk. **(3M)**
- c. Give the purpose of homogenization and pilot sterilization steps in preparation of evaporated milk. **(3M)**

Q5.

- a. Give the flow sheet for the preparation of Paneer from buffalo milk. **(2M)**
- b. How much sugar must be added to milk to give 42% sugar in condensed milk, if fresh milk contains 12.5% TMS and condensed milk contains 30% TMS ? **(3M)**
- c. Expand: SSHE, SCC, COB, NDDB **(1M)**

Section- B (4*10=40 marks)

Any four

- Q1.** What are the legal standards of cream? Describe factors that influence the efficiency of cream separation. Name the common types of cream separators and describe briefly.
- Q2.** What are three major stages of spray drying? Discuss basic operations involved in production of milk powder.
- Q3.** Describe in brief the housing, feeding and milking management practices of milch animals which ensure production of good quality milk.
- Q4.** Name various ice cream ingredients and their purpose. Give principle and method of manufacture of ice cream with the help of a flow diagram. Give the freezing time and temperature of different types of ice-cream freezers.
- Q5.** Define condensed milk as per FSSAI. What are the requirements of high grade condensed milk? Give the causes of following defects in condensed milk:
- a. Gassy Fermentation
 - b. Age thickening
 - c. Sandiness
- Q6.** Write a short note on any four:
- a. Adulterants in milk
 - b. Modern method of *gulabjamun* preparation
 - c. Pasteurization efficiency
 - d. Infant foods
 - e. National Milk Grid
 - f. Precipitation of casein