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Reg. No. :

Code No. : 20384 E Sub. Code : ESCH 21/
FSCH 21

B.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2025.

Second Semester

Chemistry

Skill Enhancement Course — DAIRY CHEMISTRY

(For those who joined in July 2023 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. What factor affects the colour of milk?
(a) Fat content
(b) Protein content
(c) Presence of preservatives
(d) Temperature

2. Which mineral is essential for the formation of bones and teeth and is commonly found in milk?
(a) Iron (b) Zinc
(c) Calcium (d) Magnesium
3. Which of the following methods is commonly used to destroy microorganisms in milk?
(a) Sterilization
(b) Pasteurization
(c) Homogenization
(d) Filtration
4. Which pasteurization method involves heating milk under vacuum conditions to lower the boiling point?
(a) Bottle pasteurization
(b) Batch pasteurization
(c) HTST pasteurization
(d) Vacuum pasteurization
5. What is the primary constituent of cream?
(a) Lactose (b) Protein
(c) Fat (d) Water

6. Which method of separation is based on the difference in density between cream and skim milk?
- (a) Filtration
 - (b) Gravitational separation
 - (c) Centrifugal separation
 - (d) Distillation
7. What is standardized milk?
- (a) Milk with a standardized fat content
 - (b) Milk with added vitamins
 - (c) Milk with reduced lactose content
 - (d) Milk with enhanced flavor
8. Toned milk is milk that has been:
- (a) Diluted with water to reduce fat content
 - (b) Enriched with vitamins and minerals
 - (c) Fermented to enhance flavor
 - (d) Clarified to remove impurities
9. Cultured milk refers to milk that has been:
- (a) Pasteurized
 - (b) Homogenized
 - (c) Fermented with specific bacterial cultures
 - (d) Enriched with vitamins

10. Ice cream is defined as a:
- (a) Frozen dairy dessert
 - (b) Cultured milk product
 - (c) Milk-based beverage
 - (d) Cheese product

PART B — (5 × 5 = 25 marks)

Answer ALL questions by choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Discuss the composition of milk.
- Or
- (b) Explain the method of estimating fat in milk.
12. (a) Describe the microbiology of milk.
- Or
- (b) Write a note on Ultra-High Temperature (UHT) pasteurization.
13. (a) Explain the methods of detection of common adulterants present in Ghee.
- Or
- (b) Define Butter. Give its composition and types.

14. (a) What does it mean to standardize milk, and what are the benefits of this process?

Or

- (b) Explain the concept of vitaminized milk.

15. (a) Explain the process of fermentation of milk.

Or

- (b) Discuss the definition of cultured cream and buttermilk.

PART C — (5 × 8 = 40 marks)

Answer ALL questions by choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Discuss the general composition of milk.

Or

- (b) What are the adulterants present in milk? How they are detected?

17. (a) Explain the physico-chemical changes that occur in milk during boiling and pasteurization.

Or

- (b) Discuss the Bottle and Batch pasteurization processes of milk.

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18. (a) Define cream. Give its chemical composition.

Or

- (b) Discuss methods for preventing rancidity in ghee.

19. (a) Write a note on homogenized milk.

Or

- (b) Discuss toned milk and its composition.

20. (a) Explain the manufacturing process of ice cream.

Or

- (b) Define milk powder and discuss the methods for making milk powder.

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