



Name : .....

Roll No. : .....

Invigilator's Signature : .....

**CS/B.Tech(FT)/SEM-5/FT-502/2009-10  
2009**

**FOOD PROCESS TECHNOLOGY – III  
( MILK & DAIRY PRODUCTS )**

Time Allotted : 3 Hours

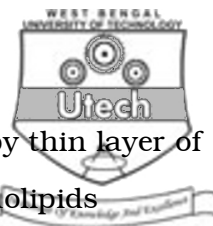
Full Marks : 70

*The figures in the margin indicate full marks.*

*Candidates are required to give their answers in their own words  
as far as practicable.*

**GROUP – A  
( Multiple Choice Type Questions )**

1. Choose the correct alternatives of the following :  $10 \times 1 = 10$ 
  - i) Titratable acidity of milk is expressed in terms of
    - a) citric acid
    - b) acetic acid
    - c) lactic acid
    - d) none of these.
  - ii) Specific gravity of milk can be measured by using
    - a) pycnometer
    - b) lactometer
    - c) both (a) and (b)
    - d) none of these.
  - iii) The index organism for Pasteurization is
    - a) *Staphylococcus aureus*
    - b) *Streptococcus thermophilus*
    - c) *Coxelliae burnittii*
    - d) *Bacillus subtilis*.



- iv) In milk, each fat globule is surrounded by thin layer of
- a) protein
  - b) phospholipids
  - c) both (a) and (b)
  - d) lactose.
- v) According to PFA Rules 1976, toned milk should contain a minimum of
- a) 3.5% fat and 8.5% SNF respectively
  - b) 3.0% fat and 8.5% SNF respectively
  - c) 3.5% fat and 9.0% SNF respectively
  - d) 4.0% fat and 8.5% SNF respectively.
- vi) What speeds up the clotting reaction during the coagulation by renin ?
- a) Lowering of pH
  - b) Addition of  $\text{CaCl}_2$
  - c) both (a) and (b)
  - d) none of these.
- vii) The yellow colour of cow milk is due to pigment
- a) Riboflavin
  - b) Lycopene
  - c) Melanoidin
  - d) Carotene.
- viii) The test used to determine the efficiency of sterilization is
- a) phosphatase test
  - b) turbidity test
  - c) MBRT
  - d) sediment test.
- ix) According to the PFA rules the minimum fat content of plain ice cream is
- a) 9%
  - b) 10%
  - c) 10.5%
  - d) 8%.
- x) Which milk powder has the highest bulk density ?
- a) Freeze dried
  - b) Spray dried
  - c) Roller dried
  - d) Foam spray dried.



**GROUP – B**

**( Short Answer Type Questions )**

Answer any *three* of the following.

3 × 5 = 15

2. What is milk stone ? How can it effectively be removed from dairy equipment ?  
2 + 3
3. How can there be an increase in acidity of stored milk ?
4. Draw the flow-chart for the manufacture of baby food.
5. Define heat stability of milk. What are the factors responsible for heat stability of milk ?  
1 + 4
6. Briefly describe about the defects commonly found in sweetened condensed milk.

**GROUP – C**

**( Long Answer Type Questions )**

Answer any *three* of the following.

3 × 15 = 45

7. What is Pasteurization ? What are the objectives of Pasteurization ? Give the merits and demerits of Batch Pasteurization process. Explain the milk flow through HTST pasteurizer with schematic diagram. Write down the working principle of FDV.  
1 + 2 + 3 + 7 + 2
8. What is fermentation ? Give four examples of fermented milk products. Write down the method of manufacture of yoghurt. Explain the therapeutic benefit of yoghurt. What are the defects of yoghurt ?  
1 + 2 + 7 + 2 + 3

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9. Define churning in the butter making process. What is skimming efficiency of cream separator ? Given 100 kg of milk testing 7.5% fat. Cream produced 14.1 kg testing 52.5% fat. Determine the SE. What is the role of salting in butter making ? Fat in churn = 800 kg. Butter is to contain 2.0% salt. How much salt to be added to the churn ?

3 + 3 + 4 + 2 + 3

10. Give the flow diagram for manufacture of cheddar cheese. What are the changes take place during ripening of cheese ? Discuss about rennet action of milk. What is the purpose of cheddaring of cheese ?

5 + 4 + 4 + 2

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