

**MAHARASHTRA ANIMAL AND FISHERY SCIENCES UNIVERSITY, NAGPUR**  
**SEMESTER END THEORY EXAMINATION, B. TECH. (D. T.)**

Semester	: III (V Dean)	Academic Year	: 2021-2022
Course No.	: DT-303	Course Title	: Fat Rich Dairy Products
Credits	: (2+1=3)	Total Marks	: 50
Day & Date	: Thursday, 07/04/2022	Time	: 02 Hrs.

- Note :** 1) All questions from **Section 'A'** are compulsory.  
2) Solve **Any Three** questions from **Section 'B'**.  
3) All Draw neat and well labelled diagram wherever necessary

**SECTION - 'A'**

Q. 1 A) Choose the most appropriate answer from the option given below. (05)

- i) Growth of proteolytic bacteria leading to casein breakdown in cream may result in .....
  - a) Cheesy flavour
  - b) Coarse acid flavour
  - c) Bitter flavour
  - d) Barny flavour
- ii) Gritty defect in butter is due to excess of .....
  - a) fat
  - b) colour
  - c) salt
  - d) moisture
- iii) RM value for desi ghee is .....
  - a) 10-15
  - b) 5-10
  - c) 21-28
  - d) 40-45
- iv) The optimum temperature for the cooling and ageing of cream .....
  - a) 1-2°C
  - b) 2-3 °C
  - c) 5-10 °C
  - d) 15-20 °C
- v) Which of the following acid is soluble in water .....
  - a) Palmitic
  - b) myristic
  - c) Stearic
  - d) caproic

B) Define the following. (05)

- i) Ripening of cream
- ii) Ghee residue
- iii) Cream as per FSSAI
- iv) Butter as per FSSAI
- v) Neutralization of cream

Q. 2 A) Give reasons for the following. (05)

- i) Optimum temperature for cream separation is 38°C
- ii) Why pasteurization of cream is done?
- iii) Why churning of cream is done at 9-11°C
- iv) Why washing of butter is necessary?
- v) Storage of butter at -23 to -29°C

- B) State whether True or False. If false rewrite the statement after making necessary corrections in underline word. (05)
- i) Max clumping of fat globules takes place at 7°C.
  - ii) In butter churner, product contact surface is of iron metal.
  - iii) Protease enzyme is responsible for oxidative changes.
  - iv) Cultured cream will have an acidity of 1%LA.
  - v) Homogenization is not necessary for coffee cream.

### SECTION – 'B'

- Q. 3 A) Explain the status of fat rich dairy products in India? (05)  
B) Define cream? Write its classification and explain any one type of cream? (05)
- Q. 4 A) Explain the manufacture of butter by batch method. (05)  
B) Enlist various defects in butter, causes and their prevention. (05)
- Q. 5 A) Write AGMARK standards for ghee and butter. (03)  
B) Method of manufacture of clotted cream (03)  
C) Short note on preservation of ghee (04)
- Q.6 Explain the following.  
A) Theories of churning (03)  
B) Method of salting (03)  
C) Antioxidants in ghee (04)
- Q.7 Explain in detail the method of continuous manufacture of butter (10)

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