

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

Semester	: IV (V Dean)	Academic Year	: 2021-2022
Course No.	: DC-405	Course Title	: Chemistry of Dairy Products
Credits	: 2+1=3	Total Marks	: 50
Day & Date	: Monday, 29/08/2022	Time	: 02:30 Hrs

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

**SECTION –‘A’**

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

- i) An example of acid coagulated product .....
  - a) Dahi
  - b) Paneer
  - c) Chakka
  - d) Butter
- ii) Degree of proteolysis in cheese is measured by.....
  - a) Tyrosine value
  - b) Tryptophan value
  - c) Lysine value
  - d) Proline value
- iii) Cooked flavor in milk and milk products is due to.....
  - a) -SH- group
  - b) Methyl ketones
  - c) FFA
  - d) Methyl esters
- iv) Sandiness in condensed milk is due to.....
  - a) Protein
  - b) Fat
  - c) Minerals
  - d) Lactose
- v) The salt content of table butter is.....
  - a) NMT 3%
  - b) NLT 3%
  - c) NMT 4%
  - d) None of these

B) Define the following. (05)

- i) Stroke's law
- ii) Antioxidant
- iii) Churning
- iv) Ripening
- v) Cheese as per FSSR 2011

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

- i) Continuous heating of milk solids at high temperature causes browning.
- ii) Why cream layer is formed on the surface of raw cold milk on standing?
- iii) Colostrum is not used for cheese making.
- iv) Salt is added in table butter.
- v) Buffalo milk is not preferred for channa making.

(P.T.O.)

B) State whether True or False. If false, rewrite the statement after making necessary corrections to the underlined word. (05)

- i) Sediment/mineral deposit is a defect in dried milk.
- ii) Yoghurt is a TIDP product produced by fermentation.
- iii) Slow cooling of cream increases the viscosity.
- iv) Flavor of ghee is contributed by lactones.
- v) Shrikhand is the channa based sweet.

#### SECTION - 'B'

- Q.3 A) Explain the theories of churning. (05)  
B) Discuss the role of emulsifier and stabilizer in ice cream. (05)
- Q.4 A) Briefly narrate the mechanism of rennet action during cheese making. (05)  
B) Explain the mechanism of auto-oxidation of ghee. (05)
- Q.5 A) Define the term cream. Classify the cream on the basis of fat percentage. Briefly describe the factors affecting fat losses in skim milk. (03)  
B) Give the AGMARK standards for ghee. (03)  
C) Explain important functional properties of milk powder. (04)
- Q.6 A) Describe the microstructure of ice cream. (03)  
B) Explain in detail the age gelation in concentrated milk. (03)  
C) Discuss in brief about the process and significance of Maillard browning in milk products. (04)
- Q.7 Define the term khoa. Give legal standards of khoa as per FSSAI. Explain physico-chemical changes occur during khoa making. (10)

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