

MAHARASHTRA ANIMAL AND FISHERY SCIENCES UNIVERSITY, NAGPUR
SEMESTER END THEORY EXAMINATION, *B.Tech. Dairy Technology* 2018-19

Semester : IV (V Dean)

Academic Year : 2018-2019

Course No. : DM-404

Course Title : **Microbiology of Dairy Products**

Credits : 1+1=2

Total Marks : 50

Day & Date : Saturday, 29.06.2019

Time : 15.00 to 17.00 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) The bitty cream defect in milk caused by
 - a) *Bacillus cereus*
 - b) Coliforms
 - c) *Pseudomonas*
 - d) *Clostridium botulinum*
- ii) The nature of predominating defect causing microorganisms in butter is
 - a) Proteolytic
 - b) Lipolytic
 - c) Acid production
 - d) Gas production
- iii) The common microbial defect in *khoa* stored at ambient temperature is
 - a) Discolouration
 - b) Yeasty flavor
 - c) Rancidity
 - d) Moldy flavor
- iv) Early blowing in condensed milk is due to
 - a) Coliform
 - b) *Pseudomonas*
 - c) *Geotricum candidum*
 - d) Bacteria
- v) According to FSSAI milk fat content in Ice cream is
 - a) Min. 10%
 - b) Max. 8 %
 - c) Max. 20%
 - d) Min. 15%

B) Define the following. (05)

- Ripening
- Fermentation
- Market milk
- Food poisoning
- Spoilage

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

- i) The butter prepared from ripened cream has better flavor than unripened cream.
- ii) Milk after condensation must not hold for longer duration compared to evaporated milk.
- iii) During Ice cream preparation freezing process increase the bacterial count.
- iv) Microbial number is less in fresh roller dried milk powder than spray dried milk powder.
- v) Molds predominate in butter than bacteria.

(P.T.O.)

- B) State "True or False", If false rewrite the statement after making necessary corrections. (05)
- i) Homogenization may decrease the keeping quality of cream.
 - ii) Acetaldehyde is the flavouring compound in butter.
 - iii) Ageing of ice cream is done for 4 hours.
 - iv) Late blowing of SCM is due to *Pseudomonas spp.*
 - v) The lipase producing organism breakdown fats in cream and cause rancidity.

SECTION - 'B'

- Q. 3 A) Explain in detail any five microbial defects in cream. (05)
B) Write the spoilage micro-flora associated during churning, working and storage of butter. (05)
- Q. 4 A) Define proteolysis and lypolysis. Explain its significance in dairy products. (05)
B) With the help of flow chart explain different microbial contamination in butter. (05)
- Q. 5 A) Explain the significance of *clostridium botulinum* in evaporated milk. (03)
B) What are the various microflora present in *Kheer, Paneer and kulfi*? (03)
C) Give FSSAI standards for butter and *paneer*. (04)
- Q. 6 A) Write the spoilage microflora associated in *khoa* and *khoa* based sweets. (03)
B) Write on microbial quality of milk powder and infant foods. (03)
C) Write the factors affecting the microbiological quality of dried milk. (04)
- Q. 7 With the help of flow chart explain the different factors affecting microbial quality of ice cream. (10)
