

MAHARASHTRA ANIMAL AND FISHERY SCIENCES UNIVERSITY, NAGPUR
SEMESTER END THEORY EXAMINATION, B.Tech. (D.T.) Degree Course 2017-18

Semester : IV (V Dean)

Academic Year : 2017-2018

Course No. : DM-404

Course Title : Microbiology of Dairy Products

Credits : 1+1=2

Total Marks : 50

Day & Date : Friday, 15.06.2018

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

1

- Ropiness in milk is caused by
☒ a) Mucin of *Alcaligenes* b) Lactic acid of micrococci
☐ c) FFA of *Pseudomonas* d) Peptide of streptococci
- Yellow discoloration in butter is due to a mold
☐ a) *Torulla* spp. b) *Aspergillus niger*
☐ c) *Micrococcus luteus* ☒ d) *Geotrichum candidum*
- Seeding of SCM can be done by
☐ a) Protein ☒ b) Lactose
☐ c) Fructose d) Vitamins
- Ketonic rancidity is due to
☐ a) Yeasts ☒ b) Molds
☐ c) Bacteria d) Spores
- Normally used physical sterilant in dairy industry
☐ a) Chlorine ☒ b) Steam
☐ c) Citrimide d) Iodophore

B) Define the following. (05)

- Pasteurization
- Bactofugation
- Dahi*
- Pathogens
- Food infection

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

2

- Higher pasteurization temperature is required for ice cream mix compared to milk.
- Added sugar ratio for canned products is higher than bulk whole milk.
- The butter prepared from ripened cream has got very good quality.
- Dried milk has got high keeping quality.
- Paneer* is a short shelf life product.

(P.T.O.)

B) State "True or False", If false rewrite the statement after making necessary corrections. (05)

- ~~F~~ - i) Nisin, a bacteriocin is produced by Clostridia species.
~~T~~ - ii) Botulinum toxin is a neurotoxin.
~~T~~ - iii) In ice-cream sugar is the main source for the growth of yeast and molds.
~~F~~ - iv) Mesophilic organisms grow at 7°C.
~~T~~ - v) Hydrolytic rancidity in butter is caused by *Candida lipolytica*.

SECTION - 'B'

- Q. 3 a) Discuss in detail present status of milk and milk product industry in India. (05)
b) Briefly describe the various factors that affect the microbiological quality of butter. (05)
- Q. 4 a) Explain in detail microbiological defects in evaporated milk. (05)
b) Explain in detail microbial defects of sweetened condensed milk and give their control measures. (05)
- Q. 5 a) What do you mean by bacterial thickening in sweetened condensed milk? (03)
b) Briefly explain role of plant and personnel hygiene during manufacture of milk products. (03)
c) Write a brief note on microbial quality of ice-cream and its public health significance. (04)
- Q. 6 a) Compare microbial quality of roller dried and spray dried milk powder. (03)
b) Write a note on pathogenic organisms found in *khoa*. (03)
c) Write a note on aseptic packaging. (04)
- Q. 7 Explain in detail microflora mostly found in *burfi*, *pedha*, *gulabjamun*, *channa*, *kheer*, *shrikhand* and *kulfi*. (10)
