

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-403	Course Title	: Starter Cultures and Fermented Milk Products
Credits	: 2+1=3	Total Marks	: 50
Day & Date	: Friday, 21.06.2019	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 association that exists among the cultures of yogurt
 - a) Synergism
 - b) Symbiosis
 - c) Antibiosis
 - d) Commensalism
 - ii) Flavour compound of Dahi is
 - a) Acetaldehyde
 - b) Diacetyl
 - c) Acetoin
 - d) Citrate
 - iii) Aroma producing starter cocci that requires combination of acid producer
 - a) *Lactococcus lactis ssp. Lactis*
 - b) *Leuconostoc mesenteroides ssp. Cremoris*
 - c) *Streptococcus thermophilus*
 - d) *Lactococcus lactis ssp. Diacetylactis.*
 - iv) The product prepared using Mare's milk is
 - a) Kefir
 - b) Kumiss
 - c) Villi
 - d) Yoghurt
 - v) The flavour compound of brick cheese is
 - a) Dimethyl sulphide
 - b) Acetoin
 - c) Acetyl methyl carbinol
 - d) Methyl butanol
- B) Define the following. (05)
- i) Kumis
 - ii) Proteolysis
 - iii) Bacteriocins
 - iv) Lewis fermenter system
 - v) Freeze drying
- Q. 2 A) Give scientific reasons for the following. (05)
- i) Lactic acid bacteria have complex proteolytic system.
 - ii) Calcium deficient medium helps to control bacteriophage.
 - iii) Consumption of fermented milk products improves lifespan of consumers.
 - iv) Lysogenic cycle of bacteriophage is considered as beneficial.
 - v) It is suggested to maintain yoghurt cultures separately for their better propagation.

- B) State True or False, If false rewrite the statement after making necessary corrections. (05)
- i) Generally starter bacteria used in fermented milk products (FMP) preparation are Gram negative in nature.
 - ii) Yeasts are the common contaminants in *dahi*.
 - iii) Oxygen is responsible for eye formation in Swiss cheese.
 - iv) The population in starter concentrates will be 10^{11} to 10^{13} cfu/ml.
 - v) Camembert cheese is an example for internal mold ripened cheese.

SECTION –‘B’

- Q. 3 a) Describe in detail methods of preservation of starter culture. (05)
b) Explain the steps of Glycolysis. (05)
- Q. 4 a) Explain in detail lactose transportation in yoghurt culture. (05)
b) Explain how antibiotic residues in milk affect the growth of starter culture. (05)
- Q. 5 a) Describe Leloir pathway of galactose utilization. (03)
b) Explain about the possible microbial defects in *dahi*. (03)
c) List the tests conducted to check activity of starter cultures and brief about any two them. (04)
- Q. 6 a) Give the classification of starter cultures. (03)
b) Differentiate between Bulgarian milk and cultured butter milk (03)
c) Write the flowchart for production of acidophilus milk and yakult. (04)
- Q. 7 Describe in detail the factor affecting propagation of starter culture. (10)
