

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

Semester	: IV (New Syllabus)	Academic Year	: 2017-2018
Course No.	: DM-403	Course Title	: Starter Cultures and Fermented Milk Products
Credits	: 2+1=3	Total Marks	: 50
Day & Date	: Monday, 11.06.2018	Time	: 15.00 to 17.00 Hrs.

- Note :** 1) Section "A" is Compulsory.
2) Solve any Five 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) DL starters are used in cheese
 - a) Cheddar
 - b) Gouda
 - c) Both a) and b)
 - d) None of these
- ii) Example for semisoft internally ripened cheese
 - a) Camembertii cheese
 - b) Roquefortii cheese
 - c) Brick cheese
 - d) None of these
- iii) According to Lancefield grouping, lactococci belong to the group
 - a) N
 - b) A
 - c) E
 - d) D
- iv) Name the alcoholic milk beverage that uses inoculums of starter cultures present in immobilized state
 - a) Kumiss
 - b) Kefir
 - c) Leben
 - d) Taette
- v) Process of preservation of starter cultures through drying at low temperature under vacuum
 - a) Spray drying
 - b) Drum drying
 - c) Freeze drying
 - d) Sun drying

B) Do as directed. (05)

- i) Write the classification of starter culture based on types of strain.
- ii) Write the names of organisms genus lactococci.
- iii) Write the uses of yeasts in food Industry.
- iv) List the types of fermentation.
- v) List the purity tests.

Q. 2 A) Match the following (05)

Coloum - 'A'

- i) Stock culture
- ii) Lewjs
- iii) Transformation
- iv) Restriction & Modification system
- v) Robinson & Tamime

Coloum - 'B'

- a) Fermentor
- b) Electroporation
- c) Recent classification of FMP
- d) old classification of FMP
- e) Liquid culture Bacteriophage resistance

(P.T.O.)

- B) State whether True or False. If false, rewrite the statement after making necessary corrections. (05)
- i) The father of fermented milk is Metchnikoff.
 - ii) Tyndalization of milk kills the bacterial spores by inducing sporulation.
 - iii) Heat treatment given to Flavoured milk is sterilization.
 - iv) Lactose transportation in case of leuconostoc is by passive diffusion.
 - v) Early blowing of cheese is caused by Bacillus.

SECTION – 'B'

- Q. 3 Write the types of starter culture used in fermented dairy industry and explain? (06)
- Q. 4 Explain in detail factors affecting growth of the starter culture. (06)
- Q. 5 Explain briefly Tagatose pathway and Leloir pathway. (06)
- Q. 6
- a) Write a note on Starter concentrate. (02)
 - b) Write a note on lactic acid bacteria. (02)
 - c) Write the classification of fermented milk products. (02)
- Q. 7
- a) Explain the purity tests. (03)
 - b) Write a manufacturing of yoghurt with a flow diagram. (03)
- Q. 8
- a) Write a short note on therapeutic benefits of probiotic products. (02)
 - b) Write a short note on Leben. (02)
 - c) Write a short note on advantages of proteolytic system in lactic acid bacteria. (02)
- Q. 9
- a) Write a short note on Yakult and Bulgarian milk. (02)
 - b) Discuss in detail method of preservation of starter culture. (04)
