

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

Semester :	II (New Syllabus)	Academic Year :	2017-2018
Course No. :	DM-202	Course Title :	Introductory Dairy Microbiology
Credits :	2+1=3	Total Marks :	50
Day & Date :	Monday, 18.06.2018	Time :	11.00 to 13.00 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) The safe foods should not contain .....
  - a) Useful Microorganisms
  - b) Probiotics
  - c) Starter Cultures
  - d) Pathogens
- ii) Possibility of presence of pathogens is high in .....
  - a) Pasteurized milk
  - b) Boiled milk
  - c) Fermented milk
  - d) Raw milk
- iii) The microorganism responsible for the spread of mastitis among herd is .....
  - a) *Salmonella typhi*
  - b) *Escherichia coli*
  - c) *Streptococcus agalactiae*
  - d) *Listeria monocytogenes*
- iv) The most common aerobic spores of genus *Bacillus* not found in milk .....
  - a) *Bacillus pumilis*
  - b) *Bacillus circulans*
  - c) *Bacillus cereus*
  - d) *Bacillus stearothermophilus*
- v) Personal hygiene of animal handlers means .....
  - a) Should be routinely examined
  - b) Should not have open cuts and wounds
  - c) Milker should not show the symptoms of any communicable disease
  - d) All of these

B) Rewrite the following statement after making necessary correction if required. (05)

- i) Fruity flavour in dairy products is due the contamination of *Pseudomonas fragi*.
- ii) *E. coli* causes ropiness in milk and milk products.
- iii) *Lactobacillus bulgaricus* is a pseudolactic acid bacteria.
- iv) Aflatoxins are produced by the species of *Aspergillus spp.*
- v) Psychrotrophs are capable of growing at 15°C or above.

Q. 2 A) Define the following. (05)

- i) Sweet curdling
- ii) Ropy milk
- iii) Proteolysis
- iv) Fruity flavour
- v) Synergism

(P.T.O.)



B) Give two examples of following.

(05)

- i) Pathogens
- ii) Spoilage microorganisms
- iii) Psychrophiles
- iv) Thermophilic
- v) Mesophilic

#### SECTION - 'B'

- Q. 3 Discuss in detail hygienic milk production system and microbial and non-microbial contaminates in milk. (06)
- Q. 4 Describe in brief impact of various stages like milking, chilling, storage and transportation on microbial quality of milk. (06)
- Q. 5 Describe in detail microorganisms associated with raw milk and their classification based on temperature. (06)
- Q. 6 Differentiate between the following.
- a) Thermotolerant and Thermophilic microorganisms. (02)
  - b) Direct and indirect rapid technique for assessment of quality of milk. (02)
  - c) Organized and Unorganized milk dairy sector in India. (02)
- Q. 7 Write in brief the causative organisms and control measures of the following defects.
- a) Gas production (03)
  - b) Ropiness (03)
- Q. 8 Write a short note on the following.
- a) Food infection (02)
  - b) Microbial changes in bulk refrigerated milk. (02)
  - c) Role of microorganisms in spoilage of milk. (02)
- Q. 9
- a) What do you mean by antimicrobial systems in milk? (02)
  - b) Discuss in detail about mastitis milk. (04)

\*\*\*\*\*