

**MAHARASHTRA ANIMAL AND FISHERY SCIENCES UNIVERSITY, NAGPUR**  
**SEMESTER END THEORY EXAMINATION, B. TECH. (D.T.) DEGREE COURSE 2018-19**

Semester : <b>V (V Dean)</b>	Academic Year : <b>2018-2019</b>
Course No. : <b>DM - 505</b>	Course Title : <b>Quality and Safety Monitoring in Dairy Industry</b>
Credits : <b>2+1-3</b>	Total Marks : <b>50</b>
Day & Date : <b>Saturday, 12/01/2019</b>	Time : <b>11.00 to 13.00 Hrs.</b>

- 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) Test used to assess the equipment and personal hygiene .....
  - a) Capacity test
  - b) Suspension test
  - c) Swab test
  - d) None of above
- ii) PDA acidified with tartaric acid (10%) to pH ..... is used to determine the yeast and mold count.
  - a) 7.5
  - b) 4.5
  - c) 3.5
  - d) 4.9
- iii) Select one correct alternative from the following.
  - a) Coliform bacteria may be defined as small Gram-positive, non-spore forming rods which produce acid plus gas from lactose broth at 32<sup>0</sup>C within 48h.
  - b) Coliform bacteria may be defined as small Gram-negative, non-spore forming rods which ferment lactose acid plus gas produce at 32<sup>0</sup>C within 48hr.
  - c) Coliform bacteria may be defined as small Gram-positive, non-spore forming cocci which produce acid plus gas from lactose broth at 32<sup>0</sup>C within 48h.
  - d) None of these
- iv) CAC is an intergovernmental body established by the two parent organizations ..... and .....
  - a) ICMSE/FAO
  - b) IDF/FAO
  - c) FAO/WHO
  - d) FAO/FSSAI
- v) Select one correct alternative from the following.....
  - a) Normal milk has pH 6.6 – 6.8
  - b) Normal milk has pH 6.9 – 7.5
  - c) Normal milk has pH 7.0 – 7.4
  - d) Normal milk has pH 4.6 – 5.0

B) Define the following. (05)

- i) QMS
- ii) Capacity test
- iii) TQM
- iv) BOD
- v) Indicator microorganism

- Q. 2 A) Give the reason of the following. (05)
- i) Why it is necessary to sterilize the packaging material before use?
  - ii) Reason of Detection of aflatoxins.
  - iii) Why rapid test is required for detection of antibiotics residue in raw milk?
  - iv) Why a biological hazard is important in Dairy Industry?
  - v) Why the holding of raw milk at refrigerated temperature avoided?
- B) State whether True or False. If False, rewrite the statement after making necessary corrections. (05)
- i) The main flavour component in ripened butter is butyric acid.
  - ii) As per FSSAI *Staphylococcus aureus* should be  $\leq 5 \times 10^5$  cfu/ml.
  - iii) While determine the efficiency of sanitizer by capacity test the rate of kill of bacteria can be measured.
  - iv) Sterility test is generally done for ice-cream, cheese and pasteurized milk.
  - v) Coliform and Enterococci are the main indicator organisms.

### SECTION – 'B'

- Q. 3 A) Discuss principles of HACCP system. (05)
- B) Discuss the various factors affecting the quality of raw milk at farm level. (05)
- Q. 4 A) Enlist the various methods of waste water treatment and discuss in detail any one. (05)
- B) Discuss the enumeration principle of *salmonella*. (05)
- Q. 5 A) Comment on FSSAI (03)
- B) Discuss the objective of ICMSF. (03)
- C) Write down the scheme to determine the CCP. (04)
- Q. 6 A) Explain the importance of microbial quality of water and environmental hygiene in dairy plant. (03)
- B) Briefly explain the concepts of microbiological risk analysis. (03)
- C) Discuss about the role of CAC in harmonization of International standards (04)
- Q. 7 What is antibiotic? How it get entry in milk? Enlist the methods of detection of antibiotic residues in milk and discuss any one in detail. (10)

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