

**MAHARASHTRA ANIMAL AND FISHERY SCIENCES UNIVERSITY, NAGPUR**  
**SEMESTER END THEORY EXAMINATION, B.Tech. (D.T.)**

Semester	: 5 <sup>th</sup> (V Dean)	Academic Year	: 2024-2025
Course No.	: DM-505	Course Title	: <b>Quality and Safety Monitoring in Dairy Industry</b>
Credits	: 2+1=3	Total Marks	: 50
Day & Date	: Wednesday; 23/04/2025	Time	: 2.00 hrs.

- Note :**
- 1) All questions from **Section 'A'** are compulsory.
  - 2) Solve **Any Three** questions from **Section 'B'**.
  - 3) Draw neat and well labeled diagram wherever necessary.

**SECTION - 'A'**

Q. 1 A) Choose the most appropriate answer from the options given below. (05)

- i) PRPs in Food Safety stands for .....
  - a) Pre-Registered Procedures
  - b) Principal Referred Procedure
  - c) Prerequisite Program
  - d) Prerequisite Plan
- ii) Which of the following is a Gram positive pathogenic genus?
  - a) *Salmonella*
  - b) *Clostridium*
  - c) *Psuedomonas*
  - d) *Escherichia*
- iii) In a biosensor which component converts recognition event into a measurable signal (transforms responses to a processable signal) .....
  - a) Bioreceptor
  - b) Display
  - c) Transducer
  - d) Analyte
- iv) A bacterial pathogen in a food product can be catagorized as .....
  - a) Physical hazard
  - b) Biological hazard
  - c) Chemical hazard
  - d) Metaphysical hazard
- v) Aerobic plate count limit for Pasteurized Butter as per FSSAI is ..... CFU/g for microbiological limit (m)
  - a) 25,000
  - b) 30,000
  - c) 50,000
  - d) 60,000

B) Define the following. (05)

- i) Mycotoxins
- ii) Coliforms
- iii) Critical control point (CCP)
- iv) HACCP
- v) Botulism

Q. 2 A) Answer in one line / Expand the following. (05)

- i) Travelers Diarrhea is caused by which organism?
- ii) Elaborate CAC.
- iii) Latest version of ISO 22000 FSMS came up in which year?
- iv) In 12 steps of HACCP, "Assembling the HACCP team" comes at which step?
- v) In HACCP, criterion that separates acceptability from unacceptability is known as?

(P.T.O.)

- B) State whether True or False. If false, rewrite the statement after making necessary corrections in underlined words. (05)
- i) Fishbone diagram is also called as "Cause and effect" or "Ishikawa diagram".
  - ii) Staphylococcal enterotoxins are heat stable in nature.
  - iii) *Chronobacter sakazakii* is a pathogen of special concern in Flavored milk.
  - iv) HACCP was originally conceptualized and operationalized in Denmark.
  - v) Green Metallic Sheen is observed as a result of growth of *E.coli* on EMB agar.

**SECTION - 'B'**

- Q. 3 A) What are different aspects of personnel hygiene in dairy industry? (05)  
B) Explain activated sludge method for treatment of dairy waste. (05)
- Q. 4 A) Define indicator organism. Describe the characteristics of an ideal indicator microorganism. (05)  
B) What is CAC? Explain its role in global harmonisation of Food safety standards. (05)
- Q. 5 A) Write a note on ISO 22000 (FSMS). (03)  
B) Elaborate the concept of "Microbiological Risk Analysis". (03)  
C) Briefly explain TQM. (04)
- Q. 6 A) Write a note on detection and enumeration of Coliforms in dairy water supply. (03)  
B) Discuss ICMSF sampling plans. (03)  
C) Enlist the methods of detection of antibiotics residues in milk and explain anyone in detail. (04)
- Q. 7 Write a note on concept, history and principles of HACCP. Make a HACCP plan for Paneer manufacturing. (10)

\*\*\*\*\*