

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

Semester	: V (V Dean)	Academic Year	: 2024-2025
Course No.	: DC-506	Course Title	: Chemical Quality Assurance
Credits	: 1+1=2	Total Marks	: 50
Day & Date	: Monday; 28/04/2025	Time	: 02:00 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) Boiling point of iso-amyl alcohol is
 - a) 129 - 131°C
 - b) 110 - 120°C
 - c) 115 - 120°C
 - d) 135 - 140°C
- ii) How many principles are there in HACCP system?
 - a) Five
 - b) Seven
 - c) Eight
 - d) Six
- iii) Milko-tester principle is based on.....
 - a) Scattering of light
 - b) UV
 - c) Infra-red
 - d) Thermo-optical
- iv) The internal volume of milk butyrometer of each 1% division is.....
 - a) 0.0125 ml
 - b) 0.125 ml
 - c) 1.25 ml
 - d) 12.50 ml
- v) Butyro-refractometer reading at 40°C for special grade ghee as per AGMARK standards is.....
 - a) 40-43
 - b) 47-49
 - c) 42-45
 - d) 31-33

B) Define the following. (05)

- i) Preservatives
- ii) Total quality management
- iii) Sanitization
- iv) Chemical hazards
- v) Normality

Q.2 A) Do as directed. (05)

- i) Give the normality of commercially available concentrated HCl.
- ii) What is the importance of HANSA test?
- iii) State primary standard solution used for standardization of NaOH.
- iv) What is the fat scale of cheese butyrometer?
- v) Name the reagent used for detection of neutralizer in milk.

(P.T.O.)

- B) State whether True or False. If false, rewrite the statement after making necessary corrections to the underlined word. (05)
- i) HACCP stands for hazardous analytical chemical control point.
 - ii) The strength of Gerber sulphuric acid for estimation of fat in milk should be 90%
 - iii) The saponification value is used to indicate the chain length of fatty acid.
 - iv) The quality control is based on proactive approach to avoid defects in products.
 - v) Glucose is used as preservative to preserve the milk samples for analytical purpose.

SECTION - 'B'

- Q.3 A) What is quality control? How do you ensure proper quality of milk in dairy industry? (05)
- B) Define sample. Enlist the guidelines necessary for sampling of milk. Describe the method of sampling for ice-cream. (05)
- Q.4 A) What do you understand by chemical contaminants? Write a note on pesticide and antibiotic residues in milk. (05)
- B) According to BIS, classify the dairy laboratories. Add a note on mobile testing laboratory. (05)
- Q.5 A) Explain any three instrumental method of milk analysis. (03)
- B) Write a note on prediction of shelf life behaviour of milk and milk products. (03)
- C) Explain the principles of HACCP. (04)
- Q.6 A) Enlist the properties of primary standard substances. How do you prepare and standardize 0.1N H_2SO_4 ? (03)
- B) Enlist the types of butyrometer. Explain in details procedure for calibration of milk butyrometer. (03)
- C) Write a note on importance of milk contact surfaces. (04)
- Q.7 Define the term adulteration. Give the classification of adulterants. Explain in details the detection methods for preservatives and neutralizers in milk. (10)
