

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

Semester	: IV (New Syllabus)	Academic Year	: 2017-2018
Course No.	: DT-406	Course Title	: Condensed & Dried Milks
Credits	: 3+2=5	Total Marks	: 50
Day & Date	: Wednesday, 20.06.2018	Time	: 15.00 to 17.00 Hrs.

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

SECTION - 'A'

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

- i) In premature/low birth weight infant milk substitute whey: casein ratio shall be
 - a) 80:20
 - b) 20:80
 - c) 40:60
 - d) 60:40
- ii) In case of sweetened condensed milk the Button formation defect is observed
 - a) At the bottom surface of the cane
 - b) In the middle matrix of the cane
 - c) Under the top surface of the milk layer
 - d) On the top surface of the milk layer
- iii) In Roller drying of milk the scraper blade sits at an angle
 - a) 5-10°
 - b) 50-60°
 - c) 15-30°
 - d) 80-100°
- iv) The maximum permissible moisture percentage under BIS specifications for WMP is
 - a) 3%
 - b) 4%
 - c) 5%
 - d) None of these
- v) The major possible defects in reconstituted milks prepared from milk powder are
 - a) Charred particles
 - b) Extraneous dirt
 - c) Churned fat
 - d) All of these

B) Answer in one line. (05)

- i) Three principle elements involved in an evaporator are?
- ii) What should be the minimum total milk solids percent in Condensed milk as per FSSR?
- iii) Why the freezing point of condensed milk is lower than evaporated milk?
- iv) What is the permitted level of lecithin in milk powder as per FSSR?
- v) How evaporated milk is preserved?

(P.T.O.)

- Q. 2 A) Do as directed. (05)
- Define Seeding.
 - Give formulae of Sugar ratio.
 - Give purpose of Pilot sterilization.
 - Define Heat stability.
 - Gassy fermentation.
- B) State "True or False", If False, rewrite the statement after making necessary corrections in underline word. (05)
- Gail Borden is the father of the process of milk condensing.
 - The pH of raw milk to be used for manufacture of dried milk should always be between 4.6 to 4.8.
 - The degree of browning and cooked flavor production in concentrated milk is directly proportional to pH.
 - The particle density is measured by Baume Hydrometer.
 - The heat stability in manufacture of evaporated milk is restored by addition of NaCl.

SECTION – 'B'

- Q. 3 Discuss the Physico-Chemical properties of condensed milk. (06)
- Q. 4 Explain in detail defects in dried milk with their causes and prevention. (06)
- Q. 5 Discuss in detail method of manufacture of malted milk foods. (06)
- Q. 6
- What are the requirements of high grade condensed milk and evaporated milk? (02)
 - What are the causes of the following defects in condensed milk. i.e. Gassy fermentation, Sandiness and Age thickening. (02)
 - Enlist various uses of condensed and evaporated milk. (02)
- Q. 7
- Nutritive value of condensed and dried milk. (03)
 - Give the composition & BIS standards for condensed milk. (03)
- Q. 8
- Why too high viscosity or too low viscosity is not desirable in condensed milk. (02)
 - Why specific gravity of condensed milk is higher as compared to milk. (02)
 - What are the advantages of condensing under vacuum? (02)
- Q. 9
- Explain the HACCP concepts in condensing and drying plants. (02)
 - Discuss the principle and methods of condensing and drying for milk and milk products. (04)
