

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

Semester	: V (V Dean)	Academic Year	: 2018-2019
Course No.	: DT-508	Course Title	: Packaging of Dairy Products
Credits	: 2+1=3	Total Marks	: 50
Day & Date	: Friday, 04/01/2019	Time	: 11.00 to 13.00 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 and indicate the most appropriate answer for the following. (05)

- i) What is the thickness (in microns) of different layers in the carton
 - a) 0.02
 - b) 0.05
 - c) 0.04
 - d) 0.01
- ii) Name the material which was first to be used as stretch film
 - a) PVC
 - b) PP
 - c) PE
 - d) None
- iii) The packaging generally used as a secondary package is
 - a) Card board boxes
 - b) Tin cans
 - c) Aluminium foils
 - d) None of these
- iv) Which of the following is used for making edible protein based films
 - a) Corn
 - b) Wheat
 - c) Collagen
 - d) All of these
- v) Principle gas used in MAP
 - a) Oxygen
 - b) CO₂
 - c) Nitrogen
 - d) All of these

B) Define the following. (05)

- i) Pulping
- ii) Bursting Strength
- iii) Primary Package
- iv) Passivation
- v) Surface Oiling

Q. 2 A) Give reasons for the following. (05)

- i) Why pre sterilization of packaging material is necessary?
- ii) Plastics are replaced with glass as a packaging material in fluid milk.
- iii) Why grease proof paper are used for packing of fat rich dairy products?
- iv) Why tin plates are lacquered when used in a packaging material?
- v) Why only food grade plastics are used for packaging milk and milk products?

- B) State whether True or False. If false, rewrite the statement after making necessary corrections. (05)
- i) The plastic film used as shrinkable wrap is PVDC.
 - ii) PVC can resist sterilization and freezing process.
 - iii) Bursting strength is conducted to measure strength and deformability of packaging material.
 - iv) Glass can easily be used for long distance transportation.
 - v) The thickness of aluminum foil is 0.012 – 0.015 mm.

SECTION – 'B'

- Q. 3 A) What do you mean by edible packaging? Write its importance. (05)
B) Explain the properties of LDPE, HDPE. (05)
- Q. 4 A) Explain CAP and MAP. (05)
B) Write the application and uses of CAP and MAP in extending the shelf life of various dairy products. (05)
- Q. 5. Explain the following.
- A) Plastics. (03)
 - B) Tins (03)
 - C) Aseptic packaging of UHT milk. (04)
- Q. 6 Explain the following.
- A) Vacuum packaging (03)
 - B) Intelligent Packaging (03)
 - C) Coding and labelling of food package. (04)
- Q. 7 Describe the history and evolution of packaging and write its functions. (10)
