

I Fill in the blanks

- 1 Security office should be near the -----
- 2 -----milk plant should be situated/located as close as possible to the consumer area.
- 3 Specific gravity is a ----- (physical/chemical/microbial,etc.) property.

Match the Following

- | | |
|------------------|------------|
| 4 Pasteurisation | a Polyfilm |
| 5 Milk reception | b Freezing |
| 6 Ice – cream | c Dock |
| 7 Filling | d HTST |

State True or False

- 8 Milk must be stored at temperatures below 7°C.
- 9 Unit for capacity of refrigeration is tons of refrigeration.
- 10 Boiler is a piece of equipment to boil milk.

II Write Short notes on any FIVE of the following

(5x2=10)

- 1 Enlist the equipment for reception of milk processing plant on the RMRD and explain in brief any one of them.
- 2 Write a short note on three tier structure of “Anand Pattern”.
- 3 Write a short note on water activity.
- 4 What are the physical properties of food?
- 5 Draw a flow chart for manufacture of butter from cream.
- 6 Diagrammatically explain different membrane separation processes.
- 7 Briefly explain what is chilling?

III Answer any FIVE of the following.

(5x4=20)

- 1 Draw neat and labelled diagram of film path for vertical form fill and seal machine.
- 2 Briefly explain points to consider while preparing a process schedule.
- 3 Draw neat and labelled sketch of continuous butter making machine using Alfa laval process.
- 4 How to estimate Refrigeration requirement?
- 5 What is the purpose of drying of milk?
- 6 Estimate the drying rate and time needed to reduce the moisture content of a 100 m diameter spherically shaped droplet, falling in a spray dryer from 60 to 35 %. The initial density of the droplet is 900 kg/m³. The droplet is in an air stream such that T_∞ = 200 °C, P = 101.3 k Pa, h = 200 w/m² °C and T_{wb} = 60 °C. Assume that constant rate drying applies over the total drying process and droplet doesn't change in size.
- 7 Illustrate the importance of evaporation process. Explain a climbing film evaporator?

IV Write an essay on any ONE of the following

(1x10=10)

- 1 With neat diagram discuss batch sterilization equipment and continuous in-can sterilization equipment.
- 2 Describe Hermetic cream separator with illustrations.
