

MAHARASHTRA AGRICULTURAL UNIVERSITIES EXAMINATION BOARD, PUNE
SEMESTER END THEORY EXAMINATION

B.Tech. (Food Technology)

[ICAR-Sixth Deans' Committee Recommended Syllabus]

Semester	: II (New)	Term	: Second	Academic Year	: 2024-25
Course No.	: FE-125	Title	: Unit Operations in Food Processing		
Credits	: 3(2+1)	Time	: 10:00 to 13:00 hrs.	Total Marks	: 80
Day & Date	: Thursday, 03.07.2025				

- Note :
1. Solve ANY EIGHT questions from SECTION 'A'.
 2. All questions from SECTION 'B' are compulsory.
 3. All questions carry equal marks.
 4. Draw neat diagram wherever necessary.

SECTION 'A'

- Q.1 What do you mean by Shallow fat frying process? Discuss in detail about vacuum fryer.
- Q.2 a) Write a brief note on batch crystallizer.
b) Enlist the different baking ovens with their applications.
- Q.3 Write a brief note on steam blancher and explain the batch sterilization process of food.
- Q.4 Write the principle of evaporation and describe the effect of feed liquor properties on evaporation.
- Q.5 a) Write a brief note on different equipments used in emulsification process.
b) State the advantages and disadvantages of aseptic processing.
- Q.6 Write the principle of food freezing and explain the plate freezer with its advantages, disadvantages and application in food industry.
- Q.7 Give the classification of evaporators and describe horizontal short tube evaporator with its neat diagram.
- Q.8 Write short notes on:
a) Freeze drying
b) Vacuum distillation
- Q.9 Enlist different types of heat exchanger and explain in detail about plate type heat exchanger.
- Q.10 Draw a well labeled diagram of screw press expeller with its working and write the applications of liquid-liquid extraction process.

(P.T.O.)

SECTION 'B'

Q.11 Define the following terms:

- 1) Freeze burn
- 2) Distillation
- 3) Homogenization
- 4) Thawing
- 5) Asepsis
- 6) Pasteurization
- 7) Blanching
- 8) Cryogenic freezing

Q.12 Fill in the blanks:

- 1) Freeze drying is also called as _____.
- 2) _____ refers to the ability of a substance to exist in multiple crystalline forms.
- 3) Milk is an example of _____ in _____ emulsion.
- 4) _____ is a fat fryer that cooks food under increased atmospheric pressure.
- 5) The dry ice is a solid form of _____, which is used in cryogenic freezing.
- 6) As the concentration of solute increases, there is _____ in boiling point of solution.
- 7) The main application of blanching of fruit and vegetables is to _____ the enzymes.
- 8) In High-Temperature Short-Time pasteurization process, milk is heated at 72°C for _____ second.

