KERALA AGRICULTURAL UNIVERSITY
B. Tech. (Agri. Engg.) 2023 & Previous Admissions
VI Semester Final Examination – June 2026

Fape 3207

**Dairy and Food Engineering (2+1)**

**Marks: 50**
**Time: 2 hours**

I **Fill in the blanks** (10x1=10)

1. Yellowish tinge in milk is attributed due to .....
2. Processing temperature is kept ..... in membrane filtration applications.

**Match the following**

| | | | |
|---|---|---|---|
| 3. | Water adulteration | i. | Turbidity test |
| 4. | Sterilization | ii. | Freezing point |
| 5. | Pasteurization | iii. | Boiling point |
| 6. | Duhring chart | iv. | Phosphatase test |
| 7. | Pasteurizer | v. | Piston pump |
| 8. | Spray dryer | vi. | Doctors blade |
| 9. | Roller dryer | vii. | FDV |
| 10. | Homogenizer | viii. | Atomizer |

II **Write short on ANY FIVE of the following** **(5x2=10)**

1. What are intrinsic parameters and extrinsic parameters which affect both the foods and their microorganisms?
2. Give the process flow chart for manufacturing of paneer.
3. Write down the factors affecting composition of milk.
4. Write down short note on fouling of heat exchanger.
5. Importance of water activity
6. What is bactofugation process?
7. List out the types of evaporators.

III **Answer ANY FIVE of the following** **(5x4=20)**

1. Draw the flow chart of HTST pasteurization system and explain the flow process.
2. Elaborate the different membrane separation processes.
3. What are the basic requirements of food packaging?
4. Applications of nanotechnology in food processing
5. Draw the schematic diagram of aseptic plastic pouch filling.
6. What are the changes occurred during boiling of milk?
7. A drum dryer is being designed for drying a product from an initial total solid content of 12% and a final moisture of 4%. An average temperature difference between the roller surface and the product of 65°C will be used, and the overall heat transfer coefficient is 1500 kcal/h-$m^2$-°C. Determine the surface area of the roller required to provide a production rate of 50 kg product/h.

IV Write an essay on ANY ONE of the following (1x10=10)

1. Explain different types of deterioration in food products and their controls in food preservation.
2. Write down short note on:
   (i) Powder recovery system
   (ii) Agglomeration
   (iii) Freeze drying

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