KERALA AGRICULTURAL UNIVERSITY
B.Tech.(Food Engg. & Technology)
VIII Semester Final Re- Examination – August 2023
2019 Admission

Fden.2205 **Food Process Engineering (2+1)** **Marks: 50**
Time: 2 hours

I **Match the following** **(10x1=10)**

1.	Raoult's law	a) Enzyme inactivation
2.	Blanching	b) Milk
3.	Plank's formula	c) Behavior of ideal solution
4.	Spray drying	d) Pasteurization
5.	Phosphatase test	e) Freezing

State True or False

6. In the concept of decimal reduction time, a total microbial destruction is ensured.
7. Blanching is carried out to kill all the microorganisms in vegetables.
8. Unbound moisture content exerts a vapor pressure equal to the vapour pressure of pure water at the same temperature.
9. Ice crystals formed during quick freezing are generally larger than those formed during a slow freezing process.
10. The dry bulb temperature of an air-water vapor mixture is equal to the dew point temperature when the relative humidity is equal to 100%.

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

1. Equilibrium moisture content
2. Define Z value.
3. Define Pasteurization.
4. Write the principle involved in infrared heating process.
5. Reynolds number
6. Principle of Freeze drying
7. Differentiate texture, consistency and viscosity.

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

1. Role of hysteresis in food quality
2. Illustrate Newton's law of viscosity.
3. Explain the working principle of different types of dryers.
4. A spherical food product is being frozen in an air-blast freezer. The initial product temperature is 10°C and the cold air - 40°C. The product has a 7 cm diameter with density of 1000 kg/m^3, the initial freezing temperature is - 1.25°C, the thermal conductivity of the frozen product is 1.2 W/(m K), the latent heat of fusion is 250 kJ/kg and convective heat transfer coefficient is 50 W/m^{2}K. Compute the freezing time.
5. Describe the significance of water activity in food preservation.
6. Explain the design and operation of pneumatic conveyor.
7. Elucidate food fermentation.

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

1. Explain in detail about high pressure processing of foods.
2. Explain the different phases of drying and the factors affecting drying.

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