



KERALA AGRICULTURAL UNIVERSITY
B.Tech. (Food Technology) 2022 Admission
IV Semester Final Examination – July 2024

Pafe.2220

Unit Operations in Food Processing - II (2+1)

Marks: 50
Time: 2 hours

(10x1=10)

I Choose the correct answer

1. The latent heat of vaporization is the
 - (a) amount of energy required to affect the state transition.
 - (b) amount of energy required to affect the heat transfer.
 - (c) amount of energy required to affect the fermentation.
 - (d) amount of energy required to affect the scaling.
2. The best way to avoid particulate fouling is to keep the and thereby prevent particles from entering the heat exchanger.
 - (a) solvent clean
 - (b) chemical clean
 - (c) cooling water clean
 - (d) none of the above
3. Which of the following is a natural circulation boiler?
 - (a) Cochran
 - (b) Velox
 - (c) Benson
 - (d) Lamont
4. The freezer temperature should be
 - (a) 0° F (-18° C).
 - (b) 10°F (-12.2°C).
 - (c) -10°F (-23.3°C).
 - (d) 100°F (37.7°C).
5. Freezing is a natural preservation process which does not require the use of
 - (a) additional preservatives.
 - (b) additional heating.
 - (c) additional cooling.
 - (d) additional evaporation.
6. Freezing is a phase transition where a liquid turns into a solid when its temperature is its freezing point.
 - (a) high above
 - (b) equal to
 - (c) lowered below
 - (d) all the above
7. Liquid-liquid extraction is a separation process consisting of the transfer of a from one solvent to another, the two solvents being immiscible or partially miscible with each other
 - (a) solute
 - (b) heat
 - (c) internal energy
 - (d) solvent
8. Leaching rate =
 - (a) heating per unit time
 - (b) cooling per unit time
 - (c) removal of heat per unit time
 - (d) concentration of solute recovered per unit time

9. Pasteurization is a process that applies heat to destroy in foods.
- (a) milk
 - (b) pathogens
 - (c) heat
 - (d) none of the above
10. A process that destroys or eliminates all forms of microbial life and is carried out in health-care facilities by physical or chemical methods is called
- (a) Sterilization
 - (b) Pasteurization
 - (c) Leaching
 - (d) Extraction

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

1. Define evaporator capacity.
2. What is meant by boiling point rise (BPR)?
3. Which type of evaporator is best for extremely heat-sensitive substances?
4. What is freezing food?
5. What is leaching in food processing?
6. Which gas is used in freeze drying?
7. What are the types of roasting?

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

1. What are the different types of feeding in evaporator?
2. What is evaporator fouling?
3. A formulated food product contains the following components – water 80%, protein 2%, carbohydrate 17%, fat 0.1% and ash 0.9%. Predict the specific heat in W/kg K using Choi's and ko's model.
4. State the principle of the freeze-drying process?
5. State the application of distillation in food processing.
6. What is meant by blanching?
7. What is the temperature and time for food sterilization?

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

1. Explain the types of distillation in food processing.
2. Explain the objectives and principals of sterilization in food processing.
