



KERALA AGRICULTURAL UNIVERSITY
B.Tech.(Agri. Engg.) 2022 & Previous Admissions
VI Semester Final Examination - June 2025

Fape.3206

Post Harvest Engineering of Horticultural Crops (1+1)

Marks: 50
Time: 2 hours

I Choose the correct answer

(10x1=10)

1. Lye peeling is done at temperature ($^{\circ}\text{C}$):
 - A. 75
 - B. 84
 - C. 93
 - D. 105
2. "Environment" in relation to shelf life simulation is:
 - A. Temperature only
 - B. Temperature and oxygen content
 - C. Temperature and relative humidity
 - D. Temperature, relative humidity and oxygen concentration
3. Liquid nitrogen is used in:
 - A. Plate freezer
 - B. Freezing tunnel
 - C. Freeze dryer
 - D. Cryogenic freezer
4. The density of foods after freezing:
 - A. Increases
 - B. Decreases
 - C. Unchanged
 - D. First increase and then decreases
5. During fruit juice canning pasteurization is done at the temperature ($^{\circ}\text{C}$):
 - A. 80
 - B. 77
 - C. 74
 - D. 71

State True or False

6. Post harvest technology does not have potential to create rural industries.
7. Perishable foods have low moisture content.
8. Preservative action of sodium benzoate is reduced in presence of acidic medium.
9. Ethylene does not cause serious disorder in leafy vegetables and flowers.
10. Acetic acid is used in preservation of chutney.

II Write short on ANY FIVE of the following

(5x2=10)

1. Differentiate between controlled atmosphere storage and modified atmosphere storage.
2. Explain the "air change load" and "product load" in cooling load calculations.
3. Enlist the points to be kept in mind for the development of successful package for food products.
4. What do you understand by abiotic spoilage? Discuss the role of water in food spoilage?
5. How does quick freezing be more advantageous than the slow freezing?
6. What is osmotic dehydration? Write its advantages.
7. What are the changes occur in fruits/vegetables during freezing or chilling?

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

1. Describe the basic requirements of packaging materials. Which factors are to be considered for the objective assessment of packaging material?
2. What are the main objectives of “blanching”? Discuss the factors affecting the blanching time.
3. Explain the working principle of fluidized bed dryer along with its merits.
4. Explain the unit operations used in tomato processing plant. Enlist the name of preservatives used to preserve the tomato sauce.
5. 110 kg of lean poultry is first cooled from 20 °C to 4 °C, there after it is further cooled and frozen to -20 °C. Specific heat of poultry is 3.21 KJ/Kg°C and below freezing point is 1.71 KJ/Kg°C. The freezing point of poultry is -2.8 °C and the latent heat of fusion is 246.8 KJ/Kg. Calculate the total heat load.
6. Discuss the principal factors affecting the growth of micro organisms responsible for food spoilage.
7. Discuss in brief the quality control in Fruit and vegetable processing industry.

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

1. Discuss pack house technology. Explain different types of packaging materials commonly used for raw and processed fruits and vegetables products.
2. Explain drying methods briefly. Describe the Freeze drying process. What are the advantages and disadvantages of cryogenic freezing?
