



KERALA AGRICULTURAL UNIVERSITY
B. Tech. (Agrl. Engg.) 2021 Admission
VI Semester Final Examination – June 2024

Fape.3206

Post Harvest Engineering of Horticultural Crops (1+1)

Marks: 50
Time: 2 hours

I Match the following (10x1=10)

	Column-A		Column-B
1.	Freeze concentration	A.	Temperature above 100 ⁰ C
2.	Blanching	B.	Roller crusher
3.	Sterilization	C.	Fruits and vegetables
4.	Drum drying	D.	Polypropylene
5.	Grading of fruits	E.	Cell wall rupture
6.	Sugarcane juice extraction	F.	Minimal processing
7.	Packaging material	G.	Classification based on quality fraction
8.	Peeling, slicing, grating, shredding	H.	Conduction heat transfer
9.	Formation of large ice crystals during freezing	I.	Juices
10.	Hermetic container	J.	Impervious to air

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

1. Define minimal processing of horticultural crops.
2. Enlist the factors affecting osmotic dehydration.
3. What is chilling injury in fruits and vegetables?
4. Enlist any four the advantages of surface coating of horticultural crops.
5. Make a flowchart for the preparation of mango squash.
6. What is foam mat drying? Write the name of two foaming agents.
7. What is the working principle of mechanical peeler used in potato peeling?

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

1. What are the differences between constant rate drying and falling rate drying of horticultural crops?
2. What is the principle of evaporative cooled storage?
3. Write the differences between controlled atmosphere and modified atmosphere packaging.
4. How to control the slicing of potatoes in a mechanical slicer? Write the type of steel grade used for manufacturing of slicer.
5. Explain the food supply chain using detailed flowchart.
6. What are the requirements of an ideal packaging material to pack the food products?
7. Why does the calculation of freezing time important? Write the plank's equation of the freezing time.

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

1. Discuss in detail the types of heat loads considered, construction material, and site selection, size of cold store, suspended ceilings, insulation, vapour barriers, doors, and choice of refrigerant during cold store design.
2. Discuss in detail the physical, chemical and biological methods of food preservation.
