

Term End External Examination 1st Semester (Session-Feb 2025)

Subject: Skill Enhancement Course

Course No and Title: FST322S/ Handling and Storage of Fruits and Vegetables

Time: 1.15 hours Max Marks:50 Min. Marks:20

Section A: Objective Type Questions

Q1. Choose the appropriate Answer: (4x1.5=06)

i. Which gas composition is ideal for Modified Atmosphere Packaging (MAP) of apples

A 21% O₂, 0% CO₂, 79% N₂ **B** 2-5% O₂, 1-3% CO₂, 90-95% N₂

C 15% O₂, 20% CO₂, 65% N₂ **D** 0% O₂, 100% CO₂

ii. A fruit with a high respiration rate at harvest is likely to:

A Have a longer shelf life **B** Require controlled atmosphere storage

C Be highly resistant to microbial spoilage **D** Not require ethylene treatment for ripening

iii. J&K contributes significantly to the production of which high-value processed fruit product?

A Canned pineapple **B** Dehydrated grapes

C Apple pulp and concentrates **D** Frozen citrus fruits

iv. Which classification of fruits is based on respiration rate?

A Acidic and non-acidic **B** Ripening and non-ripening

C Hard and soft fruits **D** Climacteric and non-climacteric

Section-B: Descriptive Type Questions (Short Type)

Q2: Answer all the Questions (4 x 4 =16)

i. How does mechanical injury accelerate post-harvest deterioration in vegetables?

ii. Explain why ethylene regulation is critical in post-harvest storage.

iii. Explain the role of antioxidants in preventing oxidative spoilage

of stored fruits and vegetables

iv. What are the main constraints in the development of cold chain infrastructure in J&K?

Section – C: Descriptive Type Questions (Medium Type)

Answer all the questions: (2 x 7=14)

Q3. Describe the principles of refrigeration technology and its application in fruit storage. Discuss the economic impact of post-harvest losses in J&K's fruit industry

OR

Discuss the impact of post-harvest enzymatic changes on fruit texture, colour, and flavour.

Q4. Explain the concept of Modified Atmosphere Packaging (MAP) and how it differs from Controlled Atmosphere Storage.

OR

Differentiate between physiological maturity and horticultural maturity in fruits.

Section – D: Descriptive Type Questions (Long Type)

Answer any one of the following: (1 x 14=15)

Q5. Discuss various maturity indices used for major fruits and vegetables, and how incorrect harvesting can lead to significant quality defect.

Q6. Discuss in depth the post-harvest handling strategies for climacteric and non-climacteric fruits. How do their storage methods differ, and what challenges are associated with their transportation?