

M. TECH. (F.T.B.E.) EXAMINATION, 2008
(1st Semester)

ADVANCED FRUITS AND VEGETABLES TECHNOLOGY

Time : Three hours

Full Marks : 100

Use a separate Answer-Script for each part.

PART-I (64 marks)

*Attempt any **four** questions.*

All questions carry equal marks.

1. Discuss the present scenario of fruits and vegetables processing industries in India. Give suggestions for future development. Name various products and by-products which can be prepared from mango. How is aseptically packed R.T.S drink from mango manufactured ? 16
2. How shelf life of agrocommodities increases under control atmosphere ? Explain possible biochemical changes happen in fruits in control atmosphere. How is ethylene produced during ripening of fruit ? Name a few ethylene scavengers. What precautions should be taken for storage of climacteric fruits ? Explain MAP system for litchi. 16
3. Give a flowsheet for the preparation of canned pineapple. State the importance of exhausting and cooling in canning.

[TURN OVER]

(2)

How do you determine concentration of sugar in the filling liquor ? What type of can is used ? What is the processing condition ? Discuss cut out test for canned products. 16

4. Discuss the factors which affect quality of potato chips ? How are frozen potato fingers and mashed potato powder prepared ?

Explain storage condition and quality of potato for chips. Name various by-products from potato processing waste.

16

5. Explain flavour. 'Flavour is evaluated by subjective and objective methods' — Justify. How do you select panelists? What is bioflavour ? Discuss behaviour of thixotropic fluid. How is textural quality of solid food measured in Instron ?

16

6. Short notes on (any four) : 4×4=16

- (i) Fermented vegetables
- (ii) Water activity of food
- (iii) Mango diseases
- (iv) Pectin from fruit waste
- (v) T test
- (vi) Black neell in tomato products
- (vii) Plastic laminates for fried foods.

(3)

PART-II (36 marks)

Attempt any two questions.

All questions carry equal marks.

(18×2)

7. Discuss the quality criteria for overall selection of fruits and vegetables, and also their pulp and products. Give suitable examples for maintaining standards of such products derived from fruits. Compare the quality parameters between mango pulp and orange juice.
8. What is the importance of sugar in fruit and vegetable processing ? How would you estimate reducing sugars, non-reducing sugars and total sugars in a fruit juice ? Discuss microbiological quality of sugars.
9. What do you mean food additives ? How would you classify the food additives. With four suitable examples, explain the working principle of food additives. What are the natural sources of food additives ? What is nutraceuticals ? What is the safety parameters of food additives ?
10. Write short notes on (any four) :
- a) Food antioxidant
 - b) Accelerated ripening process
 - c) Phytosanitary conditions
 - d) Tomato pulp and puree
 - e) Pickles in vinegar
 - f) Tomato sauce and Ketch-up.