

B.E (FTBE) THIRD YEAR, FIRST SEMESTER EXAMINATION 2025

FOOD PROCESS TECHNOLOGY – III

Time : Three hours

Full Marks: 100

(50 Marks for each Part)

Use separate answer scripts for each Part

PART I (50 Marks)

ANSWER Q1 AND ANY TWO FROM THE REST

Q1. Fill in the blanks:

10 × 1 = 10

1. The high-volatile components of a spice are collectively termed as.....
2. To estimate quantity of '1' in the laboratory, you will need.....equipment.
3. A 'made-to-order' spice flavoring is generally manufactured byprocedure.
4. Maximum compatibility with cocoa butter is with.....type of specialty fat.
5. In chocolate manufacture, maximum size reduction of the feed occurs by the process.....
6. The dominant fat crystal habit in a chocolate exhibiting 'characteristic snap' is.....
7. The melting profile of the above chocolate would be essentially governed by theprocessing step during its manufacture.
8. *Nutties*, the Cadbury snack is manufactured by the process of.....
9. Heat exchangers used in plastic fat manufacture must be incondition, unlike those used in fruit juice manufacture.
10. Gingerol is theprinciple of ginger.

Q2. With the aid of diagrams, describe the manufacturing processes of (any 2): 2 × 10 = 20

- a. Chocolate enrobed goods
- b. Cocoa powder explaining the CCPs involved
- c. Milk chocolate having the following characteristics: brittleness, gloss, mouth-melting

Q3. Distinguish between (any 5):

5 × 4 = 20

- a. Quality specifications for King vs. Queen of spices
- b. Natural vs. Made-to-order clove-bud oil
- c. Top notes vs. Bottom notes of Cinnamon bark extract
- d. Role of N₂ in a package of Potato chips vs. in Shortening manufacture
- e. Tuberose Concrete vs. Absolute
- f. CBR vs. CBS fats

Q4. Describe (any 2):

2 × 10 = 20

- a. Manufacture of dark chocolate for its special flavor and characteristic snap
- b. Roles of -High Pressure Pump; Picker; Chiller, First and Second Extrusion Valves in plastic fat manufacture
- c. Determination of capsaicin content, ASTA color value and SHU for red chillies

B.E. FOOD TECHNOLOGY AND BIO-CHEMICAL ENGINEERING THIRD YEAR FIRST SEMESTER - 2025

Food Process Technology III

Time: 3 hours

Full Marks: 100

Part II(Marks 50)

Answer Q1 and any two(Q2-Q5) questions from the following: 5x6+2x10

1. Explain the following: 5x6

- a) effect of processing on colour of tomato products
- b)improvement of nutritional quality of fermented foods.
- c)enzymatic clarification of fruit juice
- d) weeping of jelly
- e) deaeration of fruit juice

2. Comment with specifications:

Tomato paste and tomato puree.

5+5

3 a)Classify the following commodities according to their rate of respiration:

beet, cucumber, cauliflower, mushroom, nuts and dates.

b) Classify the following fruits according to ethylene production rate:

pomegranate, sapota, apple, guava, grape and lychee

c) Mention the unit of respiration rate and ethylene production rate.

d)Give one example each of climacteric and non climacteric fruit. 3+3+2+2 .

4. Explain different types of fruit juice based products. What is the principle of Osmotic dehydration technique ? 7.5+2.5

5. Write short notes on any two of the following:

2x5

- a)probiotics
- b)osmotic dehydration of pineapple
- c)changes in colour and flavour of fruits during ripening