

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

FOOD PROCESS TECHNOLOGY - IV

Time : Three hours

(50 Marks for each Part)

Full Marks : 100

Use separate answer scripts for each Part

PART- I (50 MARKS)

Answer Q1 and any TWO from the rest

Q1. I. Describe the following (any 1):

1 × 10 = 10

- a. Soft drink manufacture mentioning the CCPs
- b. Manufacture of 10-fold vanilla flavor mentioning the CCPs

II. Define the following:

5 × 2 = 10

- a. Nutraceutical
- b. Primary flavoring
- c. Technical enzyme
- d. Instant soluble coffee
- e. KFO

Q2. Differentiate between (any 3):

3 × 5 = 15

- a. Dry processing vs. Wet processing of Coffee beans at origin
- b. Solvent-free oil extraction vs. Solvent extraction of garlic oil
- c. Enzymatic clarification of Beer vs. Fruit juices
- d. Steam distillation vs. Hydro-distillation of lemon grass
- e. Removal of turbidity in cold tea With vs. Without enzymes

Q3. Analyze the challenges during manufacture of the following products and suggest ways to redress the same (any 3):

3 × 5 = 15

- a. Preservation of natural antioxidants in a nutraceutical beverage
- b. Cocoa powder
- c. Banana flavor
- d. Encapsulated clove bud flavor

Q4. Enumerate the following with examples.

I. The roles of the following enzymes in food processing (any 3):

3 × 4 = 12

- a. β -amylase
- b. Papain
- c. Glucose oxidase
- d. Phytase

II. The finishing operations in instant coffee manufacture that dictate its market value.

3

[Turn over

Ref. No. : Ex/FTBE/PC/B/T/325/2025

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

FOOD PROCESS TECHNOLOGY IV

Time: 3hours

Total Marks: 50

Part II

Answer any five questions from the following: 5x10

1. What is curd tension? Mention the curd tension of soft curd milk and hard curd milk. What is soft curd milk? State the methods of preparation of soft curd milk. 2+2+2+4
2. a) What is sweetened condensed milk? Write the milk fat and milk solids content of sweetened condensed milk and sweetened condensed skimmed milk.
b) 762L of sweetened condensed milk contains 9.2% milk fat, 31.2% total milk solids and 40.5% cane sugar. Calculate the specific gravity of the product at 15°C 2+4+4
3. What is homogenization? Explain important factors for homogenization. What is meant by homogenization index? 2+5+3
4. a) Explain the functions of stabilizer and emulsifier for icecream manufacture.
b) 950L of icecream was made from 485L of icecream mix. Find the % over run in ice cream. 3+3+4
5. Explain withering and fermentation of tea leaf for black tea production. What is decaffeinated tea? 2.5+4.5+3
6. a) State three factors affecting composition of milk? Explain about casein of milk.
b) A sample of skim milk powder contains 0.10% fat and 96.3% SNF and water. How much water is required for reconstituted skim of 8.85% SNF. 3+3+4
7. Write short note on (any two): 2x5
a) soft serve icecream. b) sterilized milk c) olong tea d) carbohydrate in milk