Ref. No: Ex/FTBE/PC/B/T/314/2024

B.E (FTBE) THIRD YEAR, FIRST SEMESTER EXAMINATION 2024
FOOD PROCESS TECHNOLOGY - III

Time : Three hours (50 Marks for each Part) Full Marks : 100

Use separate answer script for each Part

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FOOD PROCESS TECHNOLOGY - III
PART- I (50 MARKS)
ANSWER Q1 AND ANY TWO FROM THE REST

Q1. Fill in the blanks: **10 × 1 = 10**

1. The lipophilic resinous part of spices are known as.....
2. Flavor analysis of foods is rendered easy because you need to only identify.....number of KFOs.
3. Moisture content of spices must be determined using.....
4. A supercritical CO_2 extract of a botanical is 'neat' because.....
5. Flavors can be protected from oxidative deterioration by the process of .....
6. Maximum compatibility with cocoa butter is with.....type of specialty fat.
7. The characteristic snap in chocolate would be due to.....
8. Maximum size reduction occurs during .....processing step during chocolate manufacture.
9. Fats manufactured by.....process can have their unsaturation unchanged.
10. Heat exchangers used in plastic fat manufacture must be in .....condition, unlike those used in fruit juice manufacture.

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

a. 100-fold vanillin
b. Microencapsulated turmeric oleoresin for use in dairy beverages
c. Dark chocolate

Q3. Distinguish between (any four): **4 × 5 = 20**

a. Alcohol co-distillation vs. for flavors from banana peel vs. Counter-current extraction for flavors from orange peel
b. 'Natural' clove-bud oil vs. 'Made-to-order' clove-bud oil
c. High stability oils vs. Summer oils
d. Solvent extraction vs. Solvent-free oil extraction of flavors
e. CBR vs. CBS fats

Q4. Describe (any four): **4 × 5 = 20**

a. Enrobing of chocolate goods
b. Manufacture of plastic shortening

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B.E. FOOD TECHNOLOGY AND BIO-CHEMICAL ENGINEERING THIRD YEAR FIRST SEMESTER - 2024

Food Process Technology III

Time: 3 hours Full Marks: 100

Part II(Marks 50)

Answer any five questions from the following: 5x10

1. State five causes of post harvest losses? Explain the changes in starch and flavouring compounds of fruit during ripening. 5+5

2. 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

3. What is meant by lactose intolerance? Define with example probiotics. What are the advantages of fermented food? 2.5+2.5+5

4. Comment on heavy tomato paste, medium and heavy tomato puree. Explain with flow chart manufacture of tomato juice. 6+4

5. What is fruit juice cordial? What is deaeration? Explain enzymatic clarification of fruit juice. 2.5+3.5+4

6. What is jelly? Explain Fibril theory of pectin gel formation. Why cloudy jelly is formed? 1.5+3.5+5

7. Explain about the effects of following parameters on Osmotic process:

   Pretreatments, shape and size of fruit pieces, ratio of fruit pieces to osmotic solution, concentration of osmotic solution and agitation 5x2

8. Write short notes on(any two): 2x5
   a. Pectic enzymes,
   b. end point detection of jelly.
   c. hot pulping of,tomato.
   d. mass transfer in osmotic concentration process.