

Ref. No.: EX/FTBE/T/411/2017(S)

B.FTBE 4TH YEAR 1ST SEM EXAM SUPPLEMENTARY- 2017

Food Process Technology- IV Time: Three hours Full Marks : 100

(50 Marks for each part)

Part-I

Use separate answer script for each part

Answer question 1 and any two from the rest

1. Comment on:

a) Salt balance of milk

b) Milk carbohydrate and milk protein

c) Homogenization degree

d) soft curd milk

4x5

2.a) Explain the following:

i) over run and shrinkage of ice cream

ii) function of stabilizer and emulsifier for ice cream manufacture

b) What is diabetic ice cream?

c) Ice cream weighing 0.548 kg/lit is being made from ice cream mix weighing 1.08 kg/lit. Calculate % overrun in the ice cream.

2x5+2+3

3. Discuss about:

a) Different steps of production of sweetened condensed milk

b) Important factors for spray drying of milk

2x7.5

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4. Write short notes on (any 3):

a) Atomizer

b) malted milk

c) classification of spray drier

d) quality of milk powder

3x5

B B.E (FTBE) 4TH YEAR, IST SEMESTER SUPPLEMENTARY EXAM 2017**FOOD PROCESS TECHNOLOGY -IV****TIME: 3 H****FULL MARKS = 100****PART- II (50 MARKS)****USE SEPARATE ANSWER SCRIPT FOR EACH PART**Answer **Q5** and **any Two** from the rest

- Q5.** a. Outline the steps of manufacture of instant coffee. 4
- b. How is food allergy different from food intolerance? Which are the non-thermal processing techniques to reduce risks of food allergens? 2 + 4
- c. How does 'Black tea' differ from that of 'Green tea'? 5
- d. A suspension containing 3×10^5 spores of organism A having a D value of 1.5 min at 121.1°C and 8×10^6 spores of organism B having a D value of 0.8 min at 121.1°C is heated at a uniform constant temperature of 121.1°C. Calculate the heating time for this suspension at 121.1°C needed to obtain a probability of spoilage of 1/1000. 5
- Q6.** a. Name the protein superfamilies of food allergens present commonly in foods with two examples of allergens in each category. Which regulatory body controls the levels of food allergens? Why is proteolysis not effective in combating food allergy? 2 + 1 + 1
- b. What are the quality specifications of water used in soft drink manufacture? What is the composition of the flavor syrup in soft drinks? How is this drink carbonated? 2 + 2 + 2
- c. Heat penetration curve is plotted for a canned food processed in a retort at 250°F. It took 5 min from the introduction of steam to the time the retort reached 250°F. If the initial product temperature was 160°F and steam was introduced into the retort for 35 min, determine the F_0 value by Stumbo's procedure taking data from relevant tables. Given: heating and cooling curves parameters $f_h = f_c = 24$ min; $J_h = 1.4$ and $J_c = 1.8$. Consider z value for *Clostridium botulinum* type A. 5

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Q7. a. With the aid of a schematic diagram, explain the working principle of a dry bag, indirect compression HPP equipment. **6**

b. Explain the significance of the following in manufacture of black tea: **2 × 3 = 6**

1. Fermentation
2. Heavy rolling

c. What is aromatization of coffee? **3**

Q8. Write short notes on (any three): **3 × 5 = 15**

- a. Pebbly coffee beans and Slimy coffee beans
- b. Procedure for choosing target N_0/N for a canning process
- c. Conditions that need to be precisely controlled during roasting of coffee
- d. Effect of HPP on mushrooms