EX/ FTBE / T / 421 /2017

BACHELOR OF ENGINEERING IN FOOD TECHNOLOGY &

BIOCHEMICAL ENGINEERING EXAMINATION, 2017

(Final Year – Second Semester)

QUALITY CONTROL & FOOD SAFETY

Time: Three hours Full Marks: 100

Use separate Answer Script for each Part

PART-I (50 Marks)

(Answer Any Four Questions. All Questions carry equal marks))

1. Discuss Food Laws and the Role of Prevention of Food Adulteration Act 1954.

2.Explain what is called Food Contaminants and Common Adulterants.

3.What are the substances known as Food Additives ? Discuss in detail.

4.Give Four simple methods for identifying the common food adulterants .

5. Discuss the process of making canned foods and method of examination offood poisoning in can product.

6.What are causes of food spoilages? Discuss the different methods of preservation.

7.Discuss the simple screening tests for milk, mustard oil, starch and nuts.

8. Write short notes on:

a.) Thin Layer Chromatographic Detection of mineral oil in whole black pepper.
b.) Mycotoxins associated in foods.
c.) Sterol acetate tests.

[Turn over

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B.E (FTBE) 4TH YEAR, 2ND SEMESTER EXAM 2017

QUALITY CONTROL AND FOOD SAFETY **TIME: 3 H** **FULL MARKS = 100**

PART- (50 MARKS)

USE SEPARATE ANSWER SCRIPT FOR EACH PART

Answer **Q1** and **any Two** from the rest

Q1. a. Which gum finds the widest application in the food industry and why? What is hysteresis lag in a gel curve? **1 + 2 + 2**

b. What are technical enzyme preparations? How are they formulated and assayed? What is the role of 'catalase' in pasteurization? **1 + 2 + 2**

c. What are the desirable quality attributes of margarine with special referenced to SFI values? How would you minimize lid-slosh in margarine? **3 + 2**

d. Which is the most important technological challenge in mayonnaise manufacture? How is flavor reversion in mayonnaise redressed? **3 + 2**

Q2. a. Diagrammatically enumerate the manufacturing step that contributes to difference in texture between 'caramel' and 'fudge' candies. **4**

b. Discoloration of anthocyanins in fruit products occur in tin cans- enumerate. **5**

c. How is food grade CMC manufactured for use as a hydrocolloid in foods? What are the significances of DS and DP values for CMC? **2 + 2**

d. Schematically explain operation of a continuous PEF processing unit. **2**

Q3. a. The content of pelargonidin (red anthocyanin in native form) has to be analyzed by HPLC in a spray dried sample of red geranium flower extract. One kg of the sample has arrived in the laboratory in a multi-composite (Met BOPP/Al/Ionomer) pack.

i. Outline the complete measurement process and indicate uncertainties involved in each step. **3**

ii. Define DU and identify the same. What would be the 'analytical sample'? **2 + 1**

iii. What tests would you perform to certify this as FDC? **2**

b. What are fondants? In formulation of chocolate candy, enumerate the roles of the three product development methods - 'application development', 'analytical development' and 'triglyceride replication'. **1 + 6**

Q4. Comparatively evaluate the following (any three): **3 × 5 = 15**

a. 'PEF-treated juice' and 'Pectinase-treated juice'

b. Role of proteases in 'Bakery' and in 'Brewery

c. 'Color extract' and 'Color lake'

d. 'Phlobalen' and 'Phlobaphene'

c. 'Long pile' method and 'Spoon' method