CHUKA   UNIVERSITY

UNIVERSITY EXAMINATIONS

FOURTH YEAR EXAMINATION FOR THE AWARD OF DEGREE OF
BACHELOR OF FOOD SCIENCE AND TECHNOLOGY

FOST 463: FOOD QUALITY ASSURANCE

STREAMS:

TIME: 2 HOURS

DAY/DATE: WEDNESDAY 31/3/2021   **11.30 AM – 1.30 PM**

INSTRUCTIONS:
- Answer ALL Questions in Section A and any other two Questions in Section B.

SECTION A: ANSWER ALL QUESTIONS (30 MARKS)

1. Describe the three fundamental functions of food quality assurance.   [6 Marks]

2. Briefly explain the philosophy behind modern quality assurance.   [4 Marks]

3. Explain ISO 9000 Family of standard   [4 Marks]

4. Explain the purpose of monitoring in the implementation and maintenance of a quality and
    safety management system.   [6 Marks]

5. In a can seaming operation, the number and type of visual defects that occurred in the seams
    of 25 sample units of 14 cases of cans, were registered. The average of nonconformities, C,
    was=3.65. Establish the control limits for this operation.   [4 Marks]

6. Explain the role of top management in the implementation process for any food quality and

safety management system.   [6 Marks]

SECTION B: ANSWER ANY TWO QUESTIONS (40 MARKS)

7.(a) As the safety team leader in a food processing company, explain the need to implement a
    food safety management system.   [10 Marks]

(b) Discuss the dimensions of quality that link customer requirements to the design of products.
[10 Marks]

8.(a) Discuss the quality management principles that the managers of a fruit processing factory
        should apply in order to assure quality products or services are provided.   [8 Marks]

  (b) Using a product of your choice, discuss the process of developing a HACCP plan.
                                                            [12 Marks]

9.(a) Discuss good manufacturing practices and their benefits in a dairy processing plant.
                                                            [6 Marks]

 (b) The net weight in grams of a product is to be monitored by X- and R control charts using a
    sample size of n=5. Twenty-five samples were collected from a given production line at
    regular intervals.   [14 Marks]

	Y1	Y2	Y3	Y4	Y5	Total
1	23	24	21	24	20	112
2	27	25	23	22	21	118
3	24	24	24	23	19	114
4	24	24	22	27	21	118
5	23	23	24	20	20	110
6	27	27	22	21	21	118
7	23	24	24	24	23	118
8	27	22	24	22	27	122
9	23	24	23	24	20	114
10	27	22	27	22	21	119
11	24	18	23	24	24	113
12	24	27	27	25	22	125
13	23	18	23	24	18	106

14	24	27	27	22	19	**119**
15	24	24	23	24	21	**116**
16	24	22	27	22	21	**116**
17	23	24	20	24	20	**111**
18	27	22	21	22	21	**113**
19	21	18	19	18	19	**95**
20	20	27	21	27	21	**116**
21	21	18	19	24	20	**102**
22	19	24	20	22	21	**106**
23	24	24	23	24	20	**115**
24	24	22	27	22	21	**116**
25	23	24	20	18	19	**104**
Total	593	578	574	571	520	

(i) Construct the mean and range charts

(ii) Construct the mean and standard deviation chart.

(iii) Identify the out-of-control sample and explain the action that needs to be taken.

…………………………………………………………………………………………….