Total number of printed pages = 5

19/6th Sem/UFET 602

2022

FOOD ANALYSIS QUALITY CONTROL AND MANAGEMENT

Full Marks – 100

Time – Three hours

The figures in the margin indicate full marks for the questions.

Answer any *five* questions.

1. (a) Answer the following questions : 1×10=10

(i) When was Food Safety and Standards Act formed ?

(ii) What is Quality Assurance ?

(iii) What is Sensory evaluation ?

(iv) What is HACCP ?

(v) What is Papillae ?

(vi) What are the variables involved for TPA graphical representation ?

[Turn over

(vii) Which step is required to conduct a planned sequence of observation or measurements to assess the control of CCP ?

(viii) Who is responsible for ensuring quality in food to the consumers ?

(ix) Which papillae are present around the bitter sensing taste buds ?

(x) What is the role of sensitivity test in sensory evaluation ?

(b) Define HACCP. What are the seven principles of HACCP ? +Show the decision tree method to determine the CCP in a HACCP system. 10

2. (a) Justify the title of the subject ? 3

(b) Briefly explain how a food sample can be analysed with respect to color with different parameters. 7

(c) Explain Texture Profile Analysis test of a food sample. 10

3. (a) What are the methods to determine quality of a sample ? Explain any three physical and chemical methods. 8

(b) Explain triangle and duo-trio test. 6

(c) Define six sigma. What is the approach of six sigma ? Discuss the organisation structure of six sigma. 6

4. (a) Define food adulteration ? How many types of adulterants are there ? State the name and test for adulterants used in honey and milk. 10

(b) What are the reasons for food adulteration ? 6

(c) Explain the PDSA cycle. 4

5. (a) Under what condition food is deemed as adulterated according to the PFA Act 1954 ? State the role of PFA Act. 6

(b) What are the differences between ISO 9000 and ISO 22000 ? 6

(c) What is the role of Quality tools in Quality management ? Explain the different quality tools used in Quality management. 8

6. (a) Explain the different concepts involve in Total Quality Management. 10

(b) Define Process capability and Process capability index, What does it mean when $C_p=1$, $C_p>1$ and $C_p<1$? 5

(c) What is statistical process control ? Explain the significance of p-chart. 2

(d) How standard deviation can be calculated ? Define the term C_p. 3

7. (a) Write short notes on : 10

(i) Codex Alimentarius Commission

(ii) FSSAI

(iii) PFA

(iv) AGMARK.

(b) A quality control inspector at the beverage company has taken ten samples with four observations each of the volume of bottles are filled. The data and computed mean are shown in the table. If standard deviation of the bottling operation is 0.16 ounces, use this information to develop

(i) Control limits of three standard deviations for the bottling operation and prepare the control charts.

(ii) Average range, range charts and mean (X) bar chart.

Use the value of $A_2 = 0.73$, $D_4 = 2.28$ and $D_3 = 0$. 10

Sl No.	Sample No.	Observation			
		1	2	3	4
1.	1.	15.25	15.86	15.94	15.89
2.	2.	15.74	16.21	16.01	15.86
3.	3.	16.20	16.01	16.14	16.03
4.	4.	15.51	16.01	15.87	15.83
5.	5.	16.02	15.42	15.78	15.84
6.	6.	16.00	15.91	15.94	15.83
7.	7.	15.94	15.85	15.74	15.93
8.	8.	15.85	16.02	15.83	15.93
9.	9.	15.94	15.85	15.74	15.93
10.	10.	15.84	15.94	16.02	15.94