Total number of printed pages: 02 **UG/6/FPT602**

2023

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.*

		Question body	Marks
1.	a)	i) Define the following; QA, Papillae, QCMS, TQM, Cohesiveness of food sample, Standard deviation ii) What are the variables involved for TPA graphical representation iii) What is the primary objective of quality control? iv) What is subjective method of quality control? v) What are the main aspects of quality control	1*10
	b)	Write the common quality measures required in food processing plant?	4
	c)	What is the role of HACCP? Explain the principles of HACCP.	6
2	a)	Define texture of food. How texture can be analyzed with its different parameters?	8
	b)	What are the different quality tools? Explain any two.	6
	c)	State the concept of TQM philosophy with its main idea?	4
3	a)	Justify the title of the subject.	2
	b)	What are the different sensory tests employed for food evaluation? Explain duo-trio test and Monadic test	8
	c)	State the general packaging standards to be followed for milk and milk products according to Indian Standards (FSSAI)	6
	d)	State the difference between quality control and quality assurance	4
4	a)	Write the name of the adulterant and test for the detections of adulterants of the following foods i) Sugar ii) Honey iii) Ghee iv) Turmeric	10
	b)	What are the ISO 9000 and ISO 14000? What are the difference between ISO 9000 and ISO 22000	10
5	a)	How color of food sample can be measured? Explain	10
	b)	What are the seven features of TQM which are combined to create the TQM philosophy	10
6	a)	Define process capability and process capability index. What does it mean when $C_p=1$, $C_p>1$ and $C_p<1$. What is the use of 'C_p' value in quality control	2+3+1
	b)	Explain PDSA cycle process. What is the significance of it quality management?	4

	c)	Explain the steps of determining CCPs for a process.	4
	d)	i)What is the role of sensitivity test in sensory evaluation ii) Which papillae are present around the bitter sensing taste bud? iii) When was PFA formed? iv) What is the primary objective of quality control?	4*1
7	a)	Write short notes on: i) FSSAI ii) Codex Alimentarius Commission	2*5=10
	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 A2 = 0.73, D4= 2.28 and D3= 0	10

Sl No.	Sample No.	Observations			
1.	1.	15.74	15.12	16.02	15.36
2.	2.	16.02	15.84	16.18	16.08
3.	3.	16.14	15.41	15.23	15.71
4.	4.	15.23	15.36	15.41	16.10
5.	5.	15.35	15.74	15.84	16.08
6.	6.	15.71	16.08	16.12	15.74
7.	7.	16.05	16.21	16.03	15.23
8.	8.	15.85	16.14	15.41	15.41
9.	9.	15.42	15.80	15.55	15.32
10.	10.	16.18	15.51	15.64	16.21