Total number of printed pages: 1 **VI/B.Tech/FPT602**

2025
(MAY)

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, Cohesiveness of food sample, 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?	1*10
	b)	Write the common quality measures required in food processing plant?	4
	c)	What is the role of Quality tools in Quality management? Explain the different quality tools used in Quality management	8
	d)	Justify the title of the subject.	2
2	a)	Define texture of food. How texture can be analyzed with its different parameters?	10
	b)	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
	c)	How the concept of TQM can be implemented?	4
3	a)	What are the ISO 9000 and ISO 14000? What are the difference between ISO 9000 and ISO 22000	10
	b)	What are the seven features of TQM which are combined to create the TQM philosophy	10
	c)	State the general packaging standards to be followed for milk and milk products according to Indian Standards (FSSAI)	6
	d)	What is the basic fundamental required for quality control programme? Mention the different sub sections of an organization plan for food processing	4
4	a)	Define adulteration and adulterant. How many types of adulteration are there? 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	12

<table>
<tr><td></td><td>b)</td><td>What are the different sensory tests employed for food evaluation? Explain duo-trio test and Monadic test</td><td>8</td></tr>
<tr><td>5</td><td>a)</td><td>How color of food sample can be measured? Explain with all the parameters.</td><td>10</td></tr>
<tr><td></td><td>b)</td><td>What are the elements of national food control system? Mention the aspects of food legislation.</td><td>6</td></tr>
<tr><td></td><td>c)</td><td>What are the general principle of Food Safety</td><td>4</td></tr>
<tr><td>6</td><td>a)</td><td>Explain any two chemical and physical tests used for quality analysis of food</td><td>4</td></tr>
<tr><td></td><td>b)</td><td>What is the role of HACCP? Explain the principles of HACCP. What are the steps of determining CCPs for a process.</td><td>12</td></tr>
<tr><td></td><td>c)</td><td>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) Who is responsible for ensuring quality in food to the consumers?</td><td>4*1</td></tr>
<tr><td>7</td><td>a)</td><td>Write short notes on:
i) FSSAI or BIS
ii) Codex Alimentarius Commission or FDA</td><td>2*5=10</td></tr>
<tr><td></td><td>b)</td><td>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
<table>
<tr><th>Sl No.</th><th>Sample No.</th><th colspan="3">Observations</th></tr>
<tr><td>1.</td><td>1.</td><td>15.74</td><td>15.12</td><td>16.02</td></tr>
<tr><td>2.</td><td>2.</td><td>16.02</td><td>15.84</td><td>16.18</td></tr>
<tr><td>3.</td><td>3.</td><td>16.14</td><td>15.41</td><td>15.23</td></tr>
<tr><td>4.</td><td>4.</td><td>15.23</td><td>15.36</td><td>15.41</td></tr>
<tr><td>5.</td><td>5.</td><td>15.35</td><td>15.74</td><td>15.84</td></tr>
<tr><td>6.</td><td>6.</td><td>15.71</td><td>16.08</td><td>16.12</td></tr>
<tr><td>7.</td><td>7.</td><td>16.05</td><td>16.21</td><td>16.03</td></tr>
<tr><td>8.</td><td>8.</td><td>15.85</td><td>16.14</td><td>15.41</td></tr>
<tr><td>9.</td><td>9.</td><td>15.42</td><td>15.80</td><td>15.55</td></tr>
<tr><td>10.</td><td>10.</td><td>16.18</td><td>15.51</td><td>15.64</td></tr>
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