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53 (FPT 602) FAQC

2019

**FOOD ANALYSES, AND QUALITY
CONTROL AND MANAGEMENT**

Paper : FPT 602

Full Marks : 100

Time : Three hours

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

Answer any five questions.

1. (a) (i) Define Quality Management System and Standard Deviation. 1
- (ii) Which sensory test is used for selection of panel members in sensory evaluation? 1
- (iii) What is the aim of Quality Control? 1

Contd.



Define Quality Assurance and TQM. 1

(iv) The Sigma Six Approach as a data-driven, focuses on _____, _____ and _____. 1

(vi) Food flavour is due to _____ compounds. 1

(b) Explain the methods used for determining Quality of a product. 4

(c) Explain the basic fundamentals for Quality Control Programme. What is the role of organisation in maintaining quality of food? 3+2

(d) How preharvest factors affect the quality of food? 5

2. (a) A quality control inspector at a beverage company has taken 10 samples with 4 observations each of the volume of bottles filled. The data and computed mean are shown in the table. If the 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.

average range, range charts and mean (\bar{X}) bar. Use the value of $A_2 = 0.73$, $D_4 = 2.28$, $D_3 = 0$.

Sample No.	Observations
1.	16.14 16.01 15.96 15.86
2.	15.74 16.54 16.51 15.93
3.	16.03 17.12 16.32 16.12
4.	15.85 14.38 16.04 16.01
5.	15.96 15.68 15.02 16.31
6.	16.01 16.21 16.21 15.35
7.	15.98 15.71 17.01 15.21
8.	16.23 15.38 14.91 15.15
9.	15.83 15.45 15.23 15.80
10.	16.24 16.50 16.04 15.31

(b) Define the following: 1×5=5

(i) GMP

(ii) Food poisoning



- (iii) Papillae
- (iv) Sensory evaluation
- (v) Standard deviation.

(c) What are the Quality Control principles for any food? Write the common quality measures required for a processed food. 2+3

3. (a) Explain Texture Profile Analysis test for a food sample. 8

(b) What are the different improvement strategies for the framework of Sigma-Six required? 3

(c) What are the seven features of TQM which are combined to create the TQM philosophy? 7

(d) What are the differences between voluntary and obligatory quality and safety systems? 2

4. (a) Why Sensory analysis is done? How many sensory evaluation tests are there in sensory analysis? Discuss triangle test and two-sample difference test. 2+2+8

(b) Explain DMAIC process. What is the significance of DMAIC process in Six Sigma management? 8

5. (a) Define HACCP. What are the seven principles of HACCP? How CCP for a process can be determined? 1+3+4

(b) What is Statistical process control? Explain the significance of p-charts. How standard deviation can be calculated? Define the term " C_p ". 1+1+1+1

(c) Define Process capability and Process capability index. What does it mean when $C_p = 1$, $C_p > 1$ and $C_p < 1$? 1+3

(d) Explain any one chemical method used for quantitative evaluation for nutritive value with all necessary requirements for the test. 4

6. (a) State the Ministries involved in setting up the following standards and legislation: 5

(i) PFA

(ii) FPO



- (iii) BIS
- (iv) Food Safety and Standards Act
- (v) MPO and MMPO

(b) Write short notes on: 3×4=12

- (i) CODEX
- (ii) PFA
- (iii) AGMARK
- (iv) BIS

(c) State the differences between ISO 9000 and ISO 14000. 3

7. (a) Define adulteration and adulterant. Write the names of the adulterants and tests for detection of adulterants of the following foods: 1+1+8=10

- (i) Sugar
- (ii) Honey

- (iii) Turmeric
 - (iv) Ghee.
- (b) Explain the "Plan-Do-Study-Act" Cycle. 4

(c) Under what condition is a food deemed as adulterated according to the PFA Act, 1954? What is the role of PFA Act? 6

