

School of Business

BBA
ETE - Jun 2023

Time : 3 Hours

Marks : 100

Sem IV - D1UA412T - Quality Management

Your answer should be specific to the question asked

Draw neat labeled diagrams wherever necessary

1. Discuss the application of Poka-Yoke Mistake Proofing technique in quality improvement. K2 CO1 (5)
2. Describe the TQM triangle for developing quality system. K2 CO2 (5)
3. Explain the 7 quality management principles of ISO 9000. K2 CO2 (5)
4. Discuss the role of Industry 4.0 technologies in Quality Management (Quality 4.0). K4 CO3 (10)
5. Describe the Deming's 14 Principles applicable in quality management. K2 CO1 (10)
6. Discuss in detail Malcolm Ba.ldrige National Quality Award (MBNQA) structure with 7 performance criteria with a diagram. K3 CO2 (10)
7. Develop 5 House of Quality and discuss the role of each house in new product development. K4 CO3 (10)

OR

- Appraise the role of total productive maintenance and OEE in equipment reliability. K4 CO3 (10)
8. Draw Service Quality Gap Model (SERVQUAL) diagram depicting 5 gaps and elaborate the Gap 5 and its impact on customer perceived service quality. K5 CO4 (15)

OR

An auto repair and painting workshop is carrying out denting and painting after repair. Every days 100 cars are spray painted and dried for delivery to the owner of the car. Customer feed is not satisfactory with painting quality. Workshop manager decided to improve the painting service so as to retain its customers. He has observed 20 cars every day for 10 days and data of the observation is recorded in the table below. Develop a p-chart for the car painting service using 3σ (standard deviation) control limits and plot a graph to indicate if the painting process is out of control. (Note: $Z = 2$ corresponding to 2σ ; $Z = 3$ corresponding to 3σ). K5 CO4 (15)

Sample **Number of Car
painting found
defective**

1	3
2	10
3	9
4	13
5	7
6	11
7	4
8	8
9	4
10	5

PTO

9. Agarwal Sweets is a producer of many sweet varies and namkeen to fulfill the local demands in NCR. The namkeen is produced, packed and ready for distribution. It is facing recurring problem in namkeen packets. Manager (QA) want to investigate the quality issue by using some quality tool. He order data collection over 10 days and 100 samples per day. The actual rejection of namkeen packets over 10 days are summarized in Tables 1. Develop a Pareto diagram. K4 CO3 (15)

Table 1: Data collected for 10 days and number of defective packet (April 2023) (Sample size 1000).

S. No.	Type of defective Packets	Total Defectives
1	Improperly sealed	280
2	No proper print on the packet	60
3	Over weight	110
4	Under weight	130
5	Outsized packet	60
6	Empty packets	30

10. QuickDeliver is e-commerce logistics firm in Bangaluru. It has partnered with flipkart to deliver the items to customers. QuickDeliver must pickup from Flipkart delivery hub and deliver to customers rapidly. Flipkart is getting complaint that orders are being late delivered. QuickDeliver has tracked delivery time for the randomly selected 5 delivery per day for 10 days. The data is given below. Process standard deviation is 0.05 days. Plot mean control chart with 3σ (standard deviation) control limit to show if process under control. (Note: $Z = 2$ corresponding to 2σ ; $Z = 3$ corresponding to 3σ). K5 CO4 (15)

Samples	Delivery time (days)				
1	1	2	2	2	3
2	2	1	2	3	2
3	1	2	1	2	3
4	1	2	2	1	2
5	3	2	3	1	1
6	2	2	2	1	3
7	3	3	1	1	2
8	3	1	2	2	1
9	1	2	2	3	1
10	2	2	3	2	1