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NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA

(An Autonomous Institute Affiliated to AKTU, Lucknow)

B.Tech

SEM: VIII - THEORY EXAMINATION (2024- 2025)

Subject: Total Quality Management

Time: 3 Hours

Max. Marks: 100

General Instructions:

IMP: Verify that you have received the question paper with the correct course, code, branch etc.

1. This Question paper comprises of **three Sections -A, B, & C**. It consists of Multiple Choice Questions (MCQ's) & Subjective type questions.

2. Maximum marks for each question are indicated on right -hand side of each question.

3. Illustrate your answers with neat sketches wherever necessary.

4. Assume suitable data if necessary.

5. Preferably, write the answers in sequential order.

6. No sheet should be left blank. Any written material after a blank sheet will not be evaluated/checked.

SECTION-A

20

1. Attempt all parts:-

- 1-a. Choose the term that best describes the process of ensuring that products meet certain standards. [CO1.K1] 1
- (a) Quality control
- (b) Profit maximization
- (c) Marketing strategy
- (d) Production scheduling
- 1-b. Which of the following is NOT a tool used in TQM for process improvement? [CO1.K1] 1
- (a) Fishbone diagram
- (b) Pareto chart
- (c) SWOT analysis
- (d) Scatter diagram
- 1-c. A common barrier to successful TQM implementation is: [CO2.K1] 1
- (a) Strong focus on continuous improvement
- (b) Commitment from all levels of the organisation
- (c) Use of data and statistical analysis
- (d) Resistance to change within the company
- 1-d. The philosophy of Kaizen, which emphasises continuous improvement, is a core principle of: [CO2.K1] 1

- (a) Traditional management styles
 - (b) Total Quality Management (TQM)
 - (c) Short-term profit maximisation strategies
 - (d) Individual performance-based incentives
- 1-e. Which tool is commonly used to identify potential causes of a problem? [CO3,K1] 1
- (a) Control Chart
 - (b) Histogram
 - (c) Fishbone Diagram
 - (d) Scatter Plot
- 1-f. In a Control Chart, what does the central line represent? [CO3,K1] 1
- (a) Upper control limit
 - (b) Lower control limit
 - (c) Mean or average value
 - (d) Standard deviation
- 1-g. The importance of data collection in Statistical Process Control is: [CO4.K1] 1
- (a) To confirm the process is in control
 - (b) To detect special causes
 - (c) To identify trends and patterns
 - (d) To set process limits
- 1-h. The main challenge in implementing Statistical Process Control is:[CO4, K1] 1
- (a) Cost of implementation
 - (b) Lack of understanding of statistics
 - (c) Resistance to change
 - (d) Difficulty in collecting data
- 1-i. ISO 14000 standards are focused on: [CO5, K1] 1
- (a) Quality management
 - (b) Occupational health and safety
 - (c) Environmental management
 - (d) Information security
- 1-j. Quality Auditing primarily aims to assess: [CO5, K1] 1
- (a) Compliance with legal regulations
 - (b) Profitability of the organization
 - (c) Compliance with quality standards and procedures
 - (d) Employee satisfaction levels
2. Attempt all parts:-
- 2.a. Name the factors that hinder successful adoption of TQM practices in organizations. [CO1, K1] 2

2.b.	Describe two key elements of effective teamwork in a quality-focused environment. [CO2, K1]	2
2.c.	Define Six Sigma approaches.[CO3, K1]	2
2.d.	Define Control Charts. [CO4, K1]	2
2.e.	What is the need for ISO? [CO5, K1]	2

SECTION-B

30

3. Answer any five of the following:-

3-a.	Explain the 14 steps involved in Crosby's total quality approach.[CO1,K2]	6
3-b.	What is service quality? Explain its various elements towards customer satisfaction. [CO1,K2]	6
3-c.	Explain the core principles of TQM and their significance in achieving quality excellence. [CO2,K2]	6
3-d.	Explain the DMAIC methodology used in Six Sigma, highlighting the key steps in this problem-solving framework. [CO2,K2]	6
3.e.	Describe the key elements of a successful quality management system (QMS), and explain how these elements contribute to organizational excellence.[CO3,K2]	6
3.f.	Explain the steps involved in implementing SPC in a manufacturing process?[CO4,K2]	6
3.g.	With the help flow chart explain the various divisions of ISO 14000 standard. [CO5,K2]	6

SECTION-C

50

4. Answer any one of the following:-

4-a.	Differentiate Quality of Conformance and Quality of Performance. [CO1,K2]	10
4-b.	Elaborate the Quality statements of manufacturing company with an example and explain the actions of Quality statements. [CO1,K2]	10

5. Answer any one of the following:-

5-a.	How would show your understanding of PDCA Cycle? Do you feel kaizen can be an alternate to it? and Justify it. [CO2,K3]	10
5-b.	Explain the step by step procedure in strategic quality planning. [CO2, K2]	10

6. Answer any one of the following:-

6-a.	What is relationship diagram? When do you use it? [CO3,K3]	10
6-b.	Coffee shop owner gets sudden increases in complaints about poor quality, apply cause and effect diagram to this situation. [CO3,K3]	10

7. Answer any one of the following:-

7-a.	What are the Pillars of TPM? Discuss them in detail. How are they implemented? [CO4, K3]	10
7-b.	The Taguchi loss function for a certain component is given by $L(X) = 7500(X - N)^2$, where X- the actual value of a critical dimension and N is its Nominal value. Company management has decided that the maximum loss that can be accepted is	10

Rs.400. If the nominal dimension is 35.00 mm. Find the tolerance limits.
[CO4,K3]

8. Answer any one of the following:-

- 8-a. What are the types of auditing under ISO 9000-2000 quality system? Discuss their purpose in detail. [CO5,K2] 10
- 8-b. The cost of implementing a quality management system can be significant. How can an organization justify these upfront costs in terms of long-term benefits? [CO5,K2] 10

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