Printed Page:- **Subject Code**:- **AOE0861**

Roll. No:

NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA

(An Autonomous Institute Affiliated to AKTU, Lucknow)

B.Tech

SEM: VIII - THEORY EXAMINATION (20 ..... - 20.....)

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. The primary purpose of quality control is: (CO1, K1) 1

(a) To maximize profits

(b) To identify defects

(c) To increase sales

(d) To reduce production time

1-b. In a manufacturing plant, choose the action that best demonstrates a commitment to quality? (CO1, K1) 1

(a) Conducting regular inspections

(b) Ignoring customer feedback

(c) Reducing employee salaries

(d) Increasing production speed

1-c. Which of the following is a key element of the TQM framework? (CO2, K1) 1

(a) Standardized work processes

(b) Short-term cost reduction strategies

(c) Hierarchical management structure

(d) Limited employee involvement

1-d. Which of the following is a benefit of achieving high customer retention? (CO2, K1) 1

(a) Reduced need for marketing and advertising

(b) Increased likelihood of receiving customer referrals
(c) Both a and b
(d) Neither a nor b

1-e. The primary purpose of a Pareto Chart is: (CO3, K1) 1
(a) To analyze cause-and-effect relationships
(b) To identify the most significant factors contributing to a problem
(c) To display the distribution of data over time
(d) To predict future trends based on historical data

1-f. The acronym "TQM" stand for: (CO3, K1) 1
(a) Total Quality Management
(b) Total Quantity Management
(c) Total Quality Measurement
(d) Total Quantity Measurement

1-g. The primary goal of Statistical Process Control (SPC) is: (CO4, K1) 1
(a) To detect errors in the manufacturing process
(b) To control the mean and variability of the process
(c) To reduce production costs
(d) To improve product quality

1-h. The purpose of the “Voice of the Customer” in QFD is: (CO4, K1) 1
(a) To identify customer needs
(b) To prioritize product features
(c) To evaluate product performance
(d) To detect product defects

1-i. ISO 9000 standards primarily focus on: (CO5, K1) 1
(a) Environmental management
(b) Quality management
(c) Safety management
(d) Financial management

1-j. Which ISO standard focuses on environmental management? (CO5, K1) 1
(a) ISO 9001
(b) ISO 14001
(c) ISO 27001
(d) ISO 45001

2. Attempt all parts:-

2.a. Define quality? (CO1, K1) 2

2.b. Name two TQM Gurus and describe one of their key contributions to the field of quality management. (CO2, K2) 2

2.c. Describe two applications of the Ishikawa Diagrams in quality improvement 2

.

processes. (CO3, K2)

2.d.	Elaborate main goal of QFD? (CO4, K2)	2
2.e.	Define the primary goal of quality auditing? (CO5, K2)	2

SECTION-B 30

3. Answer any five of the following:-

3-a.	Recall the main tools and techniques used in TQM for process improvement. (CO1, K2)	6
3-b.	Describe the importance of customer focus in TQM and its impact on organizational success. (CO1, K2)	6
3-c.	Identify and explain two significant barriers that can hinder the successful implementation of TQM. (CO2, K2)	6
3-d.	Correlate customer satisfaction and customer retention. (CO2, K2)	6
3.e.	Describe the DMAIC methodology used in Six Sigma. (CO3, K2)	6
3.f.	Explain the concept of control limits and how are they determined in control charts? (CO4, K2)	6
3.g.	How does a corrective action differ from a preventive action in quality management? (CO5, K2)	6

SECTION-C 50

4. Answer any one of the following:-

4-a.	Analyze the consequences of ignoring or neglecting TQM barriers on organizational performance. (CO1, K2)	10
4-b.	Employee engagement is crucial for the success of TQM initiatives. Describe various strategies that organizations can use to empower employees and encourage their active participation in quality improvement efforts. (CO1, K2)	10

5. Answer any one of the following:-

5-a.	Describe the two main types of quality audits (internal vs. external) and their respective roles within an organisation's quality management system. (CO2, K2)	10
5-b.	You are the product development manager for a company aiming to foster a culture of continuous improvement and innovation. Design a process for integrating quality management principles with your product development cycle. This may include incorporating voice of the customer (VOC) feedback and utilising quality tools to optimise new product design and functionality. (CO2, K3)	10

6. Answer any one of the following:-

6-a.	Compare and contrast the principles of Total Quality Management (TQM) and Six Sigma methodologies, discussing their key concepts, methodologies, tools and applications in organizational quality improvement initiatives. (CO3, K2)	10
6-b.	Explain the concept of "Total Quality Management (TQM) Principles" and their importance in guiding organizational behavior and decision-making, discussing key TQM principles such as customer focus, continuous improvement, and	10

employee involvement. (CO3, K2)

7. Answer any <u>one</u> of the following:-

7-a.	What are the Pillars of TPM? Discuss them in detail. How are they implemented? (CO4, K2)	10
7-b.	Explain the concept of quality loss as proposed by Genichi Taguchi and how it differs from the traditional view of quality based on conformance to specifications. (CO4, K2)	10

8. Answer any <u>one</u> of the following:-

8-a.	Describe the key elements of a successful Quality Management System. How can these elements contribute to customer satisfaction? (CO5, K2)	10
8-b.	Discuss the potential for integrating ISO 9001 (Quality Management) and ISO 14001 (Environmental Management) within the same organization. What are the benefits of this combined approach? (CO5, K3)	10

.