



VIVEKANANDHA COLLEGE OF ENGINEERING FOR WOMEN  
[AUTONOMOUS INSTITUTION AFFILIATED TO ANNA UNIVERSITY, CHENNAI]  
Elayampalayam – 637 205, Tiruchengode, Namakkal Dt., Tamil Nadu.

**Question Paper Code: 80008**

B.E. / B.Tech. DEGREE END-SEMESTER EXAMINATIONS – NOV. / DEC. 2025

Seventh Semester

Electrical and Electronics Engineering

U19HS704 – TOTAL QUALITY MANAGEMENT

(Regulation 2019)

Time: Three Hours

Maximum: 100 Marks

Answer ALL the questions

Knowledge Levels (KL)	K1 – Remembering	K3 – Applying	K5 - Evaluating
	K2 – Understanding	K4 – Analyzing	K6 - Creating

**PART – A**

(10 x 2 = 20 Marks)

Q.No.	Questions	Marks	KL	CO
1.	Why quality is important in any business? List two reasons.	2	K1	CO1
2.	Mention any four barriers in implementing TQM.	2	K1	CO1
3.	How does a quality statement help in continuous improvement?	2	K2	CO2
4.	Draw a neat sketch of the PDCA cycle.	2	K1	CO2
5.	Compute the standard deviation for the given data: 50, 45, 55, 55, 45, 50, 55, 45, 55.	2	K1	CO3
6.	Define total productive maintenance.	2	K1	CO3
7.	Why do we refer QFD as the ‘Voice of the Customer’?	2	K2	CO4
8.	Assume that a product has a constant failure rate of $\lambda = 0.002$ per hour. What is the probability that it will survive during the first 100 hours of operation?	2	K2	CO4
9.	How do ISO 9000:2000 and ISO 9001:2015 differ in quality management approach?	2	K2	CO5
10.	In what ways can quality audits improve organizational process?	2	K2	CO5

**PART – B**

(5 x 13 = 65 Marks)

Q.No.	Questions	Marks	KL	CO
11. a)	Analyze the evolution of quality concepts from the early 20th century to the present, highlighting the key transitions and factors that have influenced the transformation of quality management practices over time.	13	K1	CO1

(OR)

	b)	Critically evaluate the effectiveness of Deming's 14 Points for Management in enhancing organizational quality and performance.	13	K1	CO1
12.	a)	Demonstrate, with suitable examples, how adopting a customer-focused approach can improve business processes, increase customer satisfaction, and contribute to attaining organizational objectives.	13	K2	CO2
		(OR)			
	b)	i. Enumerate the role of supplier partnerships in improving organizational performance.	6	K2	CO2
		ii. Using a practical example, illustrate how the 5S methodology can be implemented to improve productivity, reduce waste, and ensure safety in the workplace.	7		
13.	a)	With suitable diagrams, illustrate the significance of old/basic quality control tools in identifying and solving quality problems in a manufacturing or service process.	13	K2	CO3
		(OR)			
	b)	Outline the steps involved in Business Process Improvement and highlight its benefits in enhancing organizational efficiency with suitable examples.	13	K2	CO3
14.	a)	Analyze the structure and function of the House of Quality, explaining how it transforms customer requirements into technical specifications for product design. Illustrate your analysis with a relevant example.	13	K1	CO4
		(OR)			
	b)	Analyze the potential failure modes of a selected component by preparing a detailed Failure Modes and Effects Analysis (FMEA). Explain how each field of the FMEA table contributes to identifying and prioritizing risks.	13	K1	CO4
15.	a)	Examine the key elements of a quality management system as per ISO 9001:2015. Discuss how proper documentation contributes to achieving these elements.	13	K2	CO5
		(OR)			
	b)	Summarize the concepts, requirements, and benefits of quality auditing in ISO 9001:2015, and illustrate your answer with examples from IT service sectors.	13	K2	CO5

#### PART – C

(1 x 15 = 15 Marks)

Q.No.	Questions	Marks	KL	CO
16.	a) Critically evaluate the implementation of Kaizen in a manufacturing or service organization. Analyze its impact on process efficiency, waste reduction, and employee involvement, and suggest strategies to sustain continuous improvement.	15	K2	CO2

(OR)

- b) Evaluate the importance of the Taguchi Loss Function in enhancing quality and optimizing cost. Derive the loss function formula and analyze its capability to measure the financial implications of deviation from target specifications, supported by an industrial example. 15 K2 CO3
-