

GUJARAT TECHNOLOGICAL UNIVERSITY**BE- SEMESTER-VII (NEW) EXAMINATION – WINTER 2024****Subject Code:3172013****Date:19-11-2024****Subject Name: Quality Assurance and Reliability****Time:10:30 AM TO 01:00 PM****Total Marks:70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

		MARKS
Q.1	(a) Discuss the historical evolution of quality.	03
	(b) Differentiate between Quality Control and Quality Assurance.	04
	(c) Describe the concept of 5S in detail and also elaborate how you can implement 5S in your daily life.	07
Q.2	(a) Explain characteristics of p charts and c charts.	03
	(b) Describe different Statistical Quality Control SQC tools.	04
	(c) Explain principles of TQM and also Pillar of TQM.	07
	OR	
	(c) Explain Frequency distribution curve & its types in Statistical Quality Control SQC.	07
Q.3	(a) Give the important role of Inspection and Test in Quality management.	03
	(b) Explain the need of sampling.	04
	(c) Discuss about the basic 7 Quality Control tools.	07
	OR	
Q.3	(a) What are the characteristics and uses of normal distribution curve?	03
	(b) Explain Taguchi concepts with suitable example.	04
	(c) Analyze Six sigma process and its principle.	07
Q.4	(a) Briefly discuss the “Steps for Quality Improvement”.	03
	(b) Difference between ISO 9000 and ISO 9001.	04
	(c) Explain Brain-storming and Pareto analysis for quality improvement techniques.	07
	OR	
Q.4	(a) What is JIT Production system? Explain in brief.	03
	(b) Explain fundamentals of Reliability.	04
	(c) Explain Quality planning, management principles and different stages in Quality Assurance (QA).	07
Q.5	(a) Justify “Quality as a winning strategy”.	03
	(b) Write a short note on hazard models.	04
	(c) Explain Bayes theorem and prove it by suitable example in reliability.	07
	OR	
Q.5	(a) Define the terms: Mean time to failure, Mean time between failures, Mean time to repair.	03
	(b) Give the applications of r-out of –n structures.	04
	(c) Explain series and parallel connected system for improvement of reliability.	07
