

GUJARAT TECHNOLOGICAL UNIVERSITY**BE – SEMESTER- VII EXAMINATION-SUMMER 2023****Subject Code: 3172013****Date: 21/06/2023****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) Explain characteristics of p charts and c charts.	03
	(b) Write a short note on ISO 9000.	04
	(c) Explain Deming's 14 point philosophy of TQM.	07
Q.2	(a) Explain benefits of ISO.	03
	(b) Write a short note on elements of TQM.	04
	(c) Explain six sigma.	07
	OR	
	(c) Explain types of audit.	07
Q.3	(a) Explain PDCA cycle.	03
	(b) Evaluate :	04
	1. 'Sampling is not a full proof exercise.'	
	2. 'Quality is a relative term'.	
	(c) Explain the procedure for getting ISO 9001 Certification, along with three essential audit.	07
	OR	
Q.3	(a) Explain the curve of hazard rate vs. time with three clear zones on it.	03
	(b) Briefly discuss "Poka – Yoke (Mistake – Proofing)"?	04
	(c) Explain Bathtub Curve. Give advantages, limitation and application.	07
Q.4	(a) Define multiplication rule.	03
	(b) Write short notes on hazard models.	04
	(c) Define JIT. Give Advantages, Limitation And Application JIT.	07
	OR	
Q.4	(a) Define quality, quality control and total quality management.	03
	(b) Explain Quality Budget and vendor selection of development.	04
	(c) Explain KAIZEN. Also give advantages and application.	07
Q.5	(a) What do you mean by Process Control?	03
	(b) Explain with mathematical relation formulation: - mean time between failures (MTBF).	04
	(c) Define Prevention, Appraisal, Internal failure and External failure terms related to the cost of quality.	07
	OR	
Q.5	(a) What are the Reliability Parameters?	03
	(b) What are the characteristics and uses of normal distribution curve?	04
	(c) Write short note on (I) Lean Manufacturing (II) Business Process Re-engineering.	07
