

GUJARAT TECHNOLOGICAL UNIVERSITY**BE – SEMESTER- VII EXAMINATION-SUMMER 2023****Subject Code: 3171929****Date: 21/06/2023****Subject Name: Quality and Reliability Engineering****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 any three dimensions of Quality.	03
	(b) List out name of any five Quality Gurus and Explain contribution of any two Gurus.	04
	(c) Differentiate between Inspection and Quality Control in detail.	07
Q.2	(a) Define and explain Quality Circle.	03
	(b) Explain the concept of 5s.	04
	(c) Discuss about the basic 7 Quality Control Tools.	07
	OR	
	(c) List out 7 new management tools and explain any five in detail.	07
Q.3	(a) Explain Poka-Yoke with two examples.	03
	(b) Explain PDCA cycle.	04
	(c) Define QFD and Discuss House of Quality Product Planning Matrix.	07
	OR	
Q.3	(a) Define factors, levels and response with reference to Design of Experiment giving suitable example.	03
	(b) Discuss Taguchi Quality Loss Function.	04
	(c) What is FMEA? Explain how FMEA helps in ensuring quality of a product.	07
Q.4	(a) Discuss various steps in Taguchi method.	03
	(b) Explain JIT with real field application.	04
	(c) Discuss: Pillars of TPM.	07
	OR	
Q.4	(a) Define and discuss Benchmarking.	03
	(b) Short Note: KANBAN.	04
	(c) Explain Quality Management Standards-ISO: 9000.	07
Q.5	(a) What is Muda? Explain the various types of Muda.	03
	(b) Describe concept of Concurrent Engineering.	04
	(c) Briefly explain Six Sigma.	07
	OR	
Q.5	(a) What is Reliability? Explain the relationship between Reliability, Safety and Quality.	03

- (b) Define: Skewness and Kurtosis of life dispersion.
- (c) Discuss evolution of reliability over product life cycle.

04

07
