Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

ME - SEMESTER–IV • EXAMINATION – SUMMER - 2017

Subject Code: 2740804 **Date:03/05/2017**

Subject Name: Quality Control and Reliability

Time: 02:30 PM To 05:00 PM **Total Marks:70**

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1	**(a)**	Describe Control Charts for Variables and Attributes.	**07**
	(b)	Define Reliability. Explain in detail MTBF and MTTF.	**07**
Q.2	**(a)**	What is Acceptance Sampling? Explain types of Sampling Plans with their merits and demerits.	**07**
	(b)	What is meant by the term "SQC"? Describe the benefits and limitations of SQC.	**07**
		OR	
	(b)	Give Definition and Measurement of Risk. Explain Industrial Safety and Risk Assessment.	**07**
Q.3	**(a)**	Define Maintainability. Explain Hazard Plotting Concept of Bathtub Hazard Rate Curve.	**07**
	(b)	Differentiate between Quality Control and Reliability.	**07**
		OR	
Q.3	**(a)**	Explain Network reduction technique and Path tracing technique for Reliability Determination.	**07**
	(b)	Explain Time acceleration factor and influence of acceleration factor in test planning during Reliability testing.	**07**
Q.4	**(a)**	Describe in detail the concept of "Concurrent Engineering".	**07**
	(b)	What are the requirements for Six Sigma Implementation?	**07**
		OR	
Q.4	**(a)**	What is FMEA? Describe in detail the concept of FMEA.	**07**
	(b)	Describe the seven wastes of production eliminated by lean manufacturing.	**07**
Q.5	**(a)**	Explain different Advanced Reliability Evaluation Concepts.	**07**
	(b)	What is Reliability Management? Explain high temperature operating life acceleration model.	**07**
		OR	
Q.5	**(a)**	Explain in detail RBD approach and FTA.	**07**
	(b)	What is Lean Manufacturing? Describe the lean concept in detail.	**07**

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