Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VII EXAMINATION – SUMMER 2016

Subject Code:171906 Date:05/05/2016

Subject Name:Quality and Reliability Engineering (Department Elective - I)

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)**	Give two definitions of Quality and explain various dimensions of quality with suitable examples.	**07**
	(b)	Define TQM and discuss various obstacles associated with implementation of TQM in an organization.	**07**
Q.2	**(a)**	What is Quality Circle? Discuss advantages of quality circle.	**07**
	(b)	Write short note on PDCA cycle.	**07**
		OR	
	(b)	Explain KAIZEN in detail.	**07**
Q.3	**(a)**	What is JIT production system? Discuss merits and demerits of JIT production system.	**07**
	(b)	What is Total Productive Maintenance? Discuss implementation steps of TPM.	**07**
		OR	
Q.3	**(a)**	Explain following quality control tools in brief; (i) Pareto diagram and (ii) Histogram.	**07**
	(b)	Discuss each phase of 5-S for housekeeping technique covering advantages offered by this technique.	**07**
Q.4	**(a)**	What is Six Sigma? Discuss Advantages and Limitations of Six Sigma.	**07**
	(b)	Explain the principle of concurrent engineering and discuss objectives of lean manufacturing.	**07**
		OR	
Q.4	**(a)**	Explain FMEA covering its objectives and benefits.	**07**
	(b)	Discuss the basic concept of ISO 9000 certification. What are the benefits of ISO 9000 certification?	**07**
Q.5	**(a)**	Write short note on (i) Mean Time To Failure (ii)Mean Time Between Failure	**07**
	(b)	What is Probability? Discuss fundamental laws of probability.	**07**
		OR	
Q.5	**(a)**	What is Design of Experiments (DOE)? Explain Steps in experimental design.	**07**
	(b)	Discuss Reliability in terms of Hazard rate and failure density.	**07**

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