Seat No.: _____   Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER–VII • EXAMINATION – SUMMER • 2014

Subject Code: 171906   **Date: 31-05-2014**
Subject Name: Quality and Reliability Engineering
Time: 02:30 pm - 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)**	Discuss Business Process Re-engineering in brief	**07**
	(b)	Explain ISO 14000 with its benefits and barriers	**07**
Q.2	**(a)**	Write a short note on views of different quality Gurus	**07**
	(b)	Explain 7 New Quality Improvement tools	**07**
		OR	
	(b)	Discuss TQM implementation and limitations	**07**
Q.3	**(a)**	Explain different steps in experimental design	**07**
	(b)	Explain KANBAN system in brief	**07**
		OR	
Q.3	**(a)**	Write a short note on Taguchi approach	**07**
	(b)	Write a short note on Just In Time system	**07**
Q.4	**(a)**	Discuss advantages and disadvantages of Total Productive Maintenance	**07**
	(b)	Write a short note on a) Bench marking	**07**
		b)Agile manufacturing	
		OR	
Q.4	**(a)**	Explain six sigma technique in brief	**07**
	(b)	Write a short note on a) Quality Assurance	**07**
		b) Quality Management	
Q.5	**(a)**	Define 1)Quality 2) Inspection 3)Failure rate 4)Quality Control 5) Failure density 6)MTTF 7)MTTR	**07**
	(b)	One thousand steel pins with the specification of 10+0.015,10.70-0.010 diameter were obtained and the data was recorded follows	**07**

Diameter in mm	No Of pins
10.60-10.65	05
10.65-10.70	10
10.70-10.75	30
10.75-10.80	35
10.80-10.85	17
10.85-10.90	03

1) Find the Arithmetic mean and standard deviation
2) Interpret the results on the basis of Normal distribution and suggest the change if any

OR

Q.5	**(a)**	Write a short note on a) Histogram	**07**
		b) Normal Distribution Curve	
	(b)	Write a short note on a) Failure Data Analysis	**07**
		b) Mortality Curve	

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