Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

ME - SEMESTER– III • EXAMINATION – SUMMER 2015

Subject Code: 732803 **Date: 02/05/2015**

Subject Name: Quality engineering and Management

Time: 2:30 pm to 5:00 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)**	What are the benefits that could be realized by implementing an ISO 14000 Quality Systems?	**07**
	(b)	Define Concurrent Engineering? What are the Principle of Concurrent Engineering?	**07**
Q.2	**(a)**	Define the following terms. (i) Binomial Distribution (ii) Poisson Distribution (iii) Normal Distribution	**07**
	(b)	What are the benefits using Taguchi Quality Loss Function. Explain it with example.	**07**
		OR	
	(b)	Discuss ANOVA analysis as means to achieve quality standards.	**07**
Q.3	**(a)**	What is Six Sigma? Why six sigma is needed?	**07**
	(b)	How does re-engineering help in product design for manufacture?	**07**
		OR	
Q.3	**(a)**	Define DOE. When to use DOE ? Explain.	**07**
	(b)	Define Benchmarking. Why Benchmarking is necessary?	**07**
Q.4	**(a)**	What do you understand by term ñQFDò? Explain QFD Process.	**07**
	(b)	What is Kaizen ? What advantages can an optimization derive from implementation of Kaizen?	**07**
		OR	
Q.4	**(a)**	What is Lean Manufacturing? Explain in Details.	**07**
	(b)	What do you mean by TQM ? Explain about need of it.	**07**
Q.5	**(a)**	What do you mean by Quality Circle? What are the benefits of Quality Circle?	**07**
	(b)	What is SPC? What are the tools used for SPC?	**07**
		OR	
Q.5	**(a)**	What do you understand from JIT? What benefits occur to the organization from the application of JIT Technique?	**07**
	(b)	Product X has a mean time between Failure(MTBF) of 120 hrs. and has a mean time to repairs (MTTR) of 7 hrs. Product Y has an MTBF of 160 hrs and has MTTR of 3 hrs. (1)Which product has the higher Reliability? (2)Which product has greater Maintainability? (3)Which Product has Greater availability?	**07**

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