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

Subject Code: 172504

Date: 29-05-2014

Subject Name: Quality management & reliability engineering

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)	Discuss the concept of Quality Function Deployment.	07
	(b)	Enumerate Deming's 14 points for total quality management. Also mention the 7 deadly disease propounded by Deming.	07
Q.2	(a)	What is COPQ? Explain the concept of defects per million opportunities with an example.	07
	(b)	What is kaizen? What are the five "Gemba" principles in "Gemba" management?	07
		OR	
	(b)	What is total productive maintenance? Enumerate the benefits of maintenance management.	07
Q.3	(a)	What is Benchmarking? Explain Gap Analysis.	07
	(b)	What are the criteria for rating hotels in star and diamond categories?	07
		OR	
Q.3	(a)	Using schematic diagram, explain the five phases of Strategic Quality Management.	07
	(b)	What is Service blueprint? How can poka-yoke be helpful in service blueprint? Explain using appropriate example.	07
Q.4	(a)	What is COPC – 2000 Gold Standards? Briefly explain its various clauses.	07
	(b)	What are *muda, muri, and mura*? Explain the various types of *muda*.	07
		OR	
Q.4	(a)	Briefly explain the various types of quality audits.	07
	(b)	What is 5S in TQM? How does it help in improving the quality of products or services?	07
Q.5	(a)	Explain DMAIC process with suitable example.	07
	(b)	What is reliability? Construct the life cycle of a product showing its three phases.	07
		OR	
Q.5	(a)	Explain the use of Ishikawa's fishbone diagrams using suitable examples.	07
	(b)	A toy manufacturing company has found that the average life of its most popular 'robot-toy' is 200 hours. Assume tha it follows the exponential distribution.	07

         1. What is the failure rate λ?

         2. What is the chance that the toy would last for at least 300 hrs?

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