

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-IV • EXAMINATION – SUMMER • 2014****Subject Code: 142502****Date: 25-06-2014****Subject Name: Fundamentals of Quality Management****Time: 10:30 am - 01:00 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) Define quality and explain its role in the modern business environment **07**  
 (b) What are the major categories of quality cost? Explain each of them and give example **07**

- Q.2** (a) Briefly state and describe Deming's fourteen points for management **07**  
 (b) Describe and explain four absolute of quality management prescribed by Crosby **07**

**OR**

- (b) What is the difference between quality control and quality improvement and describe the role of management in each of this settings **07**

- Q.3** (a) Describe the total quality management philosophy. Choose a company and discuss how its quality criteria fit this theme? **07**  
 (b) Discuss concept of Six Sigma quality and explain the levels of non-confirming product that could be expected from such a process **07**

**OR**

- Q.3** (a) What are the advantages of benchmarking? How does it contribute to the goal of continuous quality improvement **07**  
 (b) Construct cause and effect diagram of a process that is producing non-confirming items? Discuss some remedial measures **07**

- Q.4** (a) Discuss type I error and type II error in hypothesis testing. Explain this in context of quality control setting **07**  
 (b) Discuss the important of Pareto diagram in process improvement **07**

**OR**

- Q.4** (a) A random sample of 50 observations of a mileage per gallon(mpg) of a particular brand of gasoline is shown below **07**

Observations	mpg				
1	33.2	29.4	36.5	38.5	30.0
2	29.1	32.2	23.5	36.0	31.5
3	34.5	33.6	27.4	30.4	28.4
4	32.6	30.4	31.8	29.8	34.6
5	30.7	31.9	32.3	28.2	34.6
6	34.9	32.8	27.7	28.4	27.5
7	30.2	26.8	27.8	30.5	28.8
8	31.8	29.2	28.6	27.5	28.5
9	30.8	31.8	29.1	26.9	34.2
10	33.5	27.4	28.5	34.8	30.5

- (a) Construct a frequency histogram  
 (b) Construct a relative frequency histogram and cumulative frequency histogram  
 (c) What conclusion can you draw regarding the procedure  
 (b) What are the advantages and disadvantages of control charts for attributes over those for variables? **07**

- Q.5 (a)** What is the importance of O.C. curve in the selection of sampling plan and describe impact of sample size and the acceptance number on the O.C. curve **07**
- (b)** Explain the importance of experimental design in quality control and improvement **07**

**OR**

- Q.5 (a)** Explain in detail the various phases of activity to be carried out by manufacturing organization for obtaining ISO-9001:1994 certificate **07**
- (b)** What are the new seven management tools of TQM. Briefly explain purpose of each **07**

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