

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**
