

C 21469

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Name:

Reg. No.

**EIGHTH SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION
APRIL 2017**

**ME/PTME 09 804 L22—QUALITY ENGINEERING AND MANAGEMENT
(2009 Admissions)**

Time : Three Hours

Maximum : 70 Marks

Part A

Answer all questions.

Each question carries 2 marks.

- I. (a) Define Kaizen with an example.
- (b) What is stratified sampling ?
- (c) State the pitfalls of benchmarking.
- (d) Three lamps are connected in parallel to produce light in a hall. The reliabilities are 0.92, 0.95 and 0.96. Find the reliability of the total lamp system. If the systems are connected in series, determine the reliability of the system.
- (e) Define house of quality.

(5 × 2 = 10 marks)

Part B

Answer four questions.

Each question carries 5 marks.

- II. (a) State the conditions under which p -chart preferred over np -chart with an example for each chart.
- (b) Discuss about continuous process improvement with an example.
- (c) Write the advantages and disadvantages of control chart.
- (d) What are the advantages of Total Quality Management ?
- (e) Explain the basic components of a control chart with an example with a line diagram.
- (f) Write the significance of having sample sizes for attributes necessarily larger than sample sizes for variables with an example.

(4 × 5 = 20 marks)

Turn over

Part C

Answer all questions.

III. (a) Explain the different quality costs associated with various departments of an organization.

Or

(b) "Six Sigma is an effective tool for continuous improvement". Give a detailed explanation on the statement.

IV. (a) Perform process FMEA to anticipate what you could do to eliminate any problems while changing a tire. Assume that you have just pulled off the side of the road and have opened the trunk to remove the jack. Think of the process of replacing the tire and what you can put in place to avoid problems the next time you change a tire. Complete the process FMEA form.

Or

(b) Write short note on :—

(i) Scatter diagram.

(5 marks)

(ii) Matrix diagram.

(5 marks)

V. (a) Distinguish between a P chart and a C chart. Discuss the situations in which C chart is most appropriate to use.

Or

(b) Explain in detail the different types of probability distributions.

VI. (a) State different life tests and their applications.

Or

(b) Explain in detail about the considerations involved in choosing between sampling and complete inspections with respects to variables and attributes with a case study.

(4 × 10 = 40 marks)