

C 1086

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**EIGHTH SEMESTER B.TECH. (ENGINEERING) [09 SCHEME] DEGREE  
EXAMINATION, APRIL 2016**

**ME/PTME 09 804 L22 – QUALITY ENGINEERING AND MANAGEMENT**

Time : Three Hours

Maximum : 70 Marks

**Part A**

*Answer all questions.*

- I. (a) Distinguish between quality control and quality assurance.  
(b) Indicate any *two* strength and weakness of benchmarking techniques.  
(c) What are the three basic uses of control charts?  
(d) What is the purpose of life testing in reliability engineering?  
(e) Define house of quality.

(5 × 2 = 10 marks)

**Part B**

*Answer any four questions.*

- II. (a) Write short note on continuous process improvement.  
(b) Distinguish between a P chart and a C chart. Discuss the situations in which C chart is most appropriate to use.  
(c) Figuratively represent the PDSA cycle and state its significance in the quality improvement.  
(d) State the basic elements of reliability.  
(e) Describe the purpose of an ISO 9000 quality system.  
(f) Briefly explain the step by step procedure involved in preparing a Pareto diagram.

(4 × 5 = 20 marks)

**Part C**

*Answer all questions.*

- III. (a) Enumerate the duties of quality council.

*Or*

- (b) What is cost of quality? Describe the categories and elements of quality costs in detail.

- IV. (a) List the four stages of FMEA and indicate the activities carried out under each stage.

*Or*

- (b) Use a flow chart to describe the operation of pumping gas into your car at a self-service pump. To simplify the process, make the following assumptions : (i) There is no power outages ; (ii)

**Turn over**

No waiting in line for a vacant pump ; (iii) No waiting in line at the cashier ; (iv) Credit cards and ATM cards are accepted ; (v) There is no shortage of gas.

- V. (a) (i) Describe various ways in which a control chart may be modified to meet special situations.
- (ii) Distinguish between defects and defectives. Explain the construction and operation of a p chart.

(5 + 5 = 10 marks)

*Or*

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

- VI. (a) What is acceptance sampling? Explain the difference between single and double sampling plan. How is the sample size determined in a single sample attribute plan?

*Or*

- (b) (i) Explain the Bathtub curve in detail.
- (ii) Distinguish between producer risk and consumer risk.

(5 + 5 = 10 marks)

[4 × 10 = 40 marks]