

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 0389

Roll No.

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B.Tech.

(SEM VIII) EVEN SEMESTER THEORY EXAMINATION,
2009-2010

RELIABILITY AND QUALITY MANAGEMENT

Time : 3 Hours

Total Marks : 100

Note : (i) Attempt all questions.

(ii) All questions carry equal marks.

1. Write short notes on any two of the following :

(a) Explain the following in reference to Reliability.

(i) Quality

(ii) Availability

(iii) Maintainability

(b) Discuss various causes and types of failure which are responsible for system failure.

(c) How reliability and quality affect the cost of any product ? Explain giving suitable examples.

2. Answer **any two** of the following :
- Explain Weibull Distribution. Where is it applied ? Give examples.
 - Write notes on the following :
 - Sample space
 - Gamma Distribution
 - In how many ways the word 'PROBABILITY' be arranged ?
3. Answer **any two** of the following :
- Explain in detail the construction of Bath Tube Curve. Discuss its significance.
 - What do you mean by Redundancy ? Explain various types of redundancies.
 - Discuss various methods of analyzing data to establish reliability of a system/component.
4. Answer **any two** of the following :
- Describe the design, manufacturing and application factors that influence the following failure modes of integrated circuits :
 - Electro migration
 - Latch up
 - Electrostatic damage
 - Write short notes on **any two** of the following :
 - Stress derating
 - Sneak Analysis
 - Design for Production, Test and Maintenance
 - Explain the following failure mechanisms :
 - Fatigue
 - Wear
 - Temperature

5. Answer **any two** of the following :
- What do you understand by ISO Certification ? Explain. What is the difference in ISO 9000, 9001 and ISO 14000.
 - Explain the difference between Quality, Quality Control and Total Quality Management.
 - Write notes on **any two** of the following :
 - SWOT Analysis.
 - Kaizen.
 - Pareto Analysis.
 - Quality Policy.