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Question Paper Code: 31588

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2017

Elective

Electronics and Instrumentation Engineering

01UEI921 - RELIABILITY AND SAFETY ENGINEERING

(Regulation 2013)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 2 = 20 Marks)

1. Define safety.
2. Define safety sampling.
3. Mention the differences between a safety inspection and safety audit.
4. List the types of safety audit.
5. Define reportable crash.
6. List the types of records and reports.
7. Define reliability.
8. Draw the bath-tub curve and list its regions.
9. Why is design for reliability is important?
10. Define reliability allocation.

PART - B (5 x 16 = 80 Marks)

11. (a) (i) Explain the evolution of modern safety concepts in safety engineering. (10)
- (ii) Describe safety policies. (6)

Or

- (b) (i) Illustrate the basic elements of incident recall techniques. (8)
 - (ii) Explain the several ways to perform safety inspections. (8)
12. (a) Explain the concept of non conformity report. (16)

Or

- (b) Discuss the unsafe act and unsafe condition in the shop floor. (16)
13. (a) Describe the concepts of accident investigation and analysis. (16)

Or

- (b) Explain the direct and indirect costs of accidents. (16)
14. (a) Derive the reliability function using cumulative distribution function. (16)

Or

- (b) Explain bath-tub curve and product failure behavior. (16)
15. (a) Illustrate the principles of reliability centered maintenance with example. (16)

Or

- (b) (i) Explain reliability based spare planning management implementation. (8)
 - (ii) Describe the elements of reliability growth monitoring. (8)
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