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**EI/IC-7101 (GS)****B.E. VII Semester**

Examination, December 2017

**Grading System (GS)****Safety and Reliability Engineering***Time : Three Hours**Maximum Marks : 70*

- Note:* i) Attempt any five questions.  
ii) All questions carry equal marks.

1. a) Explain the classical definition of reliability and method for reliability enhancement.  
b) What do you understand by safety? Describe the main objectives of safety programmes.
2. a) Discuss reliability testing. Enumerate the types of tests used to evaluate a design.  
b) A system consists of 10 identical components all of which must work for system series what is system reliability if each component has a reliability of 95.
3. a) What is Quality. Explain quality control design procedure.  
b) Explain with line diagram a typical large scale organisation for quality.

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4. a) Discuss the stress-strength approach for reliability design.  
b) Describe the reliability design with one example.
5. a) Discuss the effect of preventive maintenance of MTTF of a component.  
b) Derive the relationship between hazard function and reliability function.
6. Explain term quality audit, quality function quality engineering and quality control for a small and large scale organization.
7. a) What do you mean by redundancy. Why it is necessary.  
b) Explain with a neat sketch stand by redundant system in a system reliability analysis.
8. Write short notes on following (Any two):  
a) Safety codes and standards  
b) Markov models  
c) MTTF and MTBF  
d) OC curve

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