

Indian Statistical Institute, Bangalore

MS (QMS) First Year

Second Semester - Reliability, Maintainability and Safety II

Final Exam
Maximum marks: 50

Date: May 02, 2019
Duration: 3 hours

This paper carries 55 marks. You can answer as many questions as possible, but the maximum score will be limited to 50.

1. (a) Define ROCOF. How ROCOF will helpful in determining whether a repairable system is deteriorating or improving?
(b) A mechanical system's MTTR is two hours. What is the probability that the repair will be completed in three hours, if the time to repair is exponentially distributed?
(5 + 5 = 10)
2. What are the commonly used models for Accelerated Life Testing? Explain with examples.
(10)
3. (a) Explain Homogeneous Poisson Process (HPP).
(b) Explain the concept of FMEA and its usefulness in reliability study.
(5 + 5 = 10)
4. Write short note on the following
 - (a) Duane's Plot
 - (b) Maintainability
 - (c) Different types of warranty schemes
 - (d) Renewal Process
 - (e) FTA
(5 x 5 = 25)