

Unit IV

7. (a) What is predictive maintenance, when should the predictive maintenance be carried out give its advantages. 8
(b) Explain the pillars of TPM on which it works. 7
8. (a) Describe ultrasonic testing, where it is applied. 8
(b) What is thermography ? Where it is applied ? 7

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M.Tech. EXAMINATION, May 2019

(Second Semester)

(B. Scheme) (Main & Re-appear)

(ME)

MEI520B

RELIABILITY AND MAINTENANCE
ENGINEERING

Time : 3 Hours]

[Maximum Marks : 75

Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

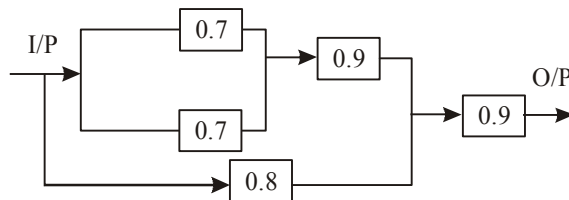
Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

Unit I

1. (a) Draw failure rate curve for an industrial product. **8**
(b) Differentiate between failure rate and hazard rate and establish relationship between them. Also explain reliability as a function of hazards rate. **7**
2. (a) Define reliability, its origin and relevance in present industrial scenario. **8**
(b) Explain the term MTTR, MTBF and MTTF along with their relationship. **7**

Unit II

3. (a) Calculate the reliability of the system as shown in fig. 1. In which elements reliability is also indicated : **10**



- (b) Explain the use of Pareto Analysis. **5**

4. Explain the following :

- (a) Design for Reliability
- (b) Optimization of Reliability
- (c) Redundancy. **15**

Unit III

5. (a) Explain the major function of maintenance department in an organization along with its objectives. **8**
(b) Differentiate between corrective and preventive maintenance. How you will decide the level of preventive maintenance that may be needed keeping overall cost of maintenance in mind. **7**
6. (a) Explain inspection along with inspection interval, inspection report and card history system. **8**
(b) Describe the maintenance policy along with the need of planned maintenance. **7**