

**Code No. OR-NRB1303**

**JAWAHARLAL NEHRU TECHNOLOGY UNIVERSITY, HYDERABAD**  
**M .Tech. II Semester Supplementary Examinations, March – 2009**  
**REHABILITY ENGINEERING MAINTENANCE MANAGEMENT**  
**(Industrial Engineering & Management)**

**Time: 3 hours****Max. Marks.60**

**Answer any Five questions**  
**All questions carry equal marks**

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- 1.a) Distinguish between reliability and quality of a product  
b) Explain the various time dependent hazard models.
2. Compare and contrast the following  
i) Reliability and Availability      ii) Reliability and Maintainability
3. A radio set consists of three major components: a power supply, a receiver, and an amplifier, having reliabilities of 0.8, 0.9 and 0.85, respectively. Compute system reliabilities for both high level and low level redundancy for systems with two parallel components.
4. Four elements a,b,c and d are connected to form a system as shown below (figure1). Determine the system reliability. Assume that the elements are independent.

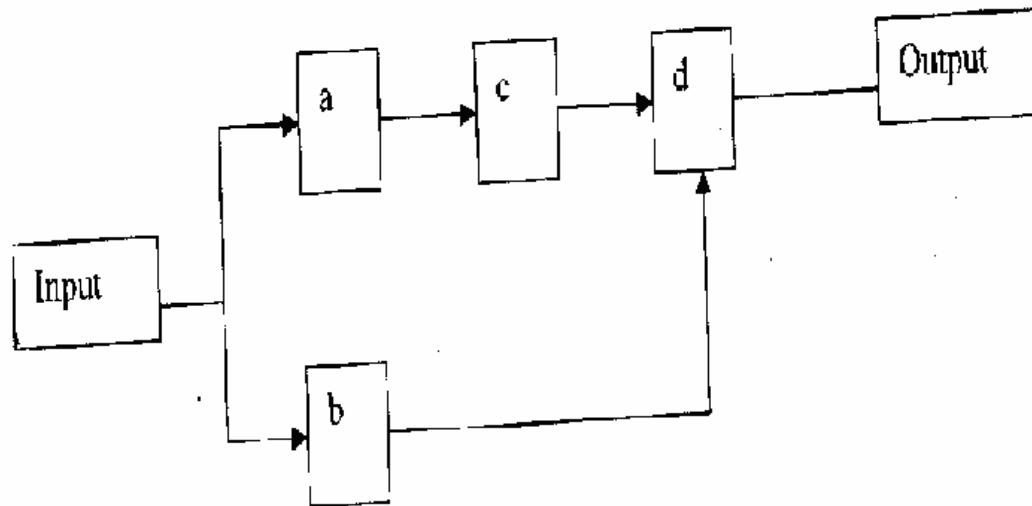


Figure 1

Cont...2

5. Compare the availability of the following two unit system with repair facilities
  - i) Series system with one repair facility
  - ii) Series system with two repair facilities,
  - iii) Active redundant system with one repair facility
  - iv) Standby system with two repair facilities.
  
- 6.a) Explain the following
  - i) Maintenance planning
  - ii) Insurance Spares
- b) What are the objectives of maintenance?
  
  
- 7.a) Explain in detail the different types of maintenance
- s b) From a sample of 85 repair times collected on the corrective maintenance of office reproduction machines, 78 of the repairs were completed within 5hr. Is the contractor's maintenance agreement to complete 90 percent of the repairs within 5 hr being met?
  
8. Write notes on any FOUR of the following:
  - a) Preventive maintainability
  - b) Policies of maintenance
  - c) MIS in maintenance
  - d) Maintenance scheduling
  - e) Quality in maintenance
  - f) Methods of finding system reliability

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