Total No. of Questions :10] *[Total No. of Printed Pages :3*

Roll No .....

ME/AU - 801(C)

B.E. VIII Semester

Examination June, 2013

Reliability and Maintenance Engineering

(Elective - III)

Time : Three Hours

Maximum Marks : 100 ***Minimum Pass Marks :35***

Note: Attempt five questions, internal choice is given as mentioned. All questions carry equal marks.

1. a) Define reliability, its origin and relevance in present industrial scenario. 10

   b) Explain the relationship between the Binomial and poisson distributions in reliability. 10

OR

2. a) Draw the failure rate curve for an industrial product and explain its shape. 10

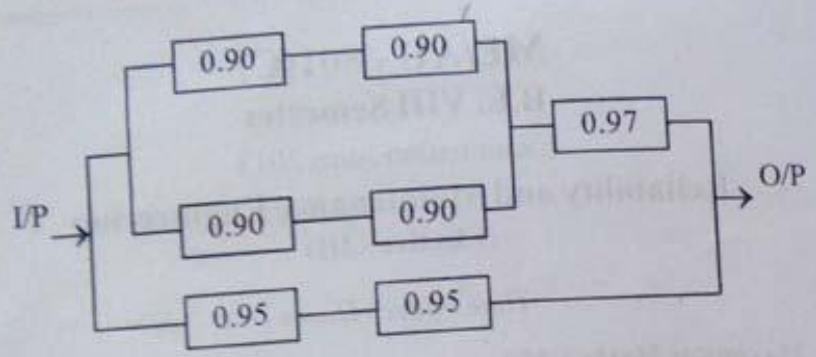
   b) Explain the relationships between reliability availability and maintenability. 10

3. a) A system consists of four identical subsystems in parallel. What should be the reliability of each subsystem. If the system reliability is to be equal to 0.99. 10

   b) Explain the methods which are used to calculate system reliability in complex configurations. 10

OR

4. a) Find the system reliability of the given configuration. 10



b) Explain K-out-of-m systems with examples. 10

5. a) How would you formulate your maintenance strategy for effective maintenance planning? Explain with examples. 10

b) What is productive maintenance? When should the productive maintenance be carried out? Write its advantages. 10

OR

6. a) What do you understand by a shutdown programme? Explain important features of a shutdown programme. 10

b) Explain the difference between predictive and preventive maintenance. 10

7. a) What are the condition monitoring methods? Give a list of various methods and where it employed. 10

b) What do you understand by lubricant monitoring techniques? Explain the method for lubricant monitoring. 10

OR

8. a) Discuss the applications of visual controls in maintenance with examples. 10

b) What is thermography? Where is it applied? 10

9. a) Explain briefly the pillars of TPM on which it works? 10

b) Explain the term FMECA with a neat sketch. What are the effects of failure? 10

OR

10. a) Briefly explain the method of risk priority number in analyzing the criticality of a subsystem. 10

b) Design the FMEA for a power plant. 10

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