Roll No. | | | | | | | | | | | | |

Total No. of Pages : 02

Total No. of Questions : 09

B.Tech.(ME) (E-I 2011 Onwards) (Sem.–6)

MAINTENANCE & RELIABILTY ENGG.

Subject Code : DE/ME-2.6

Paper ID : [A2417]

Time : 3 Hrs. Max. Marks : 60

INSTRUCTION TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students has to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students has to attempt any TWO questions.

SECTION-A

Q1 Explain briefly :

a) Objectives of maintenance.

b) Cost of machine breakdown.

c) Preventive maintenance.

d) Condition monitoring.

e) Chemical control of corrosion.

f) Concept of reliability.

g) Breakdown time distribution.

h) Stand by redundancy optimization.

i) Design out maintenance.

j) Failure rate curve for an industrial product.

SECTION-B

Q2 Explain in brief different types of maintenance organizations.

Q3 Discuss how you arrive at the economic life of a machine by considering the time value of money.

Q4 Discuss the concept of total productive maintenance. Explain the role of maintenance Engineer in implementing TPM.

Q5 Differentiate between failure rate and hazard rate and establish relationship between two.

Q6 A system consists of four identical subsystems in parallel. What should be the reliability of each sub system, if the system reliability is equal to 0.99?

SECTION-C

Q7 Write short notes on :

a) Computerized maintenance information systems.

b) Fault tree construction.

Q8 Find out the reliability of the system which has stand by redundancy by incorporating a sensing and switching device SS as shown in Figure 1. The system can work well when component A is functioning but when it fails sensing, switch allows component B to take over. Derive the expression for system reliability at any time *t*.

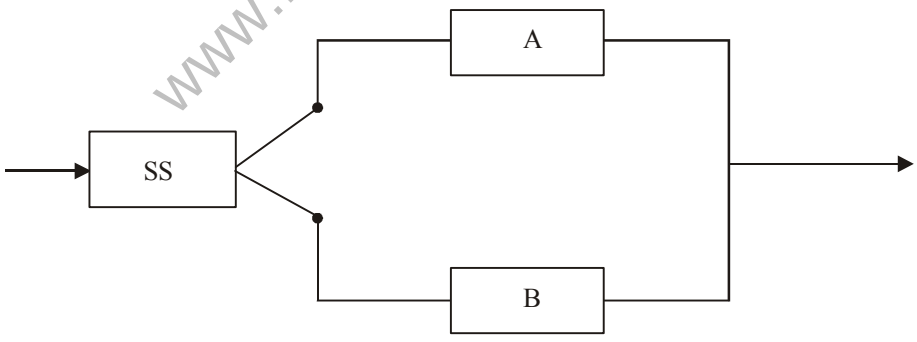

Figure – 1

Q9 a) Define reliability, its origin and relevance in present industrial scenario.

b) Write a short note on maintenance record keeping.