USN | | | | | | | | | | 15MA553

Fifth Semester B.E. Degree Examination, Dec.2018/Jan.2019
Maintenance Engineering

Time: 3 hrs.   Max. Marks: 80

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

1   a. What is maintenance system? Explain its objectives.   (06 Marks)
    b. Write the functions of maintenance system.   (06 Marks)
    c. What is the importance of maintenance in industry?   (04 Marks)

OR

2   a. Write note on:
       (i) Break down maintenance   (ii) Preventive maintenance.   (08 Marks)
    b. With an example, explain Predictive maintenance and Design out maintenance.   (08 Marks)

Module-2

3   a. Explain repair cycle.   (08 Marks)
    b. Explain the technical and economical factors to be considered while studying replacement analysis.   (08 Marks)

OR

4   a. Explain repair complexity.   (04 Marks)
    b. A large firm user 100 computer terminals which breakdown probability distribution is as follows:

Failure free month	1	2	3	4	5	6	7	8
Probability of breakdown	0.3	0.1	0.05	0.05	0.05	0.05	0.1	0.3

Average cost per terminal repair Rs. 800/- while preventive maintenance amount to Rs.200/- per machine. Assume no cost is associated with terminal down time,
       (i) Calculate cost of maintenance policy based only on repairs.
       (ii) Calculate the cost of alternate maintenance policy
       (iii) Select minimum cost policy.   (12 Marks)

Module-3

5   a. Explain the causes of machine failure.   (08 Marks)
    b. Explain the factors to be considered for maintenance planning.   (08 Marks)

OR

6   a. Explain maintenance job analysis.   (06 Marks)
    b. Write note on PERT networks in maintenance management.   (06 Marks)
    c. Explain short term and long term maintenance planning.   (04 Marks)

Module-4

7   a. Explain the economic importance of accidents in industry.   (08 Marks)
    b. Explain the safety organization in any industry.   (08 Marks)

OR

8   a.   Write note on safety standards for exhaust systems and chemical hazards.   (08 Marks)
     b.   Explain the plant housekeeping for Industrial Safety.   (08 Marks)

Module-5

9   a.   What is maintenance information system? Explain.   (08 Marks)
     b.   Discuss the various benefits of computerizing of maintenance system.   (04 Marks)
     c.   What are the features of good computerized maintenance management system?   (04 Marks)

OR

10   a.   Explain the noise control techniques in industry.   (08 Marks)
      b.   Explain the vibration control techniques in industry.   (08 Marks)

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