

Reg. No. :

Question Paper Code : 80648

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2016.

Seventh Semester

Mechanical Engineering

ME 6012 — MAINTENANCE ENGINEERING

(Regulations 2013)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What is meant by maintenance planning?
2. Define Reliability.
3. What are the types of maintenance?
4. List the various pillars of TPM?
5. What are the advantages of condition monitoring?
6. What are the instruments used in condition monitoring?
7. What are called Age- Dependent Failures?
8. What are the benefits of Fault Tree Diagram?
9. What is job card? List down its uses.
10. What do you mean by equipment records? List down the contents.

PART B — (5 × 16 = 80 marks)

11. (a) (i) What are the objectives and principles of planned maintenance? (8)
(ii) Explain MTBF, MTTF, MTTR and failure rate. (8)
Or
(b) (i) Explain briefly different types and classes of maintenance organization. (8)
(ii) List the important factors to be considered in maintenance economics. (8)

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12. (a) (i) What are all the steps involved in preventive maintenance? Also, state why preventive maintenance is better than reactive maintenance. (8)
- (ii) What do you understand by maintenance categories? Explain common types and explain the basis of their selection. (8)

Or

- (b) (i) What is total productive maintenance? Briefly explain the procedure for TPM. (8)
- (ii) What are the functions of lubrication and mention the tips on lubrication. (8)
13. (a) (i) Explain briefly the process involved in condition monitoring. (6)
- (ii) Briefly explain various methods and instruments used for condition monitoring. (10)

Or

- (b) (i) What is wear debris analysis? what are the three wear debris analysis techniques commonly used and compare their performance and uses? (10)
- (ii) Explain with a neat diagram piston thermometers. (6)
14. (a) (i) Briefly explain various repair methods of machine slide ways and spindles. (8)
- (ii) What is failure analysis? Narrate its development. (8)

Or

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- (b) Explain the following in detail:
- (i) Logical fault location methods. (8)
- (ii) Sequential fault location methods. (8)
15. (a) Explain various repair methods for the following:
- (i) Conveyors,
- (ii) Chain, rope, trolley and
- (iii) Hydraulic lift. (5+6+5)

Or

- (b) (i) Explain in detail Computerized Maintenance Management System. (8)
- (ii) Explain job order system with an example. (8)