Reg. No. : | | | | | | | | | | | | |

Question Paper Code : 41365

28/04/18 AN

B.E./B.Tech. DEGREE EXAMINATION, APRIL/MAY 2018
Seventh/Eighth Semester
Mechanical Engineering
ME 6012 – MAINTENANCE ENGINEERING
(Common to Mechanical and Automation Engineering/Production Engineering)
(Regulations 2013)

Time : Three Hours | Maximum : 100 Marks

Answer ALL questions.

PART – A **(10×2=20 Marks)**

1. Define Failure Density.
2. Three identical components each with a reliability of 0.9 are placed in series. What is the reliability of the system ?
3. Differentiate break down and predictive maintenance.
4. What is TPM ? Give the benefits ?
5. List out the key features of condition monitoring.
6. Why temperature monitoring is necessary ?
7. List the repair methods for beds.
8. What are the drawback of fault tree analysis ?
9. State the role of equipment records in maintenance.
10. List computing hardware required for maintenance.

PART – B (5×16=80 Marks)

11. a) i) With the suitable example, explain various steps in maintenance planning. (12)

ii) List out the maintenance functions and activities. (4)

(OR)

b) i) What are the basic elements of reliability and explain the factors to be considered in designing for reliability ? (8)

ii) With an example, discuss maintenance economics. (8)

12. a) i) Explain various types of maintenance approach with neat sketch. (8)

ii) List and explain the sequence activities carried out in machine shut down operation. (8)

(OR)

b) i) Explain various stages involved in implementation of TPM. (8)

ii) Explain the different types of automatic lubrication system with suitable sketch. (8)

13. a) i) What is condition monitoring ? Explain condition monitoring. (8)

ii) Explain briefly about the objective of cost estimating in condition monitoring. (8)

(OR)

b) Explain temperature sensitive tapes, pistol thermometers and wear debris analysis. (16)

14. a) Explain repair methods of the following (i) Slide ways (ii) Spindles, (iii) Lead screws and (iv) Bearings. (16)

(OR)

b) What is failure analysis ? Explain failure and their development. (16)

15. a) Explain the maintenance procedure of chain block, conveyor and trolley for material handling system. (16)

(OR)

b) With the case example, explain the use of computer in maintenance. (16)