

22/11/17 AN



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**Question Paper Code : 50834**

**B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2017**  
**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. What is the difference between maintenance and maintainability ?
2. Write the principles of reliability centered maintenance.
3. What are the advantages of preventive maintenance ?
4. What are the lubricant and wear particle tests generally carried out ?
5. What are the condition monitoring techniques generally adapted ?
6. List any four equipments used for temperature monitoring.
7. What are the geometric properties that are checked for slide ways ?
8. Define fault tree diagram.
9. Write the major stages in preventive maintenance of material handling equipments.
10. What are the functions of CMMS ?

**PART – B**

**(5×16=80 Marks)**

11. a) i) Explain the various costs associated with maintenance. (8)  
ii) What are important factors to be considered in maintenance planning ? (8)

**(OR)**

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- b) i) Briefly explain the structure of maintenance organization. (8)  
ii) Briefly explain MTBF and MTTR. (8)

12. a) Explain various maintenance categories with their merits and demerits. (16)

(OR)

- b) i) Briefly explain TPM. (8)  
ii) Briefly explain methods of lubrication. (8)

13. a) Explain the various levels/methods of condition monitoring. (16)

(OR)

- b) i) Briefly explain the on-line and off-line condition monitoring system. (8)  
ii) Briefly explain the basic steps in condition monitoring. (8)

14. a) Briefly explain the following :

- i) Failed part analysis. (8)  
ii) Any 4 approaches for risk management. (8)

(OR)

b) Briefly explain the following :

- i) Repair methods of machine guideways. (8)  
ii) FMEA and RPN (8)

15. a) Explain the work order flow diagram. (16)

(OR)

b) Explain the maintenance strategies for

- i) Cranes (8)  
ii) Conveyors. (8)

(3×16=80 Marks)

PART - B

(8)

(8)

(OR)