

B.E./B.TECH. Degree Examination, December 2020

Seventh Semester

ME16013 – MAINTENANCE ENGINEERING

(Regulation 2016)

Time: Three hours

Maximum : 80 Marks

Answer **ALL** questions

PART A - (8 X 2 = 16 marks)

1. To gives us knowledge for keeping the machine plants & process equipment in their efficient condition, the maintenance activities are planned & carried out is known as _____
 - (A) Industrial engineering
 - (B) Automobile engineering
 - (C) Production engineering
 - (D) Maintenance engineering
2. Total productive maintenance aims at
 - (A) Less idle time
 - (B) Increase in productivity
 - (C) Zero down time
 - (D) None of the above
3. Temperature monitoring technique uses which of the following devices to measure temperature of the machining surfaces?
 - a. Pyrometers
 - b. Thermocouples
 - c. Thermometers
 - d. All of the above
4. Which of the following is not material handling equipment?
 - a) Cranes
 - b) Lifts
 - c) Tongs
 - d) Hoists
5. Differentiate between Mean Time Between Failures (MTBF) and Mean Time To Failure (MTTF)?
6. List the importance of TPM. Justify.
7. Enumerate the benefits of vibration monitoring.
8. Differentiate between fault tree diagram and reliability block diagram.

PART B - (4 X16 = 64 marks)

09. (a) Explain in details about maintenance economic and Suggest the necessary steps to reduce the maintenance cost in an industry. **(16)**

(OR)

- (b) (i) Explain the equipment availability and also explain the three basic approaches to define and quantity availability. **(10)**
- (ii) Briefly explain about benefits of sound maintenance management system **(6)**

10. (a) Classify the maintenance categories? Explain common types and basis of their selection **(16)**

(OR)

- (b) Explain in details about the various stages involved in implementation of TPM. **(16)**

11. (a) (i) Explain various methods and instruments used for conditioning monitoring. **(10)**

- (ii) Enumerate benefits of the leakage monitoring? Explain some of the leakage medium used for conditioning monitoring **(6)**

(OR)

- (b) (i) List the reason for doing wear debris analysis? Briefly Explain in detail about commonly used wear debris analysis techniques. **(8)**

- (ii) Explain cost comparison with and without condition monitoring with example. **(8)**

12. (a) (i) Briefly explain the procedure for repair cycle of gears and lead screw. **(10)**

- (ii) Briefly explain with neat sketch about fault tree analysis. **(6)**

(OR)

- (b) (i) Briefly explain various repair method of machine slide ways and spindles **(10)**

- (ii) Briefly explain the following **(6)**

(i) Logical fault location methods

(ii) Sequential fault location methods