

DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/
MANAGEMENT/COMMERCIAL PRACTICE — OCTOBER, 2018

MAINTENANCE ENGINEERING

[Time : 3 hours

(Maximum marks : 100)

PART — A

(Maximum marks : 10)

Marks

I Answer *all* questions in one or two sentences. Each question carries 2 marks.

1. List any four types of maintenance.
2. Define MTBF.
3. List any four advantages of Condition monitoring.
4. Name the 5S principle used for implementation of TPM.
5. List any four Non destructive testing methods.

(5×2 = 10)

PART — B

(Maximum marks : 30)

II Answer any *five* of the following questions. Each question carries 6 marks.

1. List the advantages and disadvantages of Breakdown maintenance.
2. If the failure rate of a component is 0.003/hour, determine its reliability and MTTF for 100 hours life.
3. Explain the importance of lubrication in maintenance.
4. Explain liquid penetrant testing.
5. List the main causes of vibration in equipments.
6. List the key features of an effective condition monitoring system.
7. Explain the role of Computers in maintenance.

(5×6 = 30)

PART — C

(Maximum marks : 60)

(Answer *one* full question from each unit. Each full question carries 15 marks.)

UNIT — I

- III (a) Explain the characteristics of preventive Maintenance. List its advantages and disadvantages. 8
- (b) Explain the importance of office TPM. 7

OR

- IV (a) Explain Hydrostatic and Hydro dynamic methods of lubrication. 8
- (b) Explain the factors to be considered in maintenance planning. 7

UNIT — II

- V (a) Draw and discuss the characteristics of bath tub curve. 8
- (b) Explain maintainability. What are the factors affecting maintainability? 7

OR

- VI (a) Define :
- (i) Reliability (ii) Failure density
- (iii) Availability (iv) Failure rate 8
- (b) Discuss series and parallel reliability model. 7

UNIT — III

- VII (a) Discuss the various levels of condition monitoring. 7
- (b) Explain wear debris analysis. 8

OR

- VIII (a) Explain the procedure for vibration analysis. 7
- (b) Explain the principle of temperature monitoring. List the different methods for temperature monitoring. 8

UNIT — IV

- IX (a) Explain Ferrography. 8
- (b) Explain the preventive maintenance strategies for Conveyors. 7

OR

- X (a) Explain Ultrasonic Inspection. List its applications. 7
- (b) Explain any four methods of Corrosion monitoring. 8