

Roll No.

Total Pages : 03

BT-7/M-20

37060

MAINTENANCE ENGINEERING

ME-437E

Option I

Time : Three Hours]

[Maximum Marks : 100

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

Unit I

1. (a) Explain maintenance concept, its relationship with other functional areas. Explain its importance. **10**
(b) Describe the training and safety aspects considered in maintenance management. Also explain the economics aspects of maintenance. **10**
2. (a) Explain various types of maintenance in brief. Explain preventive maintenance functions, benefits and limitations. **10**
(b) Explain predictive maintenance in detail. Why is it important ? **10**

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Unit II

3. (a) Explain principles, steps used for implementation and benefits of CBM. **10**
- (b) Explain vibration monitoring a thermography techniques used in CBM in detail. **10**
4. (a) What do you mean by RCM ? Explain its benefits. **10**
- (b) Explain TPM elements, methodology, evaluations and its benefits. **10**

Unit III

5. (a) Explain use of fibre optics scanners, eddy currents, ultrasonic in various maintenance activities. **10**
- (b) Explain the various factors which affect the selection of NDT techniques. Explain its merits, demerits and its applications. **10**
6. (a) Explain various steps used in Maintenance Management. Also explain basic ingredients of maintenance managements. **10**
- (b) Explain various documents used in maintenance planning a control. **10**

Unit IV

7. (a) Explain various techniques used for improvement of operational reliability, safety and availability of machines and production systems. **10**
- (b) Explain key issues in improvement program. Explain fault diagnosis with the help of Ishikawa diagrams. **10**
8. (a) Explain Pareto principle used in maintenance. **5**
- (b) Explain various types of data processing system used for maintenance information, integration for reporting systems. **15**