

**B.Tech. MECHANICAL ENGINEERING
(COMPUTER INTEGRATED
MANUFACTURING)**

Term-End Examination

December, 2016

00453

**BME-025(S) : CONDITION MONITORING AND
MAINTENANCE ENGINEERING**

Time : 3 hours

Maximum Marks : 70

Note : Answer any five questions. All questions carry equal marks. Use of scientific calculator is allowed.

1. (a) Define the term 'Maintenance Engineering'.
What are the functions of maintenance engineering ? Explain the objectives of plant engineering and management.

(b) What is Preventive Maintenance ? Explain different preventive maintenance tasks with suitable examples.

7+7

2. (a) What do you understand by the term 'Maintenance Planning' ? Explain the different phases involved in maintenance planning.
- (b) Distinguish between the centralized and decentralized systems of plant engineering. Discuss the advantages of centralized plant engineering. 7+7
3. (a) Explain in brief the 'Contractual Maintenance' with suitable examples. What are its merits and demerits ?
- (b) Explain the following with suitable examples : 7+7
- (i) Breakdown Maintenance
 - (ii) Emergency Maintenance
4. (a) What is maintenance system optimization ? Discuss the application of selective inventory control techniques to maintenance system optimization.
- (b) What is codification ? What is its significance in maintenance in maintenance spare parts management ? What are the advantages of codification ? 7+7

5. (a) What do you understand by Non-Destructive Testing (NDT) ? Explain any two NDT techniques to estimate the condition of the equipment.
- (b) Discuss the applications and merits of FMEA/FMECA. 7+7
6. (a) Explain the significance of Conductor Based Maintenance (CBM). How is it more meritorious over other maintenance philosophies ? Explain.
- (b) Discuss the application of computers in Maintenance Information System. 7+7
7. (a) Briefly describe the concept of reliability, maintainability and availability. Explain the procedure that might improve the reliability of a system.
- (b) What is TPM ? What are the objectives of TPM ? Discuss the methods, tools and techniques to achieve the TPM. 7+7

8. Write short notes on any *four* of the following :

$$4 \times 3 \frac{1}{2} = 14$$

- (a) Scheduled Maintenance
 - (b) ABC Analysis
 - (c) Reliability Centred Maintenance
 - (d) Condition Monitoring
 - (e) Trend Analysis
 - (f) Spare Parts Management
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