

6E7018

Roll No. _____

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B.Tech. VI Semester (Main & Back) Examination, April/May - 2017

Mechanical Engineering.

6ME6.3A Maintenance Management

Time : 3 Hours

Maximum Marks : 80

Min. Passing Marks : 26

Instructions to Candidates:

Attempt any **five questions**, selecting **one question** from **each unit**. All Questions carry **equal marks**. (Schematic diagrams must be shown wherever necessary. Any data you feel missing suitable be assumed and stated clearly. Units of quantities used/calculated must be stated clearly.

Unit-I

1. a) What is the meaning of Maintenance Management? How it is essential in case of Plant & Machinery? (8)
- b) Define the meaning of TQM. Describe various elements for implementation of TQM. (8)

(OR)

1. a) What is standardization? Also describe ISO 9000. (6)
- b) If annual requirement of an item is 1000 units. Cost of each unit is Rs.30, ordering cost Rs.10 per order, Carrying cost 20%, calculate EOQ. (10)
 - i) If supplier sales in lots of 25. Which nearest multiple of EOQ is recommended to buy.
 - ii) If supplier offer discount of 2% on min lot size 250. Whether to buy or not?
 - iii) Supplier offer following
 - Order less than 100 - price per unit Rs.30
 - Order between 100 & 199 - price per unit Rs. 29.75
 - Order more than 200 - price per unit Rs. 29.60

Unit-II

2. a) What are the important points in administration of maintenance. Explain them Briefly. (8)
- b) What is maintenance strategy ? Describe different types of maintenance strategy. (8)

(OR)

2. a) Differentiate between planned maintenance and unplanned maintenance. (8)
- b) Draw & Describe organization chart of maintenance department. (8)

Unit-III

3. a) What is Tribology? Define its role in maintenance. (6)
- b) What is the use of lubrication in Maintenance? Define Types of lubrication Mechanisms. (6)
- c) Write a short note on seals and packings. (4)

(OR)

3. a) What is fault analysis? Describe different methods of fault analysis. (8)
- b) What are the main causes of degradation of lubricants. (8)

Unit-IV

4. a) Write short note on (6)
- i) Machine Health Monitoring
- ii) Condition monitoring
- b) Give the advantages and disadvantages of condition monitoring. (4)
- c) Explain in detail, various health monitoring techniques. (6)

(OR)

4. a) Explain about Signal processing technique and its terms. (8)
- b) Discuss about 'Data Base Design' and explain the phases of Data Base Design. (8)

Unit-V

5. a) Define RAM and explain importance of reliability and explain which factors affecting RAM. (10)
- b) Explain Application of failure mode and effects analysis. (6)

(OR)

5. a) Write short note on (9)
- i) Reliability of repairable and non repairable system.
 - ii) Improvement in Reliability.
 - iii) Utilization factor.
- b) The MTBF of plastic injection moulding machine is 300 hrs. If 100 machines of the same make, same life are working for the least 100 hrs. How many machines should have failed during this time? (7)

