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MET–003

CERTIFICATE IN CONDITION MONITORING

(CCOMO)

Term-End Examination

December, 2023

MET-003 : CONDITION MONITORING AND MAINTENANCE

Time : 3 Hours *Maximum Marks : 70*

Note : (*i*) *Answer any seven questions.*

(*ii*) *All questions carry equal marks.*

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1. (a) Discuss the importance of co-ordination function with reference to plant engineering and management. 5

   (b) Distinguish between the centralized and decentralized systems of plant engineering. 5

2. (a) Enumerate the characteristics of a maintenance strategy. 5

(b) "Prevention is better than cure." How do you support with reference to plant engineering functions ? 5

3. (a) What is standardisation ? What is its significance in maintenance spare parts management. 5

(b) Discuss different policies of scheduling, applicable to maintenance. 5

4. (a) What is hardness test ? What are its applications in maintenance engineering ? 5

(b) Explain application and merits of FMEA/FMECA. 5

5. (a) Discuss about the Lead time in Trend monitoring. 5

(b) Explain the four pillars of condition based maintenance. 5

6. (a) Discuss various techniques employed for monitoring the conditions of the equipment. 5

(b) What is maintenance information system ? How do you design it ? 5

7. (a) Define vibration and discuss the various types of vibration. 5

(b) What is phase angle and amplitude at resonance ? Explain breifly. 5

8. A damped system has following elements : 10

   M = 4 kg, K = 1 kN/m, C = 40 N-sec/m.

   Determine the following :

   (a) damping factor

   (b) natural frequency of damped observation

   (c) logrithmic decrement

   (d) no. of cycles after which the amplitude is reduced to 20%,

9. (a) Why sesimometer is not used for measuring mechanical vibrations ? Explain briefly. 5

   (b) What are the methods of trend analysis ? Explain any *one* method briefly. 5

10. Write short notes on any *two* of the following : 5+5

   (a) Application and concept of Kaizen

   (b) Differentiate TQM and TPM

   (c) Performance efficiency

   (d) Factors affecting maintainability