Reg No.:_____ Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Sixth Semester B.Tech Degree (Hons.) Examination June 2020

Course Code: ME376

Course Name: Maintenance Engineering

Max. Marks: 100 Duration: 3 Hours

PART A

Answer any three full questions, each carries 10 marks. Marks

1 a) What is the significance of specifying the reliability of an item? Will it survive the term? (5)

b) Ten transformers were tested for 500 hours each within the prescribed operating conditions, and one transformer failed exactly at the end of the 500 hours exposure. What is the failure rate for this type of transformer? (5)

2 a) Explain how reliability, availability & maintainability (RAM) are interrelated. (5)

b) Compare the terms operational availability and inherent availability with examples (5)

3 a) Compare the effects of break down maintenance and corrective maintenance activities (4)

b) How thermal monitoring helps in condition monitoring? What are the advantages of Thermal condition monitoring? Illustrate its application in any specific area. (6)

4 a) List the usual leakage monitoring methods. Give examples for the industries where leakage monitoring is important (4)

b) What are the common steps followed in executing condition based maintenance system? (6)

PART B

Answer any three full questions, each carries 10 marks.

5 a) Sketch a schematic arrangement for vibration analysis and describe its essential elements. (5)

b) Explain wear debris analysis used for lubrication monitoring. (5)

6 a) List and brief the various vibration transducers used for vibration monitoring. (5)

b) Explain briefly about ferrography used in lubrication monitoring. (5)

7 Describe the concept of event tree analysis with suitable example. (10)

8	a)	Explain the basic steps followed in Failure mode and effect analysis.	(6)
	b)	List the benefits of FMEA.	(4)

PART C

Answer any four full questions, each carries 10 marks.

9	a)	Explain the methodology followed in TPM.	(5)
	b)	Explain the 5-s maintenance concept.	(5)
10	a)	List the components (pillars) of BCM.	(5)
	b)	Bring out the differences between TPM and BCM.	(5)
11	a)	Explain the concept of lean maintenance.	(5)
	b)	Elaborate on the importance of overall equipment effectiveness.	(5)
12	a)	List and explain the objectives of maintenance organisations.	(6)
	b)	List the factors that govern the need and structure of maintenance organisation.	(4)
13	a)	List and briefly explain the different types of maintenance budget.	(5)
	b)	Briefly explain the classification of maintenance cost.	(5)
14	a)	Differentiate between the centralised and decentralised maintenance organisation.	(4)
	b)	Explain the different components/features of computer aided maintenance management system (CMMS).	(6)

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