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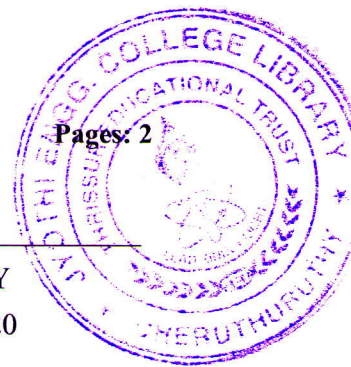
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Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Sixth semester B.Tech degree examinations (S), September 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) Define the concept of maintenance. | (4) |
| | b) Explain the objectives of maintenance. | (6) |
| 2 | a) Define the concept of system reliability. | (3) |
| | b) With necessary sketches discuss the reliability of series and parallel system. | (7) |
| 3 | a) Explain the fundamental steps in condition monitoring. | (5) |
| | b) Discuss the limitations of visual, tactile and aural monitoring. | (5) |
| 4 | a) Explain the elements of preventive maintenance. | (5) |
| | b) Discuss the advantages and disadvantages of breakdown maintenance. | (5) |

PART B

Answer any three full questions, each carries 10 marks.

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|---|-----------------------------------------------------------------------------------------------------------------------------------------------|------|
| 5 | a) Explain the three characteristics required to define vibration. | (5) |
| | b) Explain the working of any one vibration transducer with a neat sketch. | (5) |
| 6 | a) Briefly explain about spectroscopic oil analysis. | (5) |
| | b) Define crack monitoring and list out some crack monitoring techniques. | (5) |
| 7 | Explain the characteristics of Reliability Centred Maintenance and briefly describe how RCM can be carried out with the help of a case study. | (10) |
| 8 | a) Define the concept of Failure Tree Analysis (FTA). | (3) |
| | b) Explain the key elements and steps involved in FTA. | (5) |
| | c) State some applications/uses of FTA. | (2) |

PART C

Answer any four full questions, each carries 10 marks.

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|---|--------------------------------------------------------------|-----|
| 9 | a) State the objectives behind the use of terotchnology. | (5) |
| | b) Explain briefly about total productive maintenance (TPM). | (5) |

- 10 a) Briefly explain the concept of 5S. (5)
b) Explain briefly about the different maintenance performance measuring indices. (5)
- 11 a) What is Lean Maintenance? Explain the steps in Lean Maintenance. (7)
b) Define Overall Equipment effectiveness (OEE). (3)
- 12 a) Discuss about Maintenance Planning and the factors to be considered in maintenance planning. (8)
b) Define maintenance scheduling. (2)
- 13 Discuss on maintenance costs and its classification. (10)
- 14 Discuss about computer aided maintenance management systems (CMMS), its advantages, disadvantages and applications. (10)
