

Reg No.: \_\_\_\_\_

Name: \_\_\_\_\_

**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**

Sixth Semester B.Tech Degree Regular and Supplementary Examination July 2021

**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) Explain the importance of maintenance activity with an example.  | (5) |
|   | b) Explain how the productivity is related with reliability and maintainability.  | (5) |
| 2 | a) Sketch the block diagram of a system with 5 machines out of which 3 are connected in parallel and the remaining two are connected on either side of the parallel system. Describe the reliability of the above system. | (5) |
|   | b) Explain Operational availability of a car. It is always less than inherent reliability, Why?   | (5) |
| 3 | a) Illustrate Ultrasonic method of measuring thickness.   | (5) |
|   | b) Explain Condition Based Maintenance (CBM) with an example.   | (5) |
| 4 | a) Explain a method of monitoring leakage in an oil pipe.   | (5) |
|   | b) Explain the process flow of Predictive maintenance.  | (5) |

**PART B***Answer any three full questions, each carries 10 marks.*

- |   |  |     |
|---|--|-----|
| 5 | a) Explain the important causes of vibration in an IC engine.                | (4) |
|   | b) Explain the procedure of lubricant monitoring by ferrography.             | (6) |
| 6 | a) With a neat sketch explain Fault Tree Analysis (FTA).                     | (6) |
|   | b) Enumerate the causes of failure of machine elements.                      | (4) |
| 7 | a) Explain any two methods of troubleshooting machine vibration.             | (5) |
|   | b) Compare FMEA and FMECA.   | (5) |
| 8 | a) Explain the working principle of vibration transducer with a neat sketch. | (6) |
|   | b) Explain the characteristics of Reliability Centred Maintenance.           | (4) |

**PART C***Answer any four full questions, each carries 10 marks.*

- |   |  |     |
|---|--|-----|
| 9 | a) Explain six pillars of Business Centered Maintenance.   | (6) |
|   | b) Enumerate the features of Total Productive Maintenance. | (4) |

**03000ME376052105**

- 10 a) Explain the concept of zero maintenance and how it can be implemented. (6)  
b) Describe different maintenance performance measuring indices. (4)
- 11 a) Explain terotechnology process and it features. (5)  
b) Explain the use of c -chart for quality control. (5)
- 12 a) Explain the features of Computerised Maintenance Management System. (5)  
b) Describe the method of planning manpower requirement for a maintenance department. (5)
- 13 a) Differentiate between centralised and decentralised maintenance system. (5)  
b) Explain various costs under maintenance head. (5)
- 14 a) Explain the method of integrating maintenance function with other functions of production unit. (6)  
b) Explain the objectives of maintenance training. (4)

\*\*\*\*