

**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**

SIXTH SEMESTER B.TECH DEGREE EXAMINATION(R&amp;S), MAY 2019

**Course code: ME 376****Course Name: MAINTENANCE ENGINEERING**

Max. Marks: 100

Duration: 3 Hours

**Part A***(Answer any three questions: 10 x 3 = 30 Marks)*

1. a) Define Maintenance and explain the basic steps in maintaining a two wheeler on regular basis. (5)  
b) Explain any two types of availability. (5)
2. a) Explain about series and parallel combination in system reliability. (6)  
b) An electronic equipment is operated by six dry cells, each giving 1.5volts. The cells are connected in series. The probability of the successful operation of the cells under given operating conditions is 0.7, 0.6, 0.8, 0.9, 0.85 and 0.75 respectively. Calculate the reliability of the power system. (4)
3. Explain the five different types of corrective maintenance. (10)
4. a) Define Thermography with an example. (5)  
b) Define OMP. Also explain the importance of odour monitoring in an industry. (5)

**Part B***(Answer any three questions: 10 x 3 = 30 Marks)*

5. Explain any four different methods for crack monitoring in a metal piece. (10)
6. Explain the four basic operations involved in practice of spectrometric analysis procedure. (10)
7. a) Define the four principles of Reliability Centred Maintenance with an example. (7)  
b) Explain how can be failures classified based on the nature of failure. (3)

8. Define FMEA in maintenance. Explain the steps involved in FMEA. (10)

**Part C**

*(Answer any four questions: 10 x 4 = 40 Marks)*

9. a) Explain the pillars of 5S. (5)  
b) What all targets can be achieved in an industry by implementing TPM? (5)
10. a) Explain the concept of business centred maintenance (BCM). (5)  
b) Define overall equipment effectiveness (OEE). (5)
11. a) Explain the term Terotechnology. (5)  
b) Briefly explain the use of c -chart for quality control. (5)
12. a) What are the types of maintenance budgets? Explain the steps involved in preparation of maintenance budgets. (10)
13. Discuss about the functions, applications and advantages of Computer aided maintenance management system (CMMS). (10)
14. Discuss the classification of maintenance costs. Also explain how the cost of maintenance of a machine can be justified with an example. (10)