



B.E DEGREE EXAMINATIONS: APRIL / MAY 2023

(Regulation 2018)

Seventh Semester

MECHATRONICS ENGINEERING

U18MCE0017: Maintenance Engineering

COURSE OUTCOMES

CO1: Extend the concept and function of maintenance department and costs associated.

CO2: Plan for preventive maintenance.

CO3: Schedule and evaluate the maintenance.

CO4: Test the reliability in maintenance.

CO5: Analyze manpower requirement.

CO6: Explain the maintenance of mechanical and electrical systems.

Time: Three Hours

Maximum Marks: 100

Answer all the Questions:-

PART A (10 x 2 = 20 Marks)

(Answer not more than 40 words)

- | | | |
|---|-----|-------------------|
| 1. List the principles of maintenance engineering. | CO1 | [K ₂] |
| 2. What is maintenance cost? | CO1 | [K ₂] |
| 3. What is the difference between planned and preventive maintenance? | CO2 | [K ₂] |
| 4. Why is checklist important in inspection? | CO2 | [K ₂] |
| 5. How do you plan the maintenance in industry? | CO3 | [K ₂] |
| 6. What is the main purpose of maintenance department? | CO3 | [K ₂] |
| 7. What is reliability in maintenance management? | CO4 | [K ₂] |
| 8. Why reliability is important in maintenance? | CO4 | [K ₂] |
| 9. Write the objectives of man power planning. | CO5 | [K ₂] |
| 10. List the maintenance required for electrical system. | CO6 | [K ₂] |

Answer any FIVE Questions:-

PART B (5 x 16 = 80 Marks)

(Answer not more than 400 words)

- | | | | |
|--|----|-----|-------------------|
| 11. a) List the objectives and levels of maintenance. | 08 | CO1 | [K ₂] |
| b) Explain the responsibilities of maintenance department. | 08 | CO1 | [K ₂] |

12.	a)	Discuss the scope and elements of planned preventive maintenance.	08	CO2	[K ₂]
	b)	Write a planned maintenance procedure.	08	CO2	[K ₂]
13.		How can the maintenance department be improved to reduce failure?	16	CO3	[K ₂]
14.	a)	Discuss the failure function and their models in reliability.	08	CO4	[K ₂]
	b)	Explain the reliability testing and its methods.	08	CO4	[K ₂]
15.	a)	Explain the different stages of manpower planning.	08	CO5	[K ₂]
	b)	Discuss the short-range and long-range planning.	08	CO5	[K ₂]
16.		Discuss the important maintenance aspects of the following I) Bearing II) Friction clutches III) Couplings	16	CO6	[K ₂]
