



P.E.S. College of Engineering, Mandya - 571 401

(An Autonomous Institution affiliated to VTU, Belagavi)

Sixth Semester, B.E. - Mechanical Engineering

Semester End Examination; July / Aug. - 2022

Maintenance Engineering

Time: 3 hrs

Max. Marks: 100

Course Outcomes

The Students will be able to:

CO1: Distinguish maintenance system types, scope, objective, functions and importance.

CO2: Recognize Causes of machine failure, performance evaluation and overhauling.

CO3: Evaluate overhauling, maintenance planning, scheduling, estimation and maintenance control.

CO4: Analyze benefit and application of Computer aided maintenance, and pollution control.

CO5: Analyze accident records accident investigation Industrial and accident safety.

Note: I) PART - A is compulsory. Two marks for each question.

II) PART - B: Answer any Two sub questions (from a, b, c) for a Maximum of 18 marks from each unit.

Q. No.	Questions	Marks	BLs	COs	POs
I : PART - A		10			
I a.	What is preventive maintenance and predictive maintenance?	2	L1	CO1	PO1
b.	Explain repair cycle in maintenance system.	2	L1	CO2	PO1
c.	List short range planning maintenance scheduling.	2	L1	CO3	PO1
d.	List the techniques of vibration control.	2	L1	CO4	PO1
e.	List feature of Computer aided maintenance.	2	L1	CO5	PO1
II : PART - B		90			
UNIT - I		18			
1 a.	Define maintenance system. What are the objectives of maintenance system?	9	L2	CO1	PO1
b.	Briefly explain;				
	i) Breakdown maintenance system	9	L2	CO1	PO1
	ii) Condition based maintenance system				
c.	What are the functions of maintenance department?	9	L2	CO1	PO1
UNIT - II		18			
2 a.	Explain repair cycle stages under preventive maintenance.	9	L2	CO1	PO1
b.	Explain generalized procedure for complete overhaul in metal cutting equipment.	9	L2	CO1	PO1
c.	Explain how to find most optimal preventive maintenance frequency.	9	L2	CO1	PO2
UNIT - III		18			
3 a.	Explain planning procedure for maintenance functions.	9	L2	CO3	PO1
b.	Explain ABC analysis.	9	L2	CO3	PO1
c.	Explain Foreman's scheduling rack for maintenance job analysis.	9	L2	CO3	PO1

UNIT - IV**18**

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|------|--|---|----|-----|-----|
| 4 a. | Discuss the application of computer in maintenance work. | 9 | L2 | CO4 | PO1 |
| b. | With suitable sketch explain gravitational and Cyclone separators. | 9 | L2 | CO4 | PO1 |
| c. | Write a note on industrial vibration and its control technique. | 9 | L2 | CO4 | PO1 |

UNIT - V**18**

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|------|--|---|----|-----|-----|
| 5 a. | List and explain various types of Safety Organization. | 9 | L2 | CO5 | PO1 |
| b. | Write a note on analysis of accident safety standards for welding and electrical equipment system. | 9 | L2 | CO5 | PO1 |
| c. | Explain salient features of good plant housekeeping. | 9 | L2 | CO5 | PO1 |

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