

Reg. No. :

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**Question Paper Code: U7903**

B.E./B.Tech. DEGREE EXAMINATION, APRIL/MAY 2025

Professional Elective

21MEV903 INDUSTRIAL SAFETY

Mechanical Engineering

(Regulations 2021)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 2 = 20 Marks)

- |                                                                                                |        |
|------------------------------------------------------------------------------------------------|--------|
| 1. Explain the Mechanical Hazards.                                                             | CO1- U |
| 2. Classify the pressure vessels.                                                              | CO1- U |
| 3. List of tools used for maintenance.                                                         | CO1- U |
| 4. Explain the Equipment Lifecycle                                                             | CO1- U |
| 5. Classification of Wear.                                                                     | CO1- U |
| 6. List the factors decreasing adhesive wear                                                   | CO1- U |
| 7. Explain the fault tracing.                                                                  | CO1- U |
| 8. Outline of the fault tracing importance.                                                    | CO1- U |
| 9. Explain the periodic maintenance.                                                           | CO1- U |
| 10. Explain the concept of predictive maintenance and how it complements periodic maintenance. | CO1- U |

PART – B (5 x 16= 80 Marks)

- |                                                                                                                   |         |      |
|-------------------------------------------------------------------------------------------------------------------|---------|------|
| 11. (a) Explain the two types of electrical hazards in workplaces and outline specific preventive steps for each. | CO1- U  | (16) |
| Or                                                                                                                |         |      |
| (b) Explain the Health provisions and safety provisions for workers in Factory Act 1948.                          | CO1- U  | (16) |
|                                                                                                                   |         |      |
| 12. (a) Classify the maintenance tools and applications of tools used for Maintenance with proper justifications. | CO2-App | (16) |

Or

- (b) Apply corrective and preventive maintenance strategies, considering their costs, approaches, and impact on equipment reliability? CO2-App (16)
13. (a) Analyze the different classifications of wear and evaluate the primary causes of wear. Provide detailed explanations and examples to support your analysis of the contributing factors. CO3-Ana (16)
- Or
- (b) Analyze the relationship between wear and lubrication methods and suggest the most effective lubrication method for a manufacturing process. CO3-Ana (16)
14. (a) How would you determine the next step in a decision tree if the initial condition is met? CO2-App (16)
- Or
- (b) Construct the decision tree for problem identification in any one of the machine tool. CO2-App (16)
15. (a) Explain in detail about concept, needs and repairing schemes of periodic maintenance. CO1- U (16)
- Or
- (b) Discuss about the overhauling of electric motor and common troubles involved in it with remedies. CO1- U (16)