

A

Reg. No. :

--	--	--	--	--	--	--	--	--	--

Question Paper Code: 99718

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

Elective

Mechanical Engineering

19UME918- MAINTENANCE ENGINEERING

(Regulations 2019)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. What is the third phase of equipment life cycle? CO1 - U
(a) Intrinsic (b) Design defect
(c) Wear out failure (d) None of the above
2. The ____ goes on increasing with the increase in degree of maintenance efforts CO1 - U
(a) Cost of down time (b) Cost of spares and maintenance
(c) Labor and Overhead Cost (d) All of the above
3. Maintenance that involves a system of periodic inspection and maintenance designed to keep machine in operation is called CO1 - U
(a) Total productive maintenance (b) Preventive maintenance
(c) Breakdown maintenance (d) Predictive maintenance
4. A lubricant oil is needed to run the machine ____ CO1 - U
(a) Quickly (b) With increased friction
(c) With cleanliness (d) Without noise
5. Condition monitoring is the basic for ____ maintenance. CO1 - U
(a) Shut down (b) Preventive
(c) Predictive (d) Break down

6. Wear debris analysis is related to CO1 - U
 (a) Oil analysis (b) Temperature analysis
 (c) Pressure analysis (d) None of the above
7. The general failure mode in the gears are CO1 - U
 (a) Fatigue (b) Wear (c) Stress rupture (d) All of the above
8. Which of the following is not used in testing the pitch accuracy of lead screw? CO1 - U
 (a) A negative stop (b) Slip gauge
 (c) Length bars (d) Dial gauge
9. Wheel barrows is used for CO1 - U
 (a) lifting and lowering (b) vertical transportation
 (c) both 'a' and 'b' (d) None of the above
10. The following is used to transport materials having flat bottoms CO1 - U
 (a) Belt conveyor (b) Roller conveyor
 (c) Chain conveyor (d) None of the above

PART – B (5 x 2= 10 Marks)

11. Define reliability? CO1 - U
12. Classify various planned maintenance approach. CO1 - U
13. Name some of the methods of leakage monitoring CO1 - U
14. Define FMEA? CO1 - U
15. Define the term Computerized Maintenance Management System (CMMS). CO1 - U

PART – C (5 x 16= 80 Marks)

16. (a) What do you mean by maintenance job planning? Illustrate various steps involved in maintenance job planning with example. CO2 - U (16)
 Or
 (b) List out various factors to be considered in the preparation of Maintenance budget. CO2 - U (16)
17. (a) What are all the steps involved in preventive maintenance? Analyze why preventive maintenance is better than reactive maintenance with an example. CO3 - U (16)
 Or
 (b) Explain the any two Scheduling Techniques with suitable examples. CO3 - U (16)

- | | | | | |
|-----|-----|---|---------|------|
| 18. | (a) | Analyze briefly the cost comparison with and without condition monitoring for a plant | CO4 - U | (16) |
| | | Or | | |
| | (b) | Explain the any two methods and Instruments for Conditioning Monitoring. | CO4 - U | (16) |
| 19. | (a) | Identify as a maintenance engineer describe the steps involved to perform the FMEA | CO5 - U | (16) |
| | | Or | | |
| | (b) | Examine the maintenance practices for gears. | CO5 - U | (16) |
| 20. | (a) | List the work order flow diagram with a neat sketch. | CO6- U | (16) |
| | | Or | | |
| | (b) | Examine the preventive maintenance strategies for Conveyors. | CO6 - U | (16) |

