A **Reg. No. :** | | | | | | | | | | |

Question Paper Code: 99718

B.E./B.Tech. DEGREE EXAMINATION, APRIL 2024

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. S.W.L means? CO1 - U

(a) Safe working load (b) Standard working load

(c) Side working load (d) Stable working load

2. A systematic approach for maintenance is CO1 - U

(a) Problem – Cause – Diagnosis – Rectification

(b)Problem– Diagnosis – Cause – Rectification

(c) Problem – Measure – Diagnosis – Rectification

(d) Problem– Diagnosis – Measure – Rectification

3. With the increase in cost of preventive maintenance, the breakdown maintenance cost will _____ CO1 - U

(a) Decrease (b) Increase at faster rate

(c) No charge (d) Increase

4. Which pillar of TPM focuses on routine maintenance? CO1 - U

(a)Training and Education (b) Just-in-time

(c) 5S (d) Autonomous maintenance

5. Pistol thermometer used to capture a — CO1 - U

(a) Digital photographic image as a pressure value

(b) Digital photographic image as a velocity value

(c) Digital photographic image as a temperature value

(d) Digital photographic image as a resistance value

6. Which condition monitoring technology is not used to identify problems with bearings — CO1 - U

(a) Vibration analysis (b) Shock pulse method

(c) Themography (d) Acoustic leakage monitoring

7. The failure rate is also known as — CO1 - U

(a) Safety rate (b) Hazardous rate

(c) Defect rate (d) Distortion rate

8. Why failure occurs in bearing? — CO1 - U

(a) Proper bearing selection (b) Improper lubrication

(c) Proper mounting (d) Sufficient lubricant quantity

9. Fork lifttruck is used for — CO1 - U

(a) liftingandlowering (b) vertical transportation

(c) both (a) and (b) (d) None of the above

10. Thefollowing is usedtotransportmaterialshavingflatbottoms — CO1 - U

(a) Beltconveyor (b) Rollerconveyor

(c) Chainconveyor (d) None of the above

PART – B (5 x 2= 10Marks)

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= 80Marks)

16.	(a)	Explain and distinguish the various concept MTBS, MTBF, MTTF, MTTR and failure rate?	CO2 - U	(16)
		Or		
	(b)	Discuss and choose a type of maintenance organization model among the two types of maintenance organization model with neat sketch.	CO2 - U	(16)
17.	(a)	Explain the Breakdown Maintenance with flow diagram.	CO3 - U	(16)
		Or		
	(b)	Explain the any two Scheduling Techniques with suitable examples.	CO3 - U	(16)
18.	(a)	Explain wear debris analysis techniques commonly used and compare their performance and uses with suitable examples?	CO4 - U	(16)
		Or		
	(b)	Briefly explain the basic steps in conditional monitoring	CO4 - U	(16)
19.	(a)	Analysis the various repair methods of machine slide ways and spindles	CO5 - U	(16)
		Or		
	(b)	Examine the maintenance practices for gears.	CO5 - U	(16)
20.	(a)	Categorize the role of Computer in maintenance with suitable examples.	CO6 - U	(16)
		Or		
	(b)	Discover the general structure of computerized maintenance monitoring system in detail.	CO6 - U	(16)