Reg. No. : | | | | | | | | | | |

Question Paper Code:49717

B.E./B.Tech. DEGREE EXAMINATION, DEC 2021

Elective

Mechanical Engineering

14UME917 MAINTENANCE ENGINEERING

(Regulation 2014)

Duration: Three hours Maximum: 100 Marks

PART A - (10 x 1 = 10 Marks)

(Answer all Questions)

1. What is the third phase of equipment life cycle? CO1- R

   (a) Intrinsic (b) Design defect (c) Wear out failure (d) None of the above

2. The ratio of the number of times we can expect an event to occur to the total number of trail undertaken is known as CO1- R

   (a) Adequate performance acquirements (b) Duration of adequate performance

   (c) Reliability expressed as probability (d) Environmental or operating conditions

3. Which one is not a classification of maintenance CO2- R

   (a) Corrective maintenance

   (b) Timely maintenance

   (c) Scheduled maintenance

   (d) Preventive maintenance

4. Purpose of material handling is to CO2- R

   (a) Improve productivity (b) Reduce work fatigue

   (c) Promote plant safety (d) All of these

5. Thermistor is used to measure the CO3- R

   (a) Temperature rise (b) Temperature fall (c) Temperature change (d) All the above

6. Wear debris analysis is related to CO3- R

(a) Oil analysis (b) Temperature analysis

(c) Pressure analysis (d) None of the above

7. Engine oil should possess a property of CO4- R

(a) Low viscosity index (b) High oxidation stability

(c) High pour point (d) None of the above

8. Risk priority number is the CO4- R

(a) Sum of severity, occurrence, detection ratings

(b) Product of safety factor, occurrence, detection ratings

(c) Sum of safety factor, occurrence, detection ratings

(d) Product of severity, occurrence, detection ratings

9. Which one of the following is not a material handling equipment CO5- R

(a) Fork lift (b) Conveyors (c) Crane (d) None of the above

10. Computerized Maintenance Management System includes CO5- R

(a) development of a database (b) analysis of available part records

(c) feedback control system (d) all the above

PART – B (5 x 2= 10Marks)

11. What is Mean Time Between failures (MTBF) and Mean Time To Failure (MTTF)? CO1- R

12. Write short notes on Repair Cycle. CO2- R

13. What is Wear – debris analysis? CO3- R

14. What is failure mode? CO4- R

15. What are the objectives of material handling system CO5- R

PART – C (5 x 16= 80Marks)

16. (a) Show the various objectives of maintenance planning. Derive the expression for determining Mean Time To Failure(MTTF).. CO1-App (16)

Or

(b) Illustrate the different types and classes of maintenance organization. CO1-App (16)

17.	(a)	What are all the steps involved in preventive maintenance why preventive maintenance is better than reactive maintenance.	CO2-App	(16)
		Or		
	(b)	What are the functions of lubrication and gives the tips on lubrication.	CO2-U	(16)
18.	(a)	Explain condition monitoring and What types of condition monitoring are normally used in industry, why?	CO3-App	(16)
		Or		
	(b)	Briefly explain various methods and instruments for condition monitoring.	CO3-App	(16)
19.	(a)	Discuss in detail about the procedure for the repair cycle of gears and lead screw.	CO4-U	(16)
		Or		
	(b)	Describe the repair methods for machine beds and gear wheels with appropriate sketches.	CO4-Ana	(16)
20.	(a)	Explain repair methods of conveyors.	CO5-U	(16)
		Or		
	(b)	Discuss the following (i) job order system (ii) applications of computers in maintenance	CO5-U	(16)