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Question Paper Code:49717

B.E./B.Tech. DEGREE EXAMINATION, NOV 2018

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 trial 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. What is the objective of preventive maintenance? CO2- R
 - (a) To minimize the number of break downs on critical equipment
 - (b) To increase the productive life of all capital equipment
 - (c) Both a & b
 - (d) none

4. Lights machines like watches, clocks are the applications of CO2- R
 - (a) Hydrostatic lubrication
 - (b) Thin film lubrication
 - (c) Hydrodynamic lubrication
 - (d) Extreme pressure lubrication

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. The failure rate is also known as CO4- R
 (a) Safety rate (b) Hazardous rate (c) Defect rate (d) Distortion rate
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. Which one is not the structure of CMMS CO5- R
 (a) Work order planning and schedule (b) Maintenance store controls
 (c) Computer storage (d) Preventive maintenance

PART – B (5 x 2= 10Marks)

11. What is Mean Time Between failures (MTBF) and Mean Time To Failure (MTTF)? CO1- R
12. List the various planned maintenance approach CO2- R
13. What are the instruments used in condition monitoring? 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) Explain Total Productive Maintenance (TPM). CO2-U (16)
18. (a) Explain condition monitoring and justify which 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) As a maintenance engineer describe the steps involved to perform the FMEA CO4-U (16)
- Or
- (b) Explain the logical fault location methods. CO4-Ana (16)
20. (a) Briefly explain the preventive maintenance strategies for cranes CO5-U (16)
- Or
- (b) Discuss the following CO5-U (16)
- (i) job order system
- (ii) applications of computers in maintenance

