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Question Paper Code: 49304

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

Elective

Electrical and Electronics Engineering

14UEE908- OPERATION AND MAINTENANCE OF ELECTRICAL EQUIPMENTS

(Regulation 2014)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions.

PART A - (10 x 1 = 10 Marks)

- The typical form seeking permission to approach the work place regarding for maintenance is _____.
 - Permit to work
 - Work to permit
 - Access to work
 - Work to Access
- Total productive maintenance aims at
 - Less idle time
 - Increase in productivity
 - Zero down time
 - None of the above
- In DC generators iron losses are made up of:
 - Hysteresis and friction losses
 - Hysteresis, eddy current and brush contact losses
 - Hysteresis and eddy current losses
 - Hysteresis, eddy current and copper losses
- In a substation the equipment used to limit short circuit current level is
 - Series reactor
 - Coupling capacitor
 - Lightening switch
 - Isolator

5. Tap changing transformers are used for
- (a) Stepping up the voltage
 - (b) Stepping down the voltage
 - (c) both stepping up and stepping down the voltage
 - (d) Supplying low voltage current for instruments
6. Which of the following is not a routine test on transformers?
- (a) Core insulation voltage test
 - (b) Impedance test
 - (c) Radio interference test
 - (d) Polarity test
7. Ferranti effect will not occur in which of the following transmission lines
- (a) Long transmission lines
 - (b) Short transmission lines
 - (c) Medium transmission lines
 - (d) All of the above
8. The disadvantage of transmission lines as compared to cables is
- (a) Exposure to lightening
 - (b) Exposure to atmospheric hazards like smoke, ice, etc.
 - (c) Inductive interference between power and communication circuits
 - (d) All of the above
9. A three point starter is considered suitable for
- (a) Shunt motors
 - (b) shunt as well as compound motors
 - (c) Shunt, compound and series motors
 - (d) All D.C. motors
10. For which of the following applications a D.C. motor is preferred over an A.C. motor?
- (a) Low speed operation
 - (b) High speed operation
 - (c) Variable speed operation
 - (d) Fixed speed operation

PART - B (5 x 2 = 10 Marks)

11. What is Preventive Maintenance?
12. What are different types of busbar arrangement Schemes in Substations?
13. List out the various schedules of maintenance done on transformers?
14. What should be the minimum spacing between conductors?
15. What is the function of starters in DC motor?

PART - C (5 x 16 = 80 Marks)

16. (a) State the precautions to be taken while maintaining and testing electrical equipment. (16)
- Or
- (b) Explain different types and functions of committee of safety organization. (16)
17. (a) Explain the classification of substation according to application. (16)
- Or
- (b) Illustrate the various steps in maintenance of circuit breakers. (16)
18. (a) Describe testing of transformer oil. (16)
- Or
- (b) Explain about testing of transformers. (16)
19. (a) Explain the construction and working of expulsion type lightning arrester. (16)
- Or
- (b) Explain the procedure of cable laying. (16)
20. (a) Explain with a control circuit the working of a automatic 3 stepped rotor resistance starter for wound rotor Induction motor. (16)
- Or
- (b) Draw a neat schematic diagram of a four point starter and explain its working. (16)
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