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Question Paper Code: 53326

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2019

Third Semester

Electronics and Instrumentation Engineering

15UEE326 - ELECTRICAL TECHNOLOGY

(Regulation 2015)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

- Two point starters are used in
 - Shunt Motor
 - Series Motor
 - Compound Motor
 - Slip Ring Induction Motor
- Brushes in a D.C Machine are usually made of
 - Carbon
 - Copper
 - Aluminium
 - Silver
- In a transformer, core is laminated to
 - Reduce Copper loss
 - Reduce Hysteresis loss
 - Reduce Cost
 - Reduce Eddy current loss
- A Constant Flux Machine can also be called as
 - Transformer
 - Alternator
 - Motor
 - Generator
- How does the three phase winding is connected to reverse the direction of rotation of RMF?
 - Interchange any two terminals of three phase winding
 - Interchange all three terminals alternatively
 - Connect any two terminals only
 - None of the above

6. Slip of induction motor cannot be
 (a) Zero (b) Unity (c) Infinity (d) All the three
7. If the field of a synchronous motor is under excited the power factor will be
 (a) lagging (b) leading (c) unity (d) more than unity
8. Motor which is not capable of self starting is
 (a) Series Motor (b) Shunt Motor
 (c) Three Phase Induction Motor (d) Synchronous Motor
9. Universal Motor can operate with
 (a) AC Supply only (b) AC as well as DC Supply
 (c) DC Supply only (d) High frequency AC supply
10. The starting torque of a capacitor start motor is
 (a) zero (b) low
 (c) same as rated torque (d) more than rated torque

PART - B (5 x 2 = 10 Marks)

11. Write the EMF equation of DC generator?
12. Differentiate core and shell type transformer.
13. Write the torque equation of induction motor.
14. Define hunting.
15. What is the need for centrifugal switch in a Capacitor Start Motor?

PART - C (5 x 16 = 80 Marks)

16. (a) Explain the characteristics of DC generators in detail. (16)

Or

- (b) Derive the Torque equation of a D.C Machine and explain about the factors affecting Torque. (16)
17. (a) With neat diagram, explain the construction of a core type transformer. Give the relationship between primary and secondary voltages and currents in a transformer. (16)

Or

- (b) Explain how equivalent circuit parameters of a transformer are obtained by conducting Open Circuit and Short Circuit tests. (16)
18. (a) With diagram, explain the construction of a Slip ring Induction Motor and also draw its Slip-Torque Characteristics. (16)

Or

- (b) Explain about any two starters used for a Squirrel Cage Induction Motor. (16)
19. (a) Compare Salient Pole and Non Salient Pole alternators. Explain the need for damper windings in an alternator. (16)

Or

- (b) (i) Write a short note on V curve of synchronous motor. (8)
- (ii) Write a short note on starting methods of synchronous motor. (8)
20. (a) Explain the construction and working of Hysteresis Motor. (16)

Or

- (b) Explain the principle of operation and constructional details of switched reluctance motor. (16)

