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Question Paper Code: 53326

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

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
- A Constant Flux Machine can also be called as
 - Transformer
 - Alternator
 - Motor
 - Generator
- In a DC motor, unidirectional torque is produced with the help of
 - brushes
 - commutator
 - end-plates
 - both (a) & (b)
- The starting torque of a simple squirrel-cage motor is
 - low
 - increases as rotor current rises
 - decreases as rotor current rises
 - high
- Rotor resistance starter is used in
 - Squirrel Cage Induction Motor
 - Slip Ring Induction Motor
 - DC Series Motor
 - DC Compound Motor

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 speed of a universal motor can be controlled by
(a) introducing a variable resistance in series with the motor
(b) tapping the field at various points
(c) centrifugal mechanisms
(d) any of the above

PART - B (5 x 2 = 10 Marks)

11. What is the function of commutator and brushes in a D.C Machine?
12. Define voltage regulation of transformer.
13. Define slip in an Induction Motor.
14. What is meant by hunting?
15. What is the need for centrifugal switch in a Capacitor Start Motor?

PART - C (5 x 16 = 80 Marks)

16. (a) What is the function of commutator and brushes in a D.C Machine? (16)
- Or
- (b) Explain the constructional details and principle of DC generator. (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) Explain in detail about equivalent circuit of three phase induction motor. (16)

Or

(b) Explain about any two starters used for a Squirrel Cage Induction Motor. (16)

19. (a) Explain the principle of operation and constructional details of alternators with neat sketch. (16)

Or

(b) Draw and explain V curves of an alternator for different loads. (16)

20. (a) Explain the operation and characteristics of single phase capacitor start capacitor run motors. State its applications. (16)

Or

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