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

Question Paper Code: 53326

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

1. Laminations of core are generally made of

   (a) cast iron (b) carbon (c) silicon steel (d) stainless steel

2. The material for commutator brushes is generally made of

   (a) Mica (b) Copper (c) Cast iron (d) Carbon

3. A shunt DC motor works on AC mains

   (a) unsatisfactorily (b) satisfactorily (c) not at all (d) none of these

4. In a DC motor, unidirectional torque is produced with the help of

   (a) brushes (b) commutator (c) end-plates (d) both (a) & (b)

5. The starting torque of a simple squirrel-cage motor is

   (a) low (b) increases as rotor current rises
   (c) decreases as rotor current rises (d) high

6. Rotor resistance starter is used in

   (a) Squirrel Cage Induction Motor (b) Slip Ring Induction Motor
   (c) DC Series Motor (d) 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. Which motor is used in Grinders and washing machine?

(a) BLDC motor (b) Stepper Motor
(c) Servo motor (d) Split Phase induction Motor

10. Motor that is used in Dot Matrix printer and floppy disk drive

(a) BLDC motor (b) Stepper Motor
(c) Servo motor (d) Split Phase induction Motor

PART - B (5 x 2 = 10 Marks)

11. Give the applications of DC shunt and series motor.

12. Define voltage regulation of transformer.

13. State the condition for three phase induction motor to attain its maximum torque.

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

Or

(b) Explain the constructional details and principle of DC generator. (16)

17. (a) (i) Derive the EMF equation of single phase transformer. (8)

(ii) Explain in detail about phasor diagram of single phase transformer on resistive, inductive and capacitive load conditions. (8)

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) Classify different types of three phase induction motor starters and explain in detail following three phase induction motor starters

(i) Stator resistance starter (8)

(ii) Autotransformer starter (8)

19. (a) Explain the principle of operation and constructional details of alternators with neat sketch. (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 operation and characteristics of single phase capacitor start capacitor run motors. State its applications. (16)