

Reg. No. :

--	--	--	--	--	--	--	--	--	--

Question Paper Code: 50307

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2017

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
- In a DC motor, unidirectional torque is produced with the help of
 - brushes
 - commutator
 - end-plates
 - both (a) & (b)
- The slip speed of an induction motor depends upon
 - Armature current
 - Supply voltage
 - Mechanical load
 - Eddy currents

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. Synchronous Motor operate in
- (a) Leading Power factor only (b) Lagging Power factor only
(c) Unity Power factor only (d) Leading, lagging and Unity Power factors
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. Motor used in ceiling fans is
- (a) Capacitor start and run induction Motor (b) DC Series Motor
(c) Universal Motor (d) Stepper Motor

PART - B (5 x 2 = 10 Marks)

11. What is the function of commutator and brushes in a D.C Machine?
12. What are the losses occurring in a transformer?
13. Define slip in an Induction Motor.
14. How Hunting is reduced in a Synchronous Machine?
15. What is the need for centrifugal switch in a Capacitor Start Motor?

PART - C (5 x 16 = 80 Marks)

16. (a) Derive the emf equation of a D.C Generator and list the factors affecting the generated voltage and terminal voltage. (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) Draw and explain V curves of an alternator for different loads. (16)

20. (a) Explain the construction and working of Hysteresis Motor. (16)

Or

- (b) What is Stepper Motor? In which type of application, it is used? Explain the working of any one type of Stepper Motor. (16)

