Sem - IV | CB GS | EM | ETRX | 20/12/2018.

(3 Hours) Marks: 60

N.B

1. Question 1 is compulsory
2. Solve any **THREE** out of the remaining 5 questions
3. Figures on the right indicate full marks
4. Assume suitable data if necessary

Q1. Solve any **THREE** (15)

a) Explain the significance of back emf of a DC Motor
b) Name the different starting methods of single phase induction motor & explain the working of split phase motor
c) State the important applications of brushless DC motor
d) Explain v/f method of speed control of 3 phase induction motor

Q2. a) Explain double field revolving theory in a single phase induction motor (7)

b) Explain the construction & working of 3-phase squirrel cage induction motor. (8)

Q3. a) Describe the construction and working principle of a switched reluctance motor (8)

b) Explain different speed control methods of a DC shunt motor (7)

Q4. a) Name different types of unipolar brushless DC motor& describe any one type in detail. (7)

b) With neat diagram, explain the working of star-delta starter in a 3-phase induction motor. (8)

Q5. a) Explain the construction and working of a permanent magnet synchronous motor. (7)

b) Describe torque-slip characteristics of a three phase induction motor in 4 modes. (8)

Q6. Write short notes on (15)

a) 3 point starter of a DC motor
b) Variable reluctance stepper motor
c) Equivalent circuit of a three phase induction motor
