

Duration: 3 hrs.

Total 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) A 6 pole, 50Hz Induction motor has a full load speed of 950 rpm. Calculate slip.
- b) Derive emf equation of a dc 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) Develop equivalent circuit of a 3-phase Induction motor.

(8)

b) Explain the working of capacitor start Induction motor.

(7)

Q3. a) Describe the construction and working principle of a variable reluctance motor.

(8)

b) With neat diagram, discuss the working of a 3 point starter in a dc motor.

(7)

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

(8)

b) What are the advantages, disadvantages & applications of Switched reluctance motors?

(7)

Q5. a) Compare 3 phase induction motor with 3 phase 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) Auto-transformer Starting of 3 phase induction motor
- b) Permanent magnet synchronous motor
- c) Double field revolving theory