

(3 Hours)

Marks : 80

- N.B. : 1. Q.No.1 is compulsory.
2. Answer any three out of remaining questions.

- Q1. Attempt the following (Any4) (20)
- a) What is a starter. Explain its importance in dc motor.
 - b) List various applications of induction motor.
 - c) What is the necessity of starter for DC motor.
 - d) Draw and explain VI characteristics of DIAC
 - e) Compare ideal OP-AMP with practical OP-AMP.
- Q2. A) What is stepper motor. Explain any one type of stepper motor with neat diagram. (10)
- B) Define power system. Explain briefly about power generation, transmission and distribution system with neat diagram. (10)
- Q3. A) Explain the advantage of BLDC motor over brushed motor with neat diagram. (10)
- B) A 3- ϕ 440V induction motor supplied from 50Hz system. (10)
- Calculate : i) The synchronous speed.
ii) The rotor speed, when slip is 4%
iii) Rotor frequency when rotor runs at 600rpm.
- Q4. A) Explain the working of dc motor with neat diagram. (10)
- B) Draw and explain Torque-Speed characteristics of 3 phase induction motor. Also derive the condition for torque equation. (10)
- Q5 A) Explain different types of single phase induction motor. (10)
- B) Explain the construction of induction motor with neat diagram. (10)
- Q6. Write short note on (Any 3) (20)
- a) Applications of Stepper motor
 - b) Transmission system
 - c) Phase shift oscillator
 - d) i) Convert $(6327.4051)_8$ into its equivalent decimal number.
ii) Convert $(2F9A)_{16}$ to equivalent binary number.