Q.P. Code : 24653

[Time: 03 Hours] **[Marks:80]**

Please check whether you have got the right question paper.

N.B:
1. Question.No.1 is compulsory.
2. Attempt any 03 Questions out of remaining 05 Questions.
3. Fig. to right indicates full marks.

Q.1 Attempt the following: **20**

a) What is the necessity of starter for DC Motor?
b) Why single phase induction motor is not self-starting? How it is self-started.
c) Explain various logic gates.
d) Explain electrical welding.

Q.2 a) Discuss the electrical and electronic speed control methods of DC shunt motor? **10**

b) Explain the working of stepper motor and discuss its industrial application. **10**

Q.3 a) Derive the Torque equation for 3 phase I.M. Relate motor torque with slip and draw the Torque slip and Torque – speed characteristics of 3 phase I.M. **10**

b) Explain the electromechanical energy conversion and state various losses at energy stage of electro-mechanical energy conversion of 3 phase I.M? **10**

Q.4 a) Explain the methods to calculate Efficiency and regulation of transformer. **10**

b) Discuss “Transmission and distribution” of electric power. **10**

Q.5 a) Explain the block diagram and pin configuration of OPAMP and explain its ideal characteristics. **10**

b) Explain the application of SCR for speed control of AC motors. **10**

Q.6 Write short notes on (Any 4) **20**

a) Industrial timers and relays.
b) Industrial application of AC commutator motors.
c) VI characteristics of SCR.
d) Block diagram of Microprocessor 8085.
e) Multiplexers and Demultiplexer.