Q.P. Code : 559701

(3 Hours) [Total Marks : 80

N.B. : 1) Question no. 1 is compulsory.
      2) Attempt any three from Q.2 to Q.6 .
      3) Illustrate your answer with neat sketches.

1. Attempt any four of the following :   **20**
    a)   What is the necessity of starter for D.C.Motor.
    b)   Why Single phase Induction Motor is not self starting? How it is self started?
    c)   Explain the various logic gates.
    d)   Explain resistance welding, process control using SCR.
    e)   Explain the programmable Logic controller.

2 (a)   Discuss the constructional details and working principle of D.C.Motor.   **10**
  (b)   Explain the working of Stepper motor and discuss its industrial applications.   **10**

3 (a)   Draw and explain the Torque-Slip and Torque-speed characteristics of 3-φ I.M.   **10**
  (b)   Explain different speed control techniques of DC motor.   **10**

4. (a)   Explain the methods to calculate Efficiency and regulation of transformer.   **10**
  (b)   Discuss 'Transmission and distribution of electric power'.   **10**

5. (a)   Explain the block diagram and pin configuration of OP -AMP and Explain its ideal characteristics .   **10**
  (b)   Explain the application of SCR for speed control of AC Motors .   **10**

6 Write a short notes on (any four)   **20**
    (1)   Industrial timers and relays.
    (2)   Industrial applications of A C Commutator motors.
    (3)   V-I characteristics of SCR.
    (4)   Block diagram of microprocessor 8085.
    (5)   Multiplexers, de-multiplexers

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