Q.P.Code: 50590

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

Please check whether you have got the right question paper.

N.B: 1. Question no.1 is compulsory.
2. Solve any three questions from remaining questions.

Q1Attempt the following (any4) 20

a) Explain working principle of transformer

b) Draw and explain VI characteristics of SCR

c) Explain various ideal characteristics of OPAMP741

d) Explain why single phase induction motor is not self starting.

e) State and prove Demorgan theorems

Q2 A) Explain speed control of DC motor with neat diagram using 10

1) Field control method

2) Armature control method

B) Explain construction and working principle of DC motor. 10

Q3. A) Derive Torque equation for induction motor and explain Torque- speed characteristics 10

B) Define power system. Explain distribution transformers and its types with neat diagram. 10

Q4 A) Explain inverting and noninverting amplifier using OPAMP. 10

B) Explain construction and working of Triac in detail. 10

Q5 A) Explain Hartley oscillator with neat circuit diagram. Also discuss Barkhausen criteria for sustained Oscillations. 10

B) Explain Full wave controlled rectifier using SCR with output waveforms and RL load. 10

Q6 Write note on (any3) 20

a) Multiplexer and Demultiplexer

b) Tuned oscillator

c) Circuit breaker

d) Efficiency and regulation of transformer

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