SE-sem-IV-old-mech-TE 6/6/16

QP Code :554602

(3 Hours) **[Total Marks : 100**

N.B. (1) Question **No. 1** is **compulsory**
(2) Answer any 4 of the remaining six questions
(3) Figure to be right indicate ull marks.
(4) Assume suitable data if necessary.

1. Solve any four of the following :- **20**
   (a) Define following terms.
      i) Fan in ii) Fan out
      iii) Noise immunity iv) Propagation delay
   (b) Draw all basic gates using NOR gate only.
   (c) Enlist specification of practical Op-amp.
   (d) Compare sequential and combinational logic.
   (e) Compare series and parallel inverter.
2. (a) Draw and explain light dimmer circuit using diac and triac. **10**
   (b) Draw and explain Astable M.V. (multivibrator) using IC-555. **10**
3. (a) What is Chopper? Explain any one chopper circuit in detail. **10**
   (b) Explain with diagram 2-input totem pole logic family. **10**
4. (a) Draw neat block diagram of msp 430 controller and explain it. **10**
   (b) i) Explain substractor using op-amp. **5**
      ii) Difference Ampr **5**
5. (a) Discuss in detail the over voltage protection of D.C. motor. **10**
   (b) Explain in detail rotate and shift instructions set of M.C.-8085 **10**
6. (a) Explain with neat diagram active high pass filter. **10**
   (b) How speed of A.C. motor are controlled by frequency controlled method? Explain **10**
7. Write short notes on the following (Any Four): **20**
   (a) Summing amplifier
   (b) De'morgans theorem
   (c) Encoder and decoder
   (d) V-I Characteristic of SCR
   (e) J-K. Flip - Flop
   (f) Parallel Adder

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