S.E. (Mechanical) (Sem-IV) (CBSGS) (R-201

Marks : 80]

Time : 3Hours   Marks : 80

N.B: (1)Question no.1 is compulsory
    (2)Solve any **three**from remaining questions
    (3)Assume **suitable** data ifnecessary
    (4)**Figures** to the right indicate full mar

1. Solve any four: 20
   (a)Compare ideal and Practical op-amp.
   (b)Explain working principal of GTO and Compare it with SCR..
   (c)Realize derived gates using NAND gate.
   (d)Explain importance of Back EMF in D.C motors.
   (e)Discuss effect RLE load on full wave rectifier operation.

2.(a)Explain working of inverter circuit? Identify it's type and explain any one.   7
  (b)Select motors for medium power pump and conveyor applications   7
  (c)Compare power BJT and Power MOSFET   6

3.(a) Explain single phase full wave fully controlled rectifier circuit supplying a resistive load.   7
  (bExplain with neat Block Diagram architecture of MSP430 microcontroller   7
  (c)Describe in detail Op-amp as a Summing Amplifier.   6

4(a) Give Significance of Inner current loop control circuit.   7
  (b)Explain basic circuit of IC 555.   7
  (c)What is Commutation in SCR and Explain its working principle.   6

5.(a)Explain with detailed circuit daigram any one application circuit of TRIAC-DIAC pair.   7
  (b)Compare with examples combinational and sequential circuits.   7
  (c)Compare Microprocessor and Microcontroller .   6

6.(a)Enlist register related to configuration of digital input/output port of MSP 430
microcontroller.And explain their importance.   7
(b)What is a servomotor? What are the requirements of a good servomotor?   7
(c)What do you understand by a digital circuit? Explain various parameters of logic family.   6

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