1T01434 - S.E.(Mechanical) Engineering)(SEM-IV)(Choice Base Credit Grading System)(R-2020-21)(C Scheme) / 41225 - Industrial Electronics

QP CODE: 10015424   DATE: 19/12/2023

3 Hours   **[Max Marks: 80]**

N.B. : (1) Question No 1 is Compulsory.
         (2) Attempt any three questions out of the remaining five.
         (3) All questions carry equal marks.
         (4) Assume suitable data, if required and state it clearly.

1   Attempt any FOUR   **[20]**

   a   Draw and explain IC 555 as Monostable Multivibrator.

   b   Explain the High pass active filter.

   c   Explain various features of logic family.

   d   Explain commutation and suggest with circuit diagram any natural commutation
       method of SCR.

   e   Compare De multiplexer and Multiplexer.

2 a   Explain an ac to DC controlled converter supplying resistive load. Derive an   **[10]**
       expression for calculating output dc voltage.

   b   Describe instrumentation amplifier with labeled diagram. State its application   **[10]**
       area.

3 a   Explain the necessity of closed loop speed control in DC motor.   **[10]**

   b   Draw Differentiator ,integrator circuit with output voltage equation.   **[10]**

4 a   Explain need of digital to analogue conversion. How the ADC in MSP430   **[10]**
       works?

   b   Explain three phase inverter operation with waveforms.   **[10]**

5 a   Draw and explain important sections of MSP 430 microcontroller.   **[10]**

   b   Compare digital circuits with Analog circuit. List Application of Each of them.   **[10]**

6 a   Describe speed torque characteristics of DC and AC motors.   **[10]**

   b   Compare microprocessor and microcontroller.   **[10]**

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