Wednesday,December 11,2019 02:30 pm - 05:30 pm   1T01424 - S.E (Mechanical Engineering) (SEM-IV)(Choice Base) / 41203 - Industrial Electronics   79672

[3 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 out of remaining three questions.
       3.   Figures to the right indicate full marks.

1.   (a) Draw and explain V-I characteristics of SCR.   **05**

       (b) Draw and explain equivalent circuit of an OP-AMP.   **05**

       (c) State and prove Demorgan's Theorems.   **05**

       (d) Enlist all important features of logic family circuit.   **05**

2.   (a) Draw and explain slip-torque characteristics of AC motor.   **07**

       (b) What is GTO? Explain switching characteristics of GTO.   **07**

       (c) Compare DIAC and TRAIC.   **06**

3.   (a) Draw and explain full controlled rectifier with R load. Draw waveforms.   **07**

       (b) Explain with neat diagram MSP 430 architecture.   **07**

       (c) Draw and explain second order low pars filter.   **06**

4.   (a) Draw circuit diagram and waveforms of single phase full bridge inverter with R load.   **07**

       (b) Compare CMOS logic family with TTL logic family.   **07**

       (c) What is servo speed? Explain working principle of servo motor.   **06**

5.   (a) Derive the relation per voltage gain in inverting mode in operational amplifier and compare   **07**
            it with non inverting mode.

       (b) Draw and explain R triggering method of SCR.   **07**

       (c) Draw and explain astable mode of operation of IC 555.   **06**

6.   (a) Explain the application of piezo-electric activator drive.   **07**

       (b) Compare DC series motor and DC shunt motor.   **07**

       (c) Explain different applications of microcontroller.   **06**

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