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Total No. of Questions :5] *[Total No. of Printed Pages :2*

Roll No .....

EC - 601

B.E. VI Semester

Examination, June 2015

Industrial Electronics

Time : Three Hours

Maximum Marks : 70

Note: i) Answer five questions. In each question part A, B, C is compulsory and D part has internal choice.
ii) All parts of each questions are to be attempted at one place.
iii) All questions carry equal marks, out of which part A and B (Max.50 words) carry 2 marks, part C (Max.100 words) carry 3 marks, part D (Max.400 words) carry 7 marks.
iv) Except numericals, Derivation, Design and Drawing etc.

1. a) Draw the circuit diagram for full wave rectifier.
   b) What is bleeder resistor, explain.
   c) Explain the pi filter, with neat diagram.
   d) Explain in detail about SMPS with suitable block diagram.

   OR

   Compare Linear and switched power supplies.

2. a) Explain principle of operation of SCR.
   b) Write methods of turning off the SCR.
   c) Compare SCR and Transistor.
   d) Enumerate the various mechanisms by which thyristor can be triggered into conduction.

   OR

   For an SCR, the gate-cathode characteristic has a straight line slope of 130. For trigger source voltage of 15v and allowable gate power dissipation of 0.5 watts, compute the gate source resistance.

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3. a) Draw the V-I characteristics for DIAC.
   b) Differentiate between DIAC and TRIAC.
   c) Explain in brief about the characteristics of power diode & power transistors.
   d) Draw the cross sectional view of Triac and discuss the turn on process.

   OR

   Draw the symbol and explain the basic construction structure of N-channel enhancement power MOSFET.

4. a) What is input offset voltage?
   b) Write 4 Ideal characteristics of op-amp.
   c) Draw the circuit diagram of Low pass filter using op-amp and high pass filter.
   d) Describe the working principle of relaxation oscillator using op-amp.

   OR

   Explain principle of working of function generator using op-amp with suitable & neat diagram.

5. a) Draw the block diagram of PLC.
   b) Mention uses of PLCs.
   c) Write down the advantages of PLC over Relay logic controller.
   d) Draw the block diagram for input interface module and discuss each block.

   OR

   Mention the factors which are to be consider while selecting a PLC.

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