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

Roll No .....

CS/IT-304

B.E. III Semester

Examination, June 2016

Electronics Devices and Circuit

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 question 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.

Unit-I

1. a) What is dynamic resistance of FET?
   b) Define pinch-off voltage of FET.
   c) Write a note on MOSFET.
   d) Explain the operation of a N channel MOSFET with the help of its characteristics.

   OR

   Define α and β of a transistor and derive relationship between them.

Unit-II

2. a) Write a note on voltage gain of amplifier.
   b) Write a short note on power amplifier.
   c) How do positive and negative feedback in amplifier differ from each other? Explain.
   d) Show that the maximum conversion efficiency of class B amplifier is 78.5%.

   OR

Explain the working principle of Wien's bridge oscillator circuit.

Unit-III

3. a) Write a note on multivibrator.
   b) What do you mean by a clamper?
   c) Write a note on bistable multivibrator.
   d) Explain the operation of a positive clipper with suitable waveforms.

   OR

   Explain the transfer characteristic of differential amplifier.

Unit-IV

4. a) Write a note on closed loop gain of an Op-Amp.
   b) Explain significance of slew rate of an Op-Amp.
   c) Explain the offset voltage and offset current of an Op-Amp.
   d) Explain log and antilog amplifier circuit using Op-Amp.

   OR

   Explain the integrator using Op-Amp with circuit diagram.

Unit-V

5. a) Write a note on Voltage Regulator.
   b) What is meant by Load Regulation of a power supply?
   c) Explain in brief the working of a series regulated power supply.
   d) With block diagram explain the working of SMPS.

   OR

   With block diagram explain three terminal IC voltage regulator.

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