Roll No .....

EX-304 (New)

B.E. III Semester

Examination, June 2016

Electronic Devices

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.

1. a) What do you mean by Semiconductors? Write some semiconductor devices.
   b) Explain the energy band diagrams of Insulators and Conductors.
   c) Explain the principle of generation and recombination of charges.
   d) Draw and explain VI characteristic curve of pn junction diode in forward and reverse biasing.

   OR

   Explain the Hall effects. Write its applications also.

2. a) Discuss the working principle of diode when it connects with a battery.
   b) Give an introductory note on photo transistor.
   c) Explain clipper and clamper circuits with their classification.
   d) Write short note on Schottky diode, Tunnel diode and Pin diode.

   OR

Draw and explain the clipping circuit at two independent levels.

3. a) Define Transistors. Give its classification in brief.
   b) Is two back to back diodes can be working as transistor? Give reason to support your answer.
   c) Explain the concept of early effect in CB configuration of BJT.
   d) Explain the Eber's moll model. Explain its significances in transistor circuit.

   OR

   Explain UJT in detail. Explain its principle operation and its characteristics.

4. a) Explain the load line and Q point of amplifier circuits.
   b) Derive a relation for the stability factor.
   c) Explain the frequency response of transistor at low frequency.
   d) Discuss the h parameter analysis of CC, CE and CB configurations of transistors at low frequency.

   OR

   Explain the miller capacitance and its effect on voltage gain at high frequency parameters.

5. a) How channel is constructed in FET's? Give its construction features.
   b) Write down the advantages of MOSFET over FET.
   c) Write down the differences between n channel and p channel.
   d) Draw and explain the VI input and output characteristics of depletion MOSFET.

   OR

   Draw and explain the VI input and output characteristics of enhancement MOSFET.

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