Roll No .....

EI/IC-403 (New)

B.E. IV 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.
v) Assume suitable data if any missing.

1. a) Explain Intrinsic and Extrinsic Semiconductor.
   b) What do you mean by drift and diffusion current?
   c) Discuss Hall effect and its applications.
   d) Draw and explain the VI characteristics of a PN junction diode.

   OR

   Derive the expression for transition and diffusion capacitance.

2. a) Explain avalanche breakdown.
   b) Explain PIN diode.
   c) Explain diode as a rectifier.
   d) Discuss Zener Diode and how it is used as a voltage regulator.

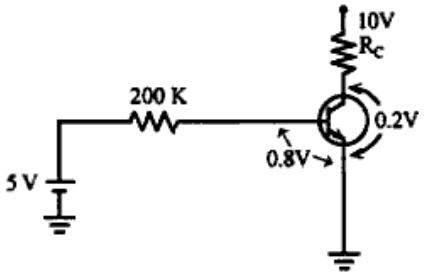
   OR

   Explain two level clipper with example.

3. a) Explain transistor as switch.
   b) Explain current amplification factor.
   c) Compare the three configuration of the transistor in minimum five points.
   d) Explain CB configuration and draw the Input/Output characteristics of CB configuration.

   OR

   A silicon transistors with $V_{BE,\ sat}$ = 0.8 V, h_{fe} = 100, $V_{CE,sat}$ = 0.2 V in the circuit shown. Find the minimum value of R_C for which transistors remains in saturation.



4. a) Explain the DC load line in detail.
   b) Give the name of the techniques used for Bias compensation.
   c) Explain fixed bias circuit in detail.
   d) Explain Transistor as an amplifier in detail.

   OR

   Explain the Diode Compensation Technique.

5. a) Give the difference between BJT and FET. (any three)
   b) Explain Drain, Source and Gate of FET.
   c) Give the relation between r_d, g_m and μ.
   d) Explain the construction and operation of enhancement type MOSFET with diagram.

   OR

   Explain FET as a :
   i) Voltage variable Resistor
   ii) An amplifier

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