Nepal College of Information Technology

**Assessment** Fall 2013

Program : BE (CE) Time : 3 hrs

Semester : III FM : 100

Subject : Electronic Devices & Circuits PM : 45

*Candidates are requested to give their answer as far as practicable in their own words.*

* *The figure in the margin indicates the full marks*
* ***Attempt ALL question***

1. (a) How can you say that diode is a non-linear device? Explain. [8]

(b) Describe the formation of P-N junction semiconductor diode. [7]

2. (a) What is zener diode? Explain how zener diode maintains constant voltage 8 across the load? [8]

(b) Draw and explain the V-I characteristics of a PN junction diode. [7]

3. (a) What is bipolar junction transistor? Why it is so called? Explain the working principle of NPN transistor. [8]

(b) Explain the operation of transistor as an amplifier. [7]

4. (a) Explain the input and output characteristics of the common base configuration. [8]

(b) Compare CB, CE and CC configuration of BJT in terms of input resistance, output resistance, current gain, voltage gain and applications. [7]

5. (a) Explain the output characteristics of common emitter configuration. Show that β = α /1-α. [8]

(b) Discuss the transistor operating regions. [7]

6. (a) Explain V-I characteristics of a zener diode. [8]

(b) Explain the operation of transistor as a switch. [7]

7. Write short notes on: (Any Two) [2\*5]

a. Diode switching time

b. PN junction diode

c. D.C. load line