Nepal College of Information Technology

**Unit Test**

Fall 2013

Program : BE CE Time : 2 hrs

Semester : (III) FM : 70

Subject : Electronic Devices & Circuits PM : 35

* *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 V-I characteristics of a zener diode. 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 characteristics of the common base configuration. 5

(b) Compare CB, CE and CC configuration of BJT in terms of input resistance, output resistance, current gain, voltage gain and applications 5

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

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

a) Diode switching time

b) Transistor operating regions

c) D.C. load line

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