Nepal College of Information Technology

**Unit Test**

Fall 2012

Program : BE CE Time : 2 hrs

Semester : (I) FM : 70

Subject : Basic Electrical Engineering 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) Explain the laws of resistance. How does the resistance of conductor depend upon the change of temperature. 4+4

b) State and explain KVL (Kirchoff’s voltage law). Find RAB by using Delta star conversion technique of the given figure. 3+4

2. a) Find the voltage of point A with respect to B on the given figure. Also detected is it positive with respect to B. 5+2

b) Using Nodal Analysis find the current through 3Ω resistor on the given figure. 8

3. a) Using super position theorem calculate current through AB ie Iab on the given figure.

b) State and prove maximum power transfer theorem. 7

4. a) Calculate the current through 3Ω resistor using Thevenin’s theorem in the figure shown below. 8

b) Calculate the power consumed by 6Ω resistor using Norton’s theorem in the figure given below. 7

5. Write short notes on (Any two) 5\*2=10

a) Time constant on RL circuit.

b) B-H curve

c) Temperature coefficient of resistor.