Nepal College of Information Technology

**Unit Test**

Fall 2012

Program : BE ELX\_IT\_Day 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) Find out the equivalent resistance between a and b. [7]



b) Find the current I in the circuit below. [8]



2. a) Determine I in the circuit below. [7]



b) Determine the value of R, if the power dissipated in 10 Ω resistor is 40 W for the circuit below. [8]



3. a) Using superposition theorem, find the current I in the circuit below. [7]



b) Calculate the current through 4 Ω resistor using loop current method. [8]



4. a) Find the average value, effective value, form factor and peak factor of the output voltage wave shown below. [7]



b) Find current through 2 Ω resistor using Norton’s Theorem. [8]



5. Write short notes on: (*any two*) [5\*2]

a. Kirchhoff’s Law

b. Maximum Power Transfer Theorem

c. Ideal and Practical voltage source