Sessionals

USN | | | | | | | | | | |

NMAM INSTITUTE OF TECHNOLOGY, NITTE

(An Autonomous Institution affiliated to VTU, Belgaum)

I Sem B.E. (Credit System) Mid Semester Examinations – I, September 2014

Duration: 1 Hour

14EE105 – BASIC ELECTRICAL ENGINEERING

Max. Marks: 20

*Note: Answer any **One** full question from **each Unit.***

Unit – I

1. a) With an example explain Kirchoff's Laws. 4

   b) The two coils A and B placed in a parallel plane having inductances 6H and 0.06H respectively with a coefficient of coupling K=0.9. Find the emf induced in both coils when the current in coil A increases at the rate of 100A/Second. 6

2. a) Find the equivalent resistance between terminals A and B of the circuit shown in Fig. 2(a).

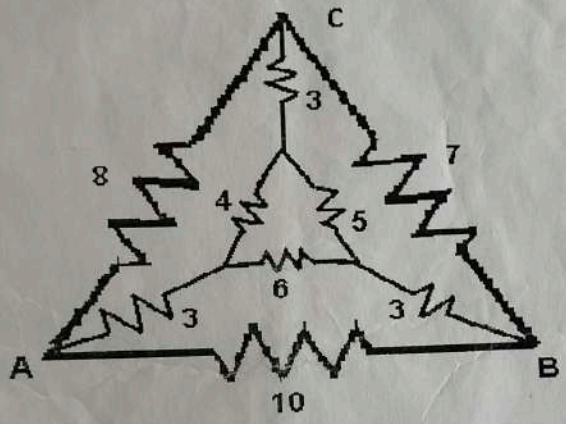

Fig. 2(a) 6

   b) State and Illustrate Faraday's Laws of electromagnetic Induction and lenz's law. 4

Unit – II

3. a) Prove that power consumed by a pure inductance is zero 4

   b) A coil having a resistance of 10 Ω and an inductance of 35mH is connected to 230V, 50Hz supply. Calculate (i) the circuit current (ii) phase angle (iii) power factor (iv) power consumed. Draw phasor diagram. 6

4. a) State the definition of RMS value, Average value, Form factor, Peak Factor. 4

   b) A series circuit having pure resistance of 40 Ω, pure inductance of 50.07mH and a capacitor connected across 400V,50Hz ,AC supply. This R,L,C combination draws a current of 10A .Calculate i)Capacitance value ii)Power factor.

****