Exam.Code:0906
Sub. Code: 33306

2015

B.E. (Electrical and Electronics Engineering)

Second Semester

EEEC-201: Basic Electrical Engineering

Time allowed: 3 Hours Max. Marks: 50

NOTE: Attempt five questions in all, including Question No. I which is compulsory and selecting two questions from each Unit.

x-x-x

I. Answer the following:-

a) Give the relation between phase and line values of voltage and current for star connection.

b) What is the working principle of d.c. motor?

c) Explain the working principle of Norton theorem.

d) What are the different types of losses in a transformers?

e) Draw single line diagram of distribution network. (5x2)

UNIT - I

II. a) With respect to D.C. circuit, state and explain Kirchhoff's law.

b) A sinusoidally varying alternating voltage is given by $v(t) = V_m \sin \omega t$, obtain its RMS value of voltage in terms of maximum value. (2x5)

III. What currents flow in a single-phase stare connected motor? Draw its circuit diagram with its phasor representation? What is power factor in RLC series circuit at leading, lagging and resonance conditions? (10)

IV. Show that two Wattmeters are sufficient to measure three-phase power. Three similar coils each having R = 10Ω, and X = 8Ω are connected in star across 400V, 3-phase supply. Determine line current, total power and reading of each wattmeter connected to measure power. (10)

P.T.O.

UNIT - II

V. Give the classification of transformers on the basis of voltage ratio, construction and application. Derive the emf equation of a single-phase transformer from basic rules. (10)

VI. a) A dc motor running at a speed of N rpm, obtain an expression for emf induced in the armature winding.

b) With the help of neat diagram, explain the constructional details of tree-phase induction motor. (2x5)

VII. a) Prove that hysteresis loss in a magnetic material is equal to area of hysteresis loop.

b) Define the terms mmf, magnetic flux and magnetic reluctance and establish the relation which holds between these quantities for a magnetic circuit. (2x5)

x-x-x