[Total No. of Questions - 9] [Total No. of Printed Pages - 3]
(2068)

18009(J)

B. Tech 1st Semester Examination

Principles of Electrical Engineering (CBS)

EE-101

Time : 3 Hours **Max. Marks : 60**

The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.

Note : Attempt five questions selecting one question from each of the section A, B, C and D. Question no. 9 in section E is compulsory.

SECTION - A

1. (a) Explain Sources of energy in detail. (6)

   (b) State Norton theorem and explain the steps involved in the theorem in detail. (6)

2. (a) What is power system? Explain the functions of its elements with the help of a general layout. (6)

   (b) Explain Kirchoff's laws in detail, can we apply these laws to A.C. Circuit? (6)

SECTION - B

3. (a) What are the advantages and disadvantages of three phase system over single phase system? (6)

   (b) Derive the relationship between iine current and phase current in a 3-Phase delta connected balanced load. (6)

4. (a) Define and explain apparent power, real power and reactive power as applied to A.C Circuits. (6)

   (b) Explain power factor. Disadvantage of low power factor. Causes of low power factor. (6)

SECTION - C

5. (a) Explain the working principal of dynamometer type wattmeter. (6)

   (b) Derive the torque equation for permanent magnet moving coil instrument. (6)

6. (a) Make Comparison between magnetic and electric circuit. (6)

   (b) Explain the magneto motive force, flux and reluctance. Derive a relation between them. (6)

SECTION - D

7. (a) Explain the working principle and construction of transformer. (6)

   (b) What information can be obtained from open circuit test of a transformer? How can you get these information's? (6)

8. (a) Explain the Working principle and construction of D.C. motor. (6)

   (b) Explain the construction and working of a single phase capacitor start capacitor run induction motor. (6)

SECTION - E

9. (a) What do you mean by dependent sources?

   (b) Define Q. factor for the series resonant circuit.

   (c) Why starter is necessary for starting a D.C motor?

(d) A shunt is usually employed with an ammeter why?

(e) The rotor of an induction motor is skewed why?

(f) Define the terms, apparent power, reactive power and active power.

(g) Define ohm's law.

(h) Define Resonance.

(i) Define rms value.

(j) Define Reciprocity Theorem.

(k) Define form factor.

(l) Define bandwidth of a resonant R.L.C Circuit.

(12×1=12)