Code: R7100506

R07

B.Tech I Year (R07) Supplementary Examinations, June 2013
BASIC ELECTRICAL ENGINEERING
(Common to CSE, IT and CSS)

Time: 3 hours

Max Marks: 80

Answer any FIVE questions
All questions carry equal marks

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1. (a) State and explain Faradays laws of electromagnetic induction.
    (b) Explain basic circuit components in detail.

2. (a) Write short notes on star to delta transformation.
    (b) State and explain superposition theorem.

3. (a) Define and explain self and mutual inductances.
    (b) Explain the magnetization characteristics of ferromagnetic materials.

4. (a) Define and explain:
    (i) Average value.
    (ii) Root mean square value.
    (iii) Form factor.
    (iv) Peak factor.
    (b) Derive the expression for power dissipated by a pure resistor excited by a sinusoidal voltage source.

5. (a) Explain the principle of operation of transformers.
    (b) Explain the significance and procedure of O.C and S.C. tests on transformers with neat circuit diagram.

6. (a) Derive emf equation of DC generators.
    (b) Explain the types of armature windings in detail.

7. Explain the principle and operation of synchronous motors.

8. (a) Explain the principles and operation of permanent magnet moving coil instruments with neat diagram.
    (b) What are the essential features of measuring instruments?

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