Code No: R21013 **R10** SET - 1

II B. Tech I Semester Supplementary Examinations, Dec - 2015
ELECTRICAL AND ELECTRONICS ENGINEERING
(Com. to CE, ME, CHEM, PE, AME, MM)

Time: 3 hours Max. Marks: 75

Answer any **FIVE** Questions
All Questions carry **Equal** Marks
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1. a) State and explain Kirchhoff's current law with an example. (8M)
   b) An incandescent light bulb rated at 100 W dissipates 100 W as heat and light when connected across a 230 V ideal voltage source. If four such bulbs are connected in series across the same source, determine the power each bulb will dissipate. (7M)

2. a) Explain about the principle of operation of a DC Motor. (7M)
   b) Explain the working of a three point starter with a neat diagram. (8M)

3. a) Derive the emf equation of a single phase transformer. (8M)
   b) A 220 V , 3 kVA single phase transformer has an iron loss of 120 W at 40 Hz and 80 W at 30 Hz. Find the hysteresis and eddy current losses at 50 Hz. (7M)

4. a) List the advantages and disadvantages of an Induction motor. (7M)
   b) Explain how the regulation can be obtained by a synchronous impedance method for an alternator. (8M)

5. a) List the important parameters on which the diodes are specified. (7M)
   b) Explain the operation of a full wave rectifier with a neat diagram and output waveforms. (8M)

6. a) Draw and explain the characteristics of an SCR. Also list their applications. (8M)
   b) Explain the necessity of feedback Amplifiers. (7M)

7. a) Explain the differences between core Induction furnace and Coreless Induction furnace. (8M)
   b) List the advantages of Dielectric Heating over other heating methods. (7M)

8. a) Explain the operation of LVDT with a neat diagram. (8M)
   b) Explain about time base Generator in CRO. (7M)
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