S.B. Roll No.....

**BASIC ELECT. ENGG.**

**2ND Exam/ECE/ETV/ECEII/COMP/CSE/IT/EEE/0064/MAY'17**

**Duration: 3Hrs** **M. Marks: 75**

**SECTION A**

**Q1. Fill in the blanks:** **10x1.5=15**

a. Ohms law will hold good if the _____ remain constant.
b. If 125V is applied across a 250V, 100w bulb, the power consumption will be _____.
c. Kirchhoff's current law (KCL) is applicable to_____.
d. An ideal current source has _____ internal resistance.
e. The unit of self inductance is_____.
f. For battery charging _____ supply is required.
g. Peak factor is defined as the ratio of _____ and_____.
h. The power consumed in pure capacitive circuit is_____.
i. To improve p.f. of a circuit, a capacitor is connected in_____ to the load.
j. Sun is a _____ source of energy.

**SECTION B**

**Q2: Attempt any five questions.** **5x6=30**

i. State and explain Kirchhoff's current law.
ii. State and explain Thevenin's theorem with help of neat diagram.
iii. What is constant current source and draw characteristics of an ideal current source.
iv. State and explain Faraday's laws of electromagnetic induction?
v. Discuss about primary and secondary cells?
vi. Compare A.C. and D.C.
vii. What are the causes and disadvantages of poor power factor?
viii. Mention six important advantages of electrical energy.

**SECTION-C**

**Attempt any three questions.** **3x10=30**

**Q3.** Mention the similarities and dissimilarities of electric and magnetic circuits.

**Q4.** What are the various precautions to be observed for obtaining longer life and better efficiency of lead acid battery.

**Q5.**Define instantaneous value, maximum value, average value and effective value of an alternating quantity.

**OR**

Find the impedance, current and power factor of the following series circuits and draw the corresponding phasor diagram: (i) R and L (ii) R and C
In each case the applied voltage is 100 volts, the frequency is 50 Hz, R=40Ω, L=0.1H,C=20μf.

**Q.6.**Explain the major components of a nuclear power station and draw there on block diagram.