

S.B. Roll No.....

BASIC ELECTRICAL ENGINEERING
2nd Exam/ECE/ETV/ECE-II/Comp/CSE/IT/EEE/0064/Nov'18

Duration: 3Hrs.

M.Marks:75

SECTION-A

Q1. Fill in the blanks.

15x1=15

- a. In nuclear power generation _____ is main component/part.
- b. The S.I. unit of susceptance is _____
- c. An ideal current source has _____ internal resistance.
- d. _____ converts mechanical energy into electrical energy.
- e. Kirchhoff's voltage law is applied to _____ circuit.
- f. In an ac circuit, the reciprocal of impedance is called _____
- g. The power drawn by pure inductance is _____
- h. In a lead acid battery positive plates are made of _____
- i. The electrical rating of an appliance is given in _____
- j. The commercial unit of electrical energy is _____
- k. _____ Network contains one or more than one source of emf.
- l. The emf induced in a coil due to change of current in the neighboring coil is called _____
- m. Reluctance in magnetic circuit corresponds to _____ in electric circuit.
- n. Frequency of D.C voltage is _____
- o. Capacity of battery is measured in _____

SECTION-B

Q2. Attempt any five questions.

5x6=30

- i. Give comparison between electric and magnetic circuits..
- ii. Draw and explain phasor diagram for the R-L series circuit..
- iii. What is constant current source and draw characteristics of ideal current source?
- iv. A resistor of 100 ohm is connected in series with a 56 micro - farad capacitor to a supply at 230V, 50Hz. Find the impedance, the current, the phase angle, the pf and the voltage across resistor and capacitor.
- v. State Faraday' laws of electromagnetic induction.
- vi. Estimate the inductance of a solenoid of 2500 turns wound uniformly over a length of 0.5 meter on a cylindrical paper tube 4 cm in diameter. The medium is air.
- vii. Define the following.
a) Form factor b) Q- factor c) True power

SECTION-C

Q3. Attempt any three questions.

3x10=30

- a. Explain with neat sketch, how electricity can be generated from coal in a thermal power stations.
- b. State and explain Norton's theorem. Show that the theorem is just the converse of Thevenin's theorem.
- c. Draw and explain the construction of lead acid battery in detail and its applications.
- d. Explain R-C series circuit with the help of phasor diagram in detail.
- e. Write a short note on the following. **(any two)**
 - i. Series resonance.
 - ii. Kirchhoff's laws.
 - iii. Chassis and ground.