S.B. Roll. No...

BASIC ELECTRICAL ENGINEERING
2nd Exam/ECE/Mechatronic/0961/Jun'2022
(For 2018 Batch Onwards)

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

SECTION-A

Q1. Fill in the blanks.   **15x1=15**
   a. The commercial unit of electrical energy is_____
   b. A/to KCL, at any junction of electric network, sum of _____currents =sum of an outgoing currents.
   c. For battery charging _____supply is required
   d. Weber is the unit of_____
   e. The resistance of conductor _____with the decrease of its diameter
   f. The device that converts chemical energy into electrical energy is called_____
   g. The property of a coil due to which it opposes the change of current in the neighboring coil is called _____
   h. One half cycle of an alternating g is called_____
   i. An ideal voltage source should have_____
   j. In an ac circuit, an ammeter measures _____value of current.
   k. Secondary cells _____be charged
   l. Power factor of a pure inductive circuit_____
   m. Fuel used in nuclear power station is_____
   n. A network which contains one or more source of emf is known as_____
   o. Hydro electric power plant is located in _____areas

SECTION-B

Q2. Attempt any six questions.   **6x5=30**
   i. Explain at least six applications of Electricity.
   ii. State & Explain Faradays laws of Electromagnetic Induction
   iii. State & Explain Kirchhoff's Second Law.
   iv. Differentiate between constant voltage source & constant current source
   v. Mention the applications of Lead Acid Batteries.
   vi. State & Explain Form factor & Peak factor for AC Voltage
   vii. State the five factors in choosing a site for Hydro Power plant
   viii. Prove that the power consumed in a pure capacitive circuit is zero

SECTION-C

Q3. Attempt any three questions.   **3x10=30**
   a. State & Explain Thevenin's theorem.
   b. Explain the major components of nuclear power station and draw these on block diagram
   c. Define Power factor. What are the disadvantages of low power factor & also explain method for power factor improvement.
   d. Explain the construction & working of Lead acid batteries.
   e. Explain at least ten similarities between electrical & magnetic circuit