ELEMENTS OF ELECTRICAL & ELECTRONICS ENGINEERING
3rd Exam/Mech./Auto/0193/Dec'22
(For 2018 Batch Onwards)

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

SECTION-A

Q1. Fill in the blanks.   **15x1=15**

  a. The Power factor is the ratio of_____
  b. Kwh is unit of_____
  c. Frequency of D.C. voltage is_____
  d. Transformer is a _____electric machine.
  e. The unit of self inductance is_____
  f. The polarity of diode terminals can be checked by_____
  g. The power factor of a pure inductive circuit is_____
  h. The basic purpose of earthing is to_____
  i. All domestic appliances are connected in _____to the supply
  j. Peak factor is defined as the ratio of _____and _____
  k. A fuse is a _____device
  l. The SCR or thyristor is a ____junction device
  m. In an ac circuit, an ammeter measures _____value of current.
  n. In the wiring system just after energy meter _____is installed.
  o. For the same size, the rating of three phase motor will be _____than single phase motor.

SECTION-B

Q2. Attempt any six questions.   **6x5=30**

  i.   Explain at least six advantages of Electricity.
  ii. State & Explain Lenz's law
  iii. State & Explain RMS value & Average value for AC Voltage
  iv. What is transformer also explain working of a transformer?
  v.   What are advantages of single phase system over three phase system?
  vi. What are the causes of electric fire?
  vii. Explain the characteristics of zener diode.
  viii. A 3-phase induction motor is wound for 4 poles and is supplied from a 50 Hz system. Calculate
        a) Synchronous speed   b) actual speed of motor when running at 4% slip.

SECTION-C

Q3. Attempt any three questions.   **3x10=30**

  a. Prove that the power consumed in a pure capacitive circuit is zero
  b. Define terms mmf, flux density, reluctance, magnetic intensity, permeability.
  c. What is power factor? What are the disadvantages of low power factor? How can we improve power factor?
  d. Discuss the following with suitable diagram
      i) Basic structure of thyristor   ii) Volt ampere characteristics of thyristor
  e. What is the difference between AC & DC?
  f. What are the steps for the treatment of electric shock?