

2063
B.E. (Electrical and Electronics Engineering)
Second Semester
EEEC-201: Basic Electrical Engineering

Time allowed: 3 Hours

Max. Marks: 50

NOTE: Attempt five questions in all, including Question No. I which is compulsory and selecting two questions from each Unit

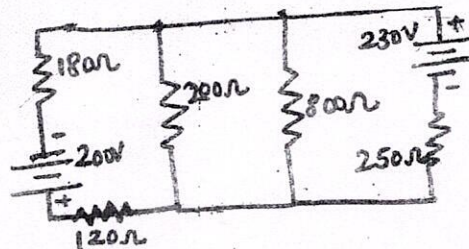
x-x-x

I. Attempt the following:-

- Define RMS value of alternating current.
- State Faraday's law of electromagnetic induction.
- Explain the principle of D.C. generator.
- Discuss the transformer EMF equation.
- Differentiate between conventional and non-conventional sources of energy. (5x2)

UNIT - I

II. Using superposition theorem, determine the potential differences across 120Ω resistor in the network shown. Also state and explain maximum power transfer theorem.



(10)

III. a) What do you understand by real power, reactive power and apparent power?

Discuss the practical importance of power factors.

b) A voltage $e = 200 \sin 100\pi t$ is applied to a coil having $R = 200 \Omega$ and $L = 638\text{mH}$,

Find the expression for the current and also determine the power taken by the coil.

(2x5)

IV. What are the advantages of 3-phase system over 1-phase system? Describe the basic features of a balanced 3-phase system. Also develop an expression for total power in a balanced 3-phase load. (10)

P.T.O.

(2)

UNIT - II

- V. a) Explain the working principle of a transformer.
b) Draw a neat phaser diagram showing the performance of a transformer on-load and on no-load. (2x5)
- VI. a) Explain the principle of action of a d.c. generator. Describe briefly its important parts.
b) Explain the difference between squirrel cage and slip-ring induction motor. Clearly explain with the help of their sketches. (2x5)
- VII. a) Explain hysteresis loss. What do you mean by hysteresis, residual magnetism and coersive force?
b) Draw single line diagram of power transmission network and distribution network. (2x5)

x-x-x