

BEET-101

1123

Odd Semester Examination 2018-19

B.TECH. (CSE) (SEMESTER-I)

BASIC ELECTRICAL ENGINEERING

Time: 03:00 Hours

Max Marks : 100

Note : Attempt ALL questions.

Q1. Attempt any four:

(4×5=20)

- State and explain Kirchoff's current and voltage law.
- Distinguished the similarities and dissimilarities between magnetic and electric circuit.
- What are the causes and disadvantages of low power factor?
- Differentiate between ideal transformer and practical transformer.
- Explain the working of three phase induction motor.
- Write short notes on MCB and ELCB.

Q2. Attempt any four:

(4×5=20)

- Write short notes on DC-DC buck converters.
- Define the terms (i) average value (ii) r.m.s value.
- Give the relationship of line and phase values of voltage and current in three phase star connections using phasor
- Draw and explain torque-speed characteristic of separately excited dc motor.
- Give the comparison of induction motor with synchronous motor.
- What are the advantages & Disadvantages of lead acid batteries?

BEET-101/1900

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Q3. Attempt any two:

(2×10=20)

- a. State and explain Norton's theorem with a suitable example.
- b. A coil of resistance 50 Ω and inductance 318 mH is connected in parallel with a circuit consisting of a 75 Ω resistor in series with a 159 μF capacitor. The circuit is connected to a 230 V, 50 Hz supply. Determine the supply current and circuit power factor.
- c. Discuss the series resonance in a series RLC circuit, & draw the curve of resistance & inductance with respect to frequency.

Q4. Attempt any two:

(2×10=20)

- a. The efficiency of a 400 kV, single phase transformer is 98.77% when delivering full load at 0.8 p.f. lagging and 99.13% at half full load at unity p.f. calculate (i) iron loss and (ii) full-load copper loss.
- b. Three coils, each having a resistance of 20 Ω and an inductive reactance of 15 Ω , are connected in star to a 400 V, 3-phase, 50 Hz supply. Calculate (i) the line current (ii) power factor and (iii) power supplied.
- c. Draw and explain the torque-speed characteristic of a three phase induction motor.

Q5. Attempt any two:

(2×10=20)

- a. Explain the working of Single-phase voltage source inverters
- b. Explain different Types of Wires and Cables.
- c. Explain the magnetization characteristics of a separately excited DC generator.

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