

Code No: 152AP

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B.Tech I Year II Semester Examinations, November/December - 2020

BASIC ELECTRICAL ENGINEERING

(Common to EEE, CSE, IT)

Time: 2 hours

Max. Marks: 75

Answer any five questions
All questions carry equal marks

- 1.a) Obtain the first order response of RL circuit with DC excitation of voltage V.
b) Calculate current in $2\ \Omega$ resistor as shown in the figure 1. [7+8]

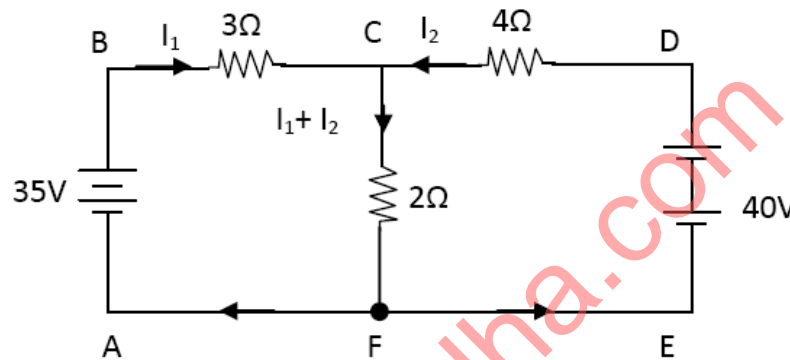


Figure: 1

2. Using Thevenin's theorem calculate the current I through the resistance connected between the terminal A and B as shown in following figure 2 (All resistances are in ohms). [15]

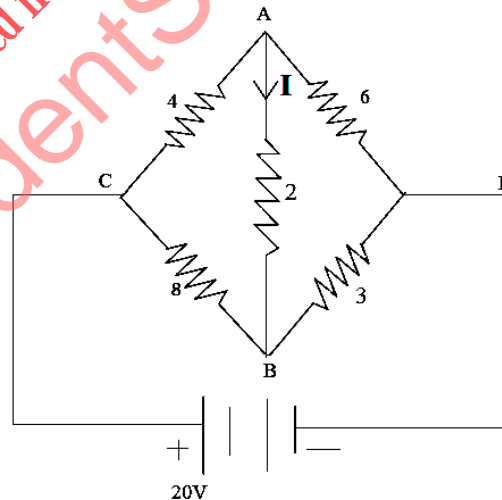


Figure: 2

3. A coil of resistance 10 ohms, inductive reactance of 20 ohms is connected in series with a capacitive reactance of 25 ohms across a 230 V, 50 Hz supply. Determine the following:
a) Inductance and capacitance of the circuit
b) Total impedance of the circuit
c) Current
d) Power factor and power consumed
e) Draw the phasor diagram. [3+3+3+3+3]

4. Derive the relation between line and phase quantities of voltages and currents for a delta connected system? [15]
5. Explain the working principle of a single phase transformer. [15]
6. Obtain the equivalent circuit of a 1- ϕ transformer. [15]
7. Explain the construction and working principle of 3-Phase induction motor with necessary diagrams. [15]
8. Describe the types of cables with necessary diagrams. [15]

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