



# VIT

Vellore Institute of Technology  
(Deemed to be University under section 3 of UGC Act, 1956)

Vellore – 632014, Tamil Nadu, India  
SCHOOL OF ELECTRONICS ENGINEERING  
FALL SEMESTER 2024-2025

SLOT:A1+TA1

CAT-1

Programme: B Tech	Branch: ECE	Course code: BEEE102L
Course Name: Basic Electrical and Electronics Engineering		Date: 25/08/2024
Class Nbr: 8645, 6516, 6521, 6515, 6506	Max Marks: 50	Duration: 90 mins
Faculty name(s): Dr. Kathirvelan J, Dr Somasundaram D, Dr Sagar. Dr Vaegae Naveen kumar, Dr V Velmurugan		

**General instruction(s): Answer ALL**

- | Q. No | Question  | Marks |
|-------|---|-------|
| 1.    | Using nodal analysis method, find $v_o$ in the circuit shown in Figure.1. |       |

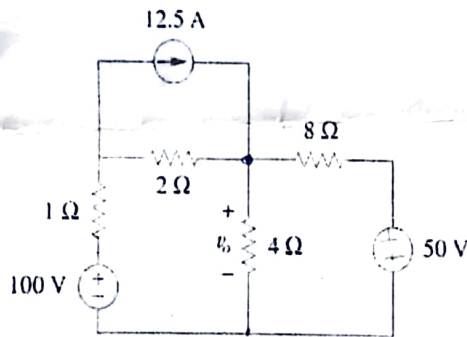


Figure 1

2. Obtain Thevenin's equivalent of the circuit across terminals a and b in given figure 2. Also find current  $i_x$ .

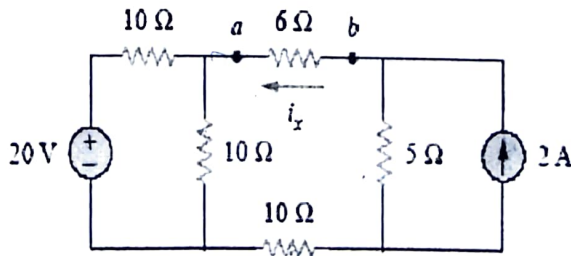


Figure 2

3. Determine the voltage across the 35 Ohms resistor of the circuit shown in figure 3.

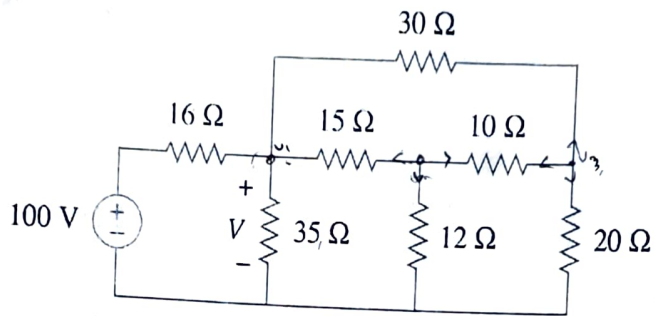


Figure 3

4. Determine  $v_o$  in the circuit shown in figure 4.

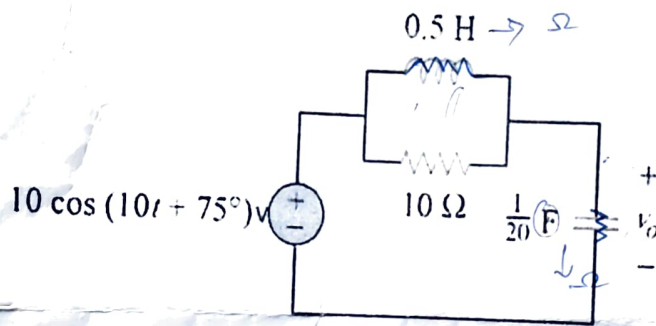


Figure 4

5. In the circuit of Figure 5,  $Z_1 = 60 \angle -30^\circ$ ,  $Z_2 = 40 \angle 45^\circ$ . Calculate the total: (a) apparent power, (b) real power.

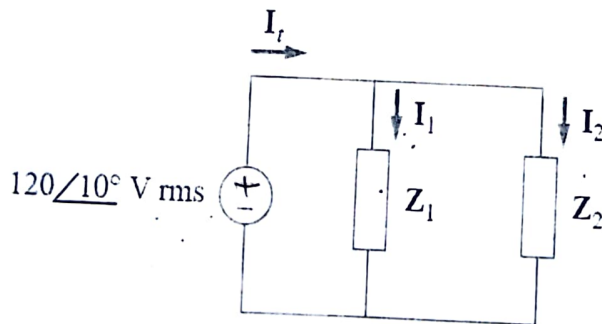


Figure 5

$I = 5.12$