VIT
Vellore Institute of Technology

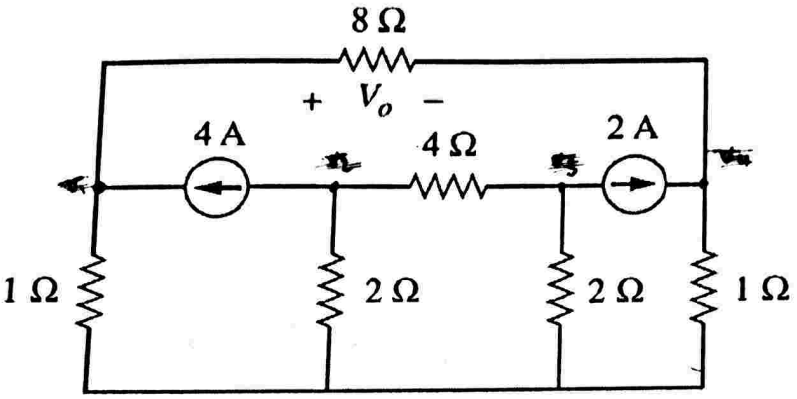
Final Assessment Test- Jan/Feb 2023

Course: BEEE102L - Basic Electrical and Electronics Engineering
Class NBR(s):7502 Slot: C2+TC2
Time: Three Hours Max. Marks: 100

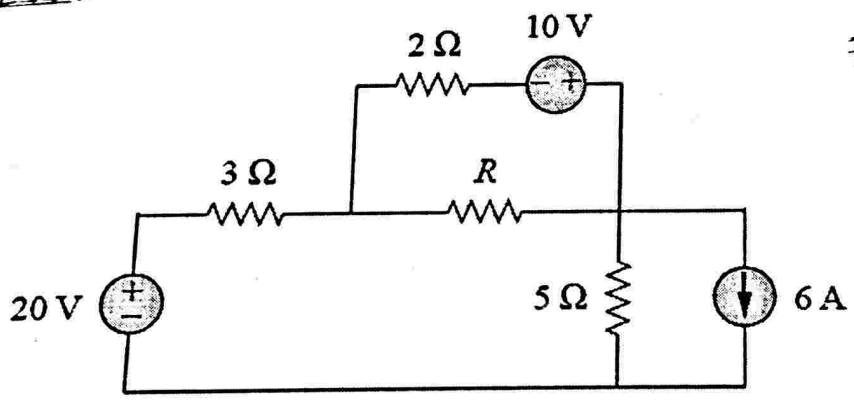
KEEPING MOBILE PHONE/SMART WATCH, EVEN IN 'OFF' POSITION, IS TREATED AS EXAM MALPRACTICE

Answer ALL Questions
(10 X 10 = 100 Marks)

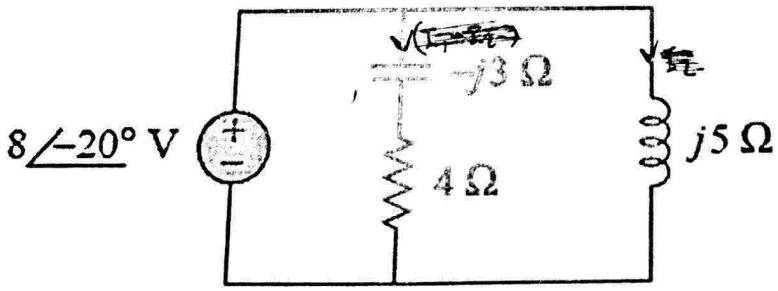
1. *Using nodal analysis, find V_0 in the below circuit.*



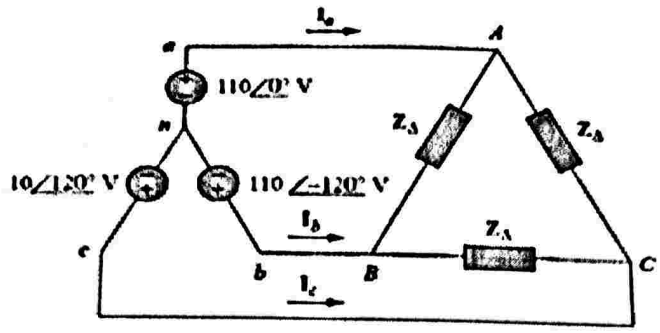
2. *Find the maximum power that can be delivered to the resistor R in the below circuit and calculate that power.*



3. *Find the complex power absorbed by each of the element in the below circuit.*

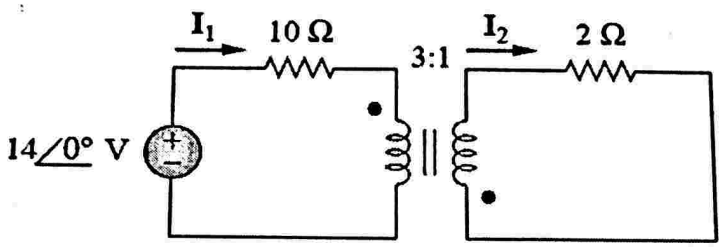


4. Determine the line current and apparent power in the below circuit.



$Z_\Delta = 60\angle 45°\ \Omega$.

5. Determine I_1 and I_2 in the transformer circuit.



6. With neat diagram explain the principle and construction of DC Generator.

7. Write the significance of back e.m.f., voltage equation, and the condition for maximum power in DC Motor.

8. Explain briefly the common emitter configuration of BJT. Draw the input and output characteristics and identify the different regions of operation with applications.

9. Draw and explain the VI characteristics of PN junction diode. Write the difference between the zener break down and avalanche break down.

10. Simplify the following expression using K-Map and draw the AND-OR gate implementation.

$$A\bar{C} + \bar{B}D + \bar{A}CD + ABCD$$

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