

SUBJECT : ELECTRONICS
Paper - I
(Circuit Analysis)

Time : 3 Hours

Max Marks : 80

PART - A (8x4 = 32 Marks)
(Short Answer Type)

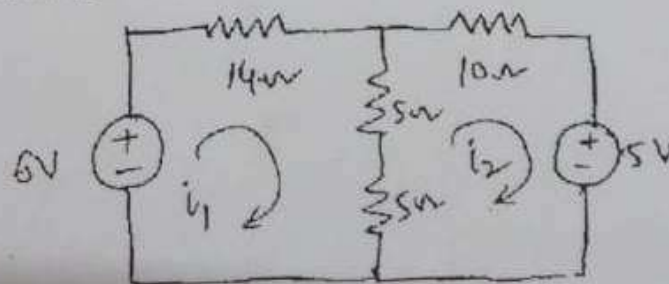
Note : All the following Eight question.

1. An alternating current is represented by $I(t) = 220 \sin(400t - 30^\circ)$ then determine (a) frequency (b) Time period (c) Peak Value (d) rms Value
2. Define KCL and KVL with suitable examples.
3. Define Capacitive reactance and Inductive reactance.
4. State Reciprocity theorem and explain.
5. Find the load resistance and current for maximum power transfer from a source of 100Volts dc having internal resistance of 50Ω .
6. State Millman's theorem.
7. Define time constant of LR and RC Circuits.
8. Explain Passive differentiating circuit with circuit diagram.
9. Define time constant for RC and RL Circuits.
10. What is Quality factor? Obtain expression for quality factor of RLC series Circuit
11. Explain the measurement of phase using CRO.
12. Mention application of CRO.

PART - B (4 x 12 = 48 Marks)
(Essay Answer Type)

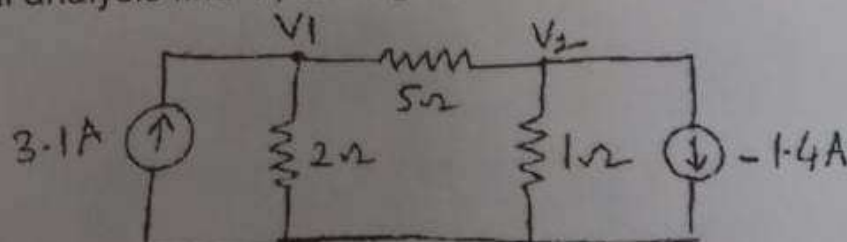
Note : All the following three question.

13 a. Determine V_1 and i_2 in the Circuit.



OR

b. Using Nodal analysis find V_1 and V_2 in the circuit.



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14. a. State and prove Thevenins theorem

OR

b. State and prove superposition theorem. Give its significance.

15. a. Discuss the transient response of RL Circuit with relevant figures.

OR

b. Explain lowpass filter and passive integrating circuit.

16. a. Draw RLC parallel circuit obtain impedance at resonance and also an expression for resonating frequency.

OR

b. What is meant by deflection sensitivity. Draw the block diagram of CRO. Explain each block in detail.

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