Reg. No. _____

Karunya University

End Semester Examination – November/December 2011

Subject Title :   ELECTRIC CIRCUIT ANALYSIS   Time : 3 hours
Subject Code: EE201   **Maximum Marks: 100**

### Answer ALL questions
PART – A (10 x 1 = 10 MARKS)

1. State Kirchoff's current law.
2. What is known as excitation?
3. Define Q factor.
4. Define Resonance.
5. What is known as coefficient of coupling?
6. What is known as steady state?
7. Define Active power.
8. Mention the time constant of RC network.
9. State Reciprocity theorem.
10. What is damping coefficient?

PART – B (5 x 3 = 15 MARKS)

11. A 5 ohm resistor has a voltage rating of 100V. What is its power rating?
12. State Thevenin's Theorem.
13. What is the difference between balanced and unbalanced circuits?
14. What is meant by an ideal transformer?
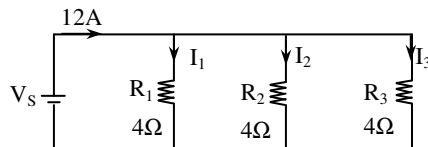15. Differentiate between free response and forced response.

PART – C (5 x 15 = 75 MARKS)

16. a.   Explain voltage and current division rules.   (5)
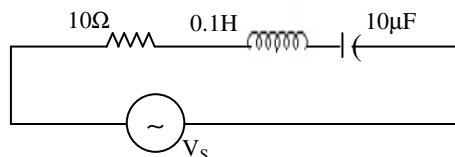   b.   Determine the current through resistance R_3 in the circuit shown in figure.   (10)
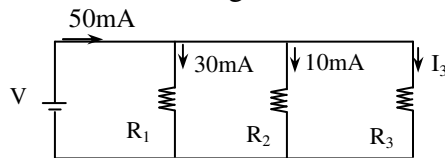
(OR)

17. Determine the current through each resistor in the circuit show in figure.

18. For the circuit shown in figure, determine the impedance at resonant frequency, 10Hz above resonant frequency, and 10Hz below resonant frequency.
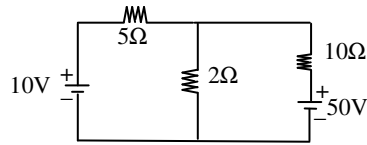

                                                                                                                        [P.T.O]
(OR)

19. Calculate the total power input and readings of the two wattmeters connected to measure power in a three-phase balanced load, if the reactive power input is 15 kVAR, and the load is 0.8.
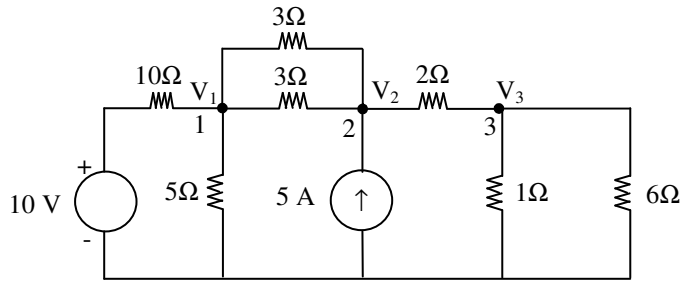
20. a. State and explain dot rule with an example. (5)
    b. Write the mesh current equations in the circuit shown in figure, and determine the current. (10)
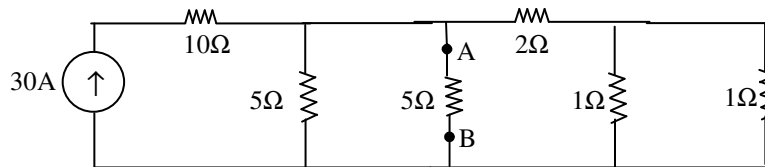

(OR)

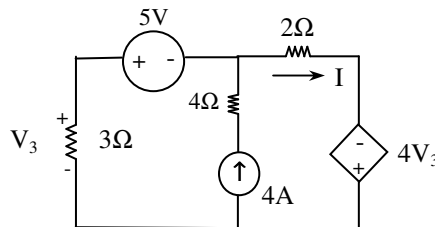21. Determine the voltage at each node for the circuit shown in figure.

22. a. State and explain Norton's theorem. (5)
    b. Determine the current flowing through the 5Ω resistor in the circuit shown in figure, by using Norton's theorem. (10)

(OR)

23. Determine the current through the 2Ω resistor as shown in the figure, by using superposition theorem.

24. Derive the expressions for current through RL and RC circuit for applied step input.

(OR)

25. In the circuit of figure, determine the impedance, current and power factor.