BHARATI VIDYAPEETH INSTITUTE OF TECHNOLOGY

QUESTION BANK

Unit Test-I (Shift:-I & II)

Program: - EJ

Semester: - III **Course: Electronic Circuit and Network (22330)**

Unit 1 Single Phase A.C.Circuits (14 M)

Question for 2 Marks

1) Define power factor. How will you decide its nature in a series R-L-C circuit?
2) If A=4+j7, B=8+j9, C=5-j6 then calculate:
   i) A+B/C ii) A*B/C iii)A+B/B+C iv)B-C/A
3) An alternating current given by equation i = 142.14 Sin 628 t. Find
   i) RMS value ii) Average Value iii) Frequency
4) Define power factor in 3 different ways .and give its significance.
5) Draw only the circuit diagram and phasor diagram of i)R-L series circuit ii)R-C series circuit iii)R-L-C series circuit
6) Draw only the circuit diagram and phasor diagram of i)R-L parallel circuit ii)R-C parallel circuit iii)R-L series combination with parallel capacitor circuit.
7) Define Admittance, Conductance and Susceptance.

Question for 4 Marks

8) A coil having a resistance of 10 Ω and inductance of 0.2 H is connected to 100 V, 50 Hz supply. Calculate i) Impedance of the coil ii) Current taken iii) Reactance of the coil iv) Phase difference between current and applied voltage.
9) Draw a power triangle for in R-L load. Define active power, reactive power and apparent power in A.C. Circuits
10) A Series R-L-C circuit has R=25 Ω ,L=25mH and C=25 μF. Find Inductive and Capacitive reactance, Impedance, Current, Power factor of the circuit. Across 230V, 50 Hz supply. Also comment on the nature of circuit. Draw phasor diagram.
11) For RC circuit i) Draw the circuit diagram ii) write the voltage & current equations. iii) Draw the vector diagram. iv) Draw the impedance triangle.
12) A coil of resistance 10 Ω and inductance 0.1 H is connected in series with a capacitor of 150 μF across 200 V, 50 Hz supply. Calculate
    i)Inductive reactance iii) Capacitive reactance
    ii)Impedance iv) Current

13) Explain the concept of initial and final condition.
14)What is the meaning of t(0-),t(0+) and t=∞ .

Unit – 2 Resonance in Series and Parallel Circuits (14 M)

Question for 2 Marks

15)Draw the graph of resonance in RLC series circuit.
16) Define –i) Resonance in series circuit ii) Resonance in parallel circuit
17) Define Resonant Frequency with its expression.
18) Define Bandwidth of series RLC circuit and give the expression.
19) Define Q-factor of series RLC and parallel circuit.
20) Define voltage and current magnification.

Question for 4 Marks

21) Compare series resonant circuit and parallel resonant circuit.
22) Write conditions for series resonance and parallel resonance.

Unit – 3 Principles of Circuits (14 M)

Question for 2 Marks

23) Draw the ideal and practical current source.

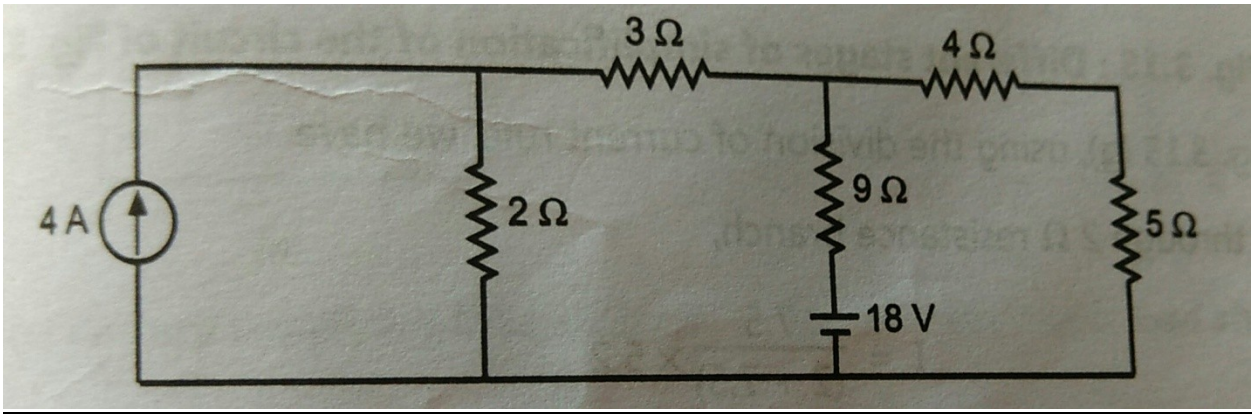
24) Draw the ideal and practical voltage source.

25) Differentiate between Ideal and Practical current source.

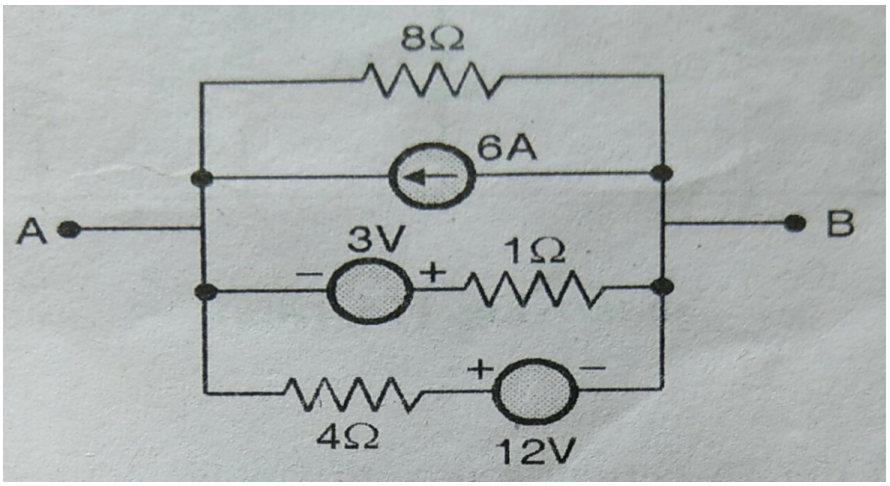
26) Differentiate between Ideal and Practical voltage source.

Question for 4 Marks

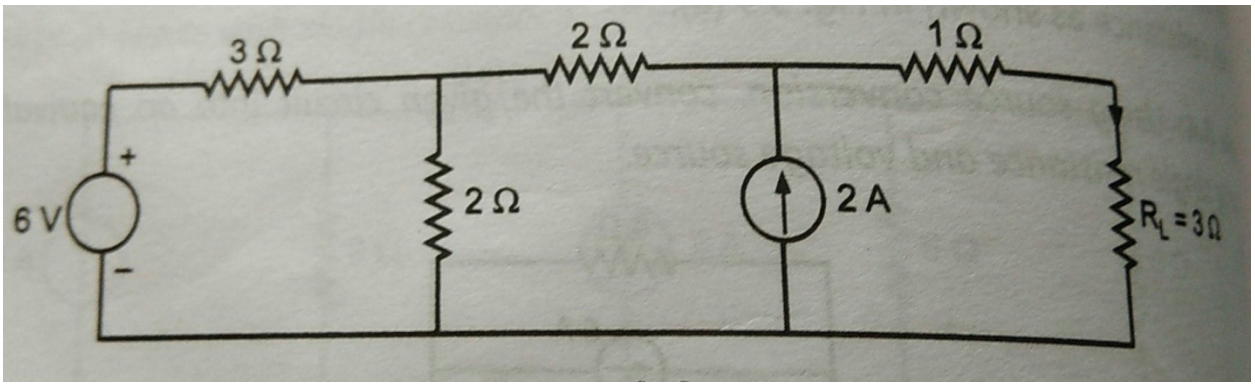
27)Find the current through 2Ω resistance branch in the circuit shown below using source transformation technique.



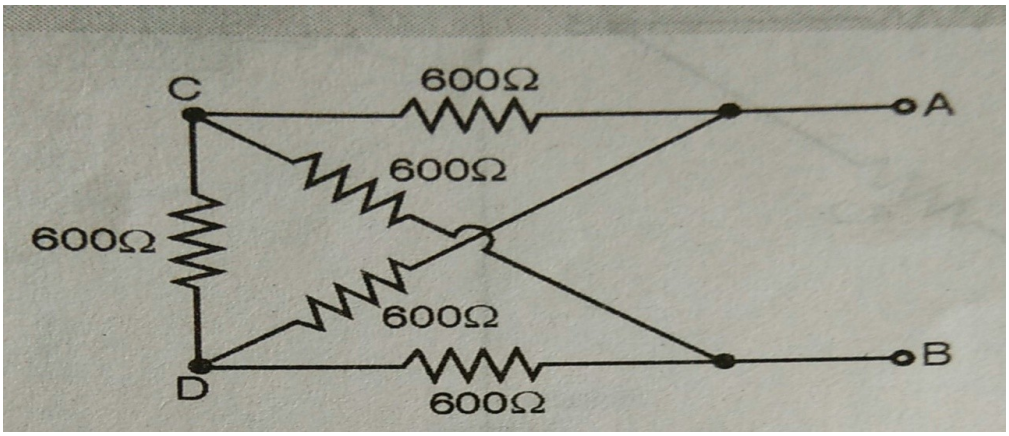
28) Using source conversion converts the given circuit into an equivalent circuit containing single resistance and voltage source.



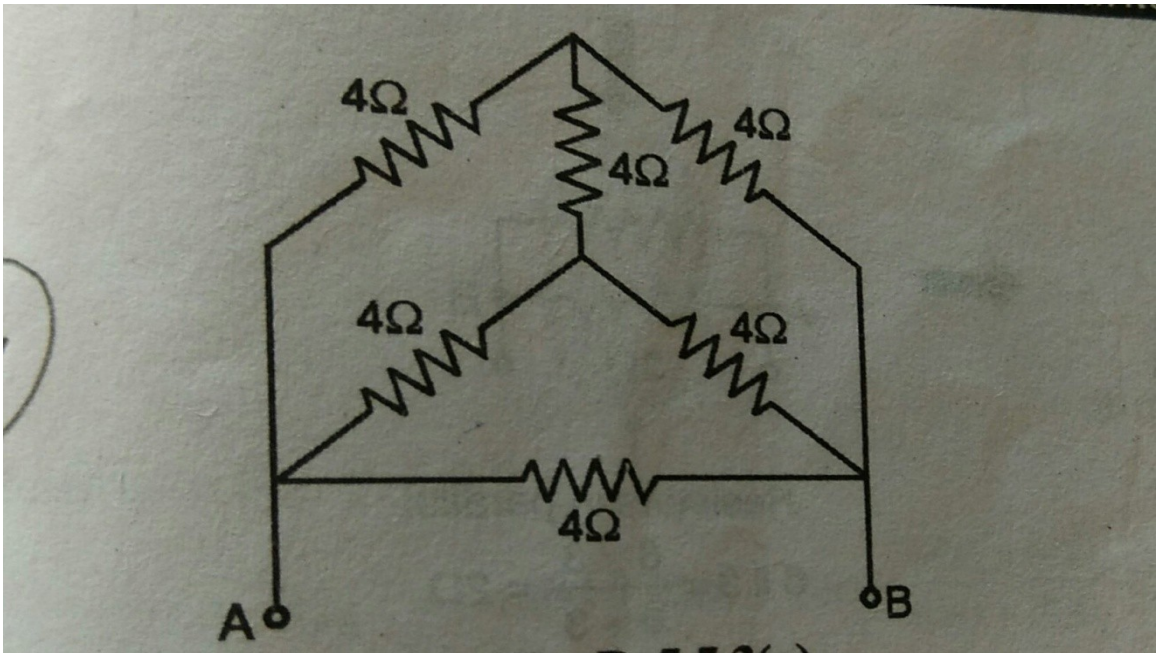
29) Using the source conversion technique, find the current through load resistance RL of the given circuit.



30) Find the equivalent resistance of the given network using Delta/Star conversion shown below.



31) Calculate equivalent resistance R(AB) using delta star transformation.



32) A network of resistance is shown in figure with AB=9Ω, BC=1Ω, CA=1.5Ω forming a delta and AD=6Ω, BD=4Ω, CD=3Ω forming a star.Compute the network resistance between A and B.