

## ASSIGNMENT

Muzaffarpur institute of technology,

Muzaffarpur

Basic Electrical Engineering (1<sup>st</sup> Semester)

### ASSIGNMENT No 1

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Q1 Distinguish among voltage, voltage drop voltage rise and potential difference. **(CO1, R)**

Q2. Write the expressions of star to delta transformation.

Q3. Explain the principle of conservation of energy and its relationship to kirchoff's voltage law. **(CO1,R, U)**

Q4. Explain the principle of conservation of charge and its relationship to kirchoff's current law. **(CO1, R, U)**

Q5. Use Thevenin's theorem to determine the current through and the voltage across the R4 resistor given in figure 1. **(CO1,U)**

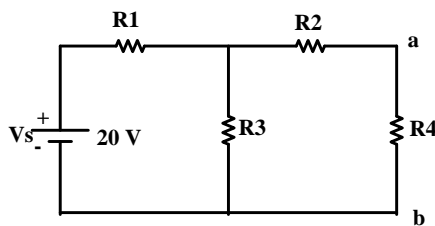


Figure: 1

Where  $R_1 = 10\ \Omega$ ,  $R_2 = 10\ \Omega$ ,  $R_3 = 10\ \Omega$  and  $R_4 = 25\ \Omega$

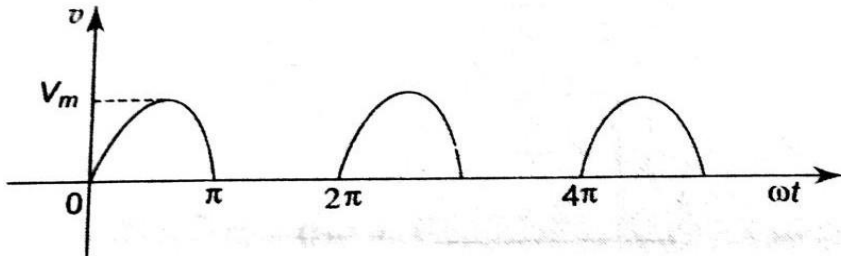
Q6. (a) Explain superposition theorem and Norton's theorem **(CO1, R)**

(b) State maximum power transfer theorem

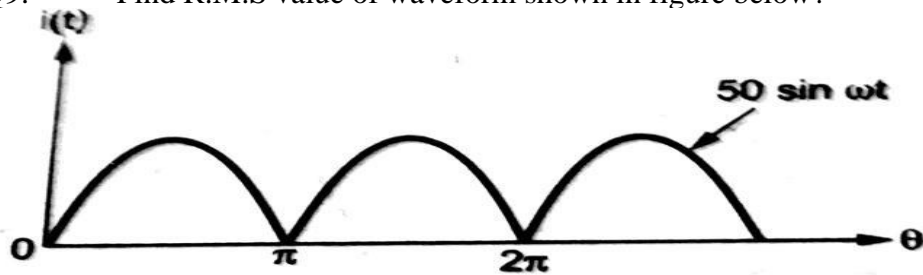
(c) State Thevenin's theorem.

Q7. Explain the delta to star conversion. **(CO1, R)**

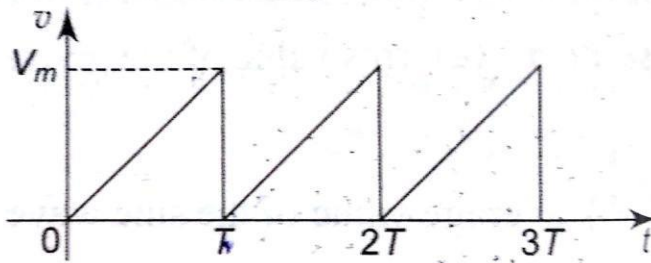
Q8 Obtain average value of sinusoidal waveform shown in figure?



Q9. Find R.M.S value of waveform shown in figure below?



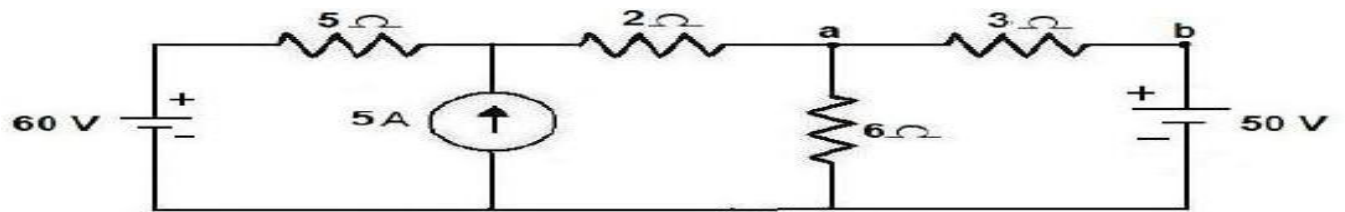
Q10.. Find the R.M.S value of the waveform shown in figure below?



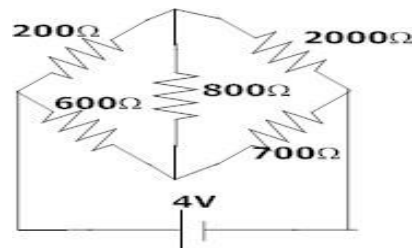
Q11. Define the terms peak, peak to peak, average, RMS values, peak factor and form factor of sine wave.

Q12. Derive the expression for average and RMS values of sine wave.

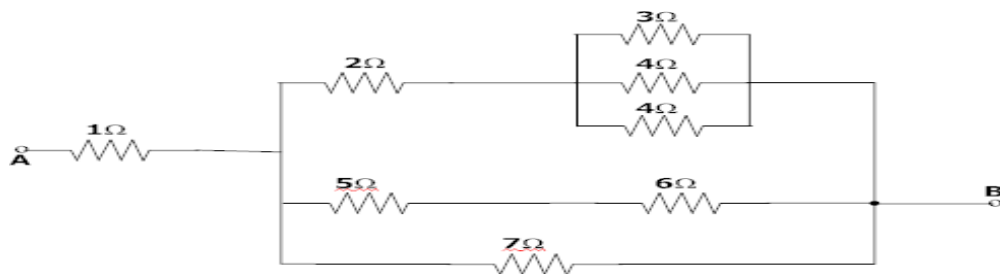
Q13. Determine the current through branch a-b using mesh analysis shown in figure below.



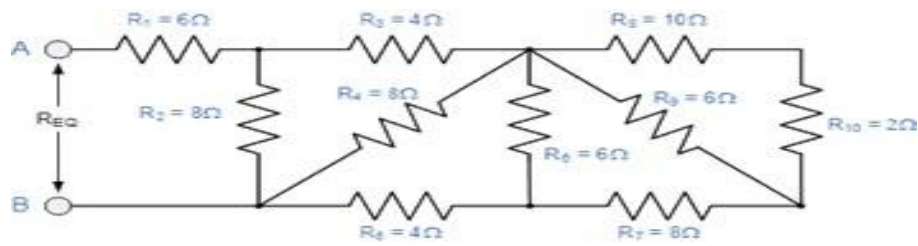
Q14. Determine the current through 800 ohm resistor in the network shown in figure.



Q15. Determine equivalent resistance for the circuit shown in the figure



Q16. Calculate equivalent resistance of circuit shown in figure below



Q17. Compute all types of relations between two wave forms and write the relevant expressions.