

Note : Answer **ALL** questions.
Assume suitable missing data, if any.

- 1[a] Using star-delta transformation, determine the resistance between terminals A-N, and the total power drawn from the supply in the circuit below (1-a):

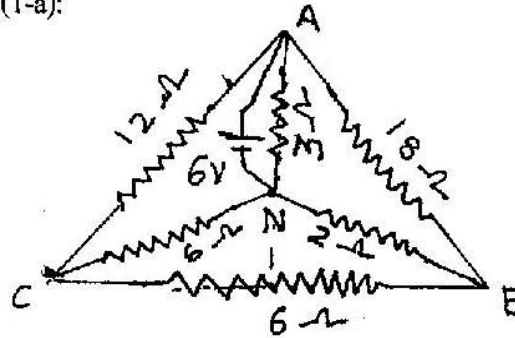
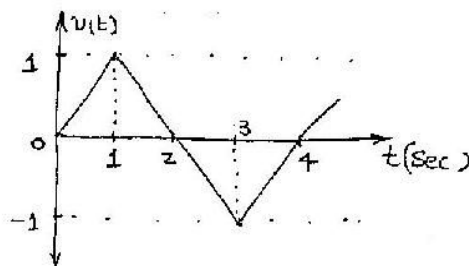


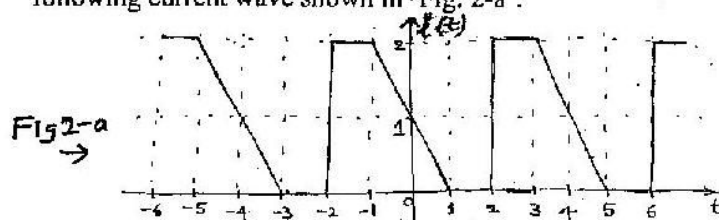
Figure : 1-(a)

- [b] Calculate the current through the inductor at $t = 1, 2, 3, 4$ if a voltage wave form having the time variation shown in Fig.(1-b) below. Take $L = 0.1 \text{ H}$



Fig(1-b)

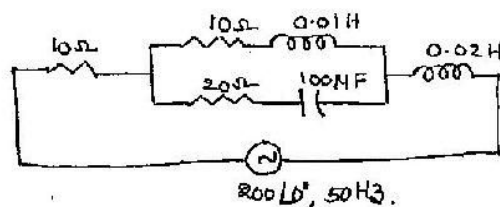
- 2[a] Calculate the RMS, average, form factor, and peak factor for the following current wave shown in Fig. 2-a.



$$m = \frac{2}{1} = 2$$

$$m = 1$$

- [b] Find the complex power supplied by the source in the circuit shown in (Fig. 2-b) below. Also calculate the power factor of the circuit.



(Fig 2-b)

- 3[a] For the circuit shown in Fig.(3-a) below, determine the current through the 8 ohm resistance connected across terminal A-B, by using thevenin's theorem.

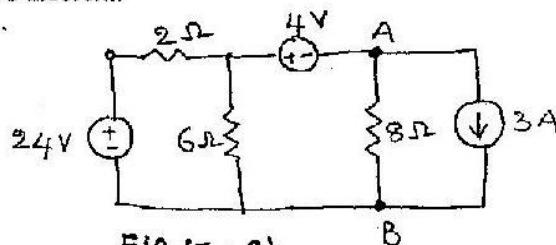


Fig. (3-a)

- [b] Analyze the circuit of Fig.(3-b) using node voltages and find the power being supplied by the 6A source.

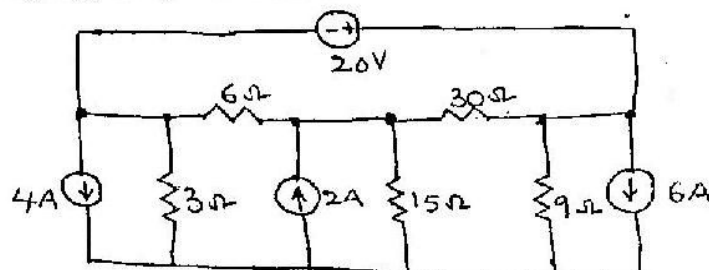


Fig. (3-b)