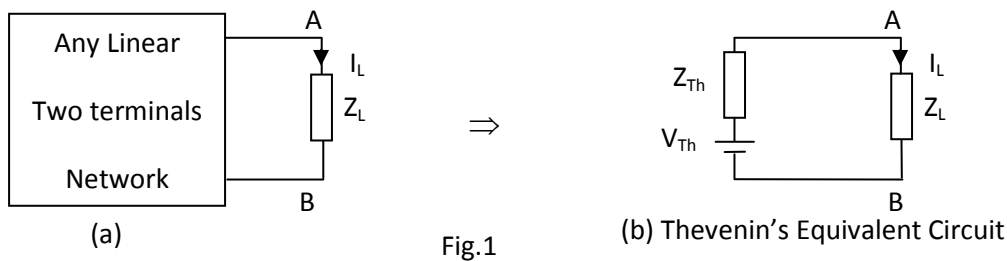# EXPEREMENT-2

AIM: To verify the Thevenin's Theorem with dc and ac sources using MULTISIM software.

SOFTWARE REQUIRED: MULTISIM software.

THEORY:

Thevenin's theorem: "Any linear two terminal circuits can be replaced by an equivalent network consisting of a voltage source (V_{Th}) in series with impedance Z_{Th} (or R_{Th} for DC network)."

Fig.1

(a)   (b) Thevenin's Equivalent Circuit

Where

V_{Th} = Open circuit voltage at load terminals

Z_{Th} (or R_{Th}) = Equivalent Impedance (Resistance) of the network at load terminals when the sources are made in-operative.

And
$$I_L = \frac{V_{Th}}{Z_{Th} + Z_L}$$
Fig.1

Circuits:

a. **For DC source:** Find out current in R_3 in the circuit shown in figure 2a by Thevenin's theorem. Assume any value for V_1, V_2, I, R_1, R_2 but R_3= your class roll no.

(a)   (b)

Fig. 2

---
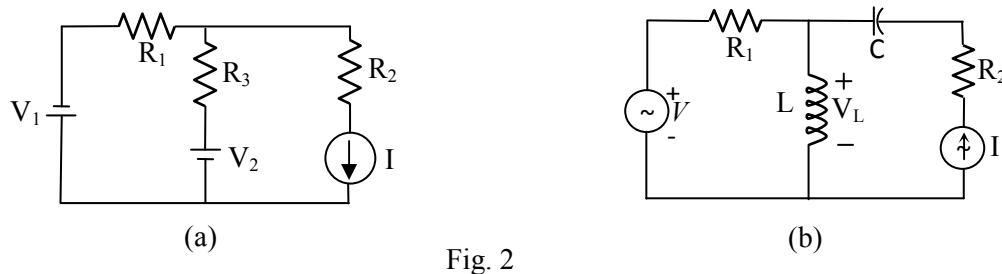
b. **For AC source:** Find out voltage across L in the circuit shown in figure 2b by Thevenin's theorem. Assume any value for V, I, L, C, R_1 but R_2= your class roll no.

SOFTWARE CIRCUITS:

CALCULATIONS:

RESULT: The following circuit verifies the superposition theorem.

PRECAUTION:

1. Ground the circuit before simulation.

2. Design circuit carefully.

3. Save the file properly

4. Don't change the setting the software and computer.