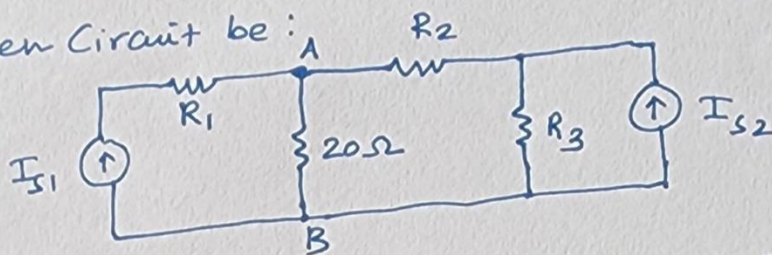


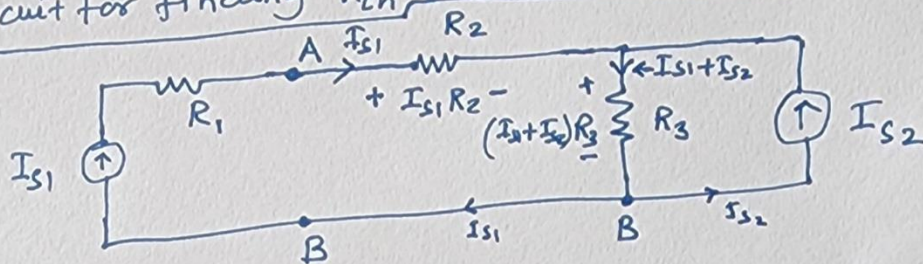
Quiz EE101ME Solution (Model)

Given Circuit be:



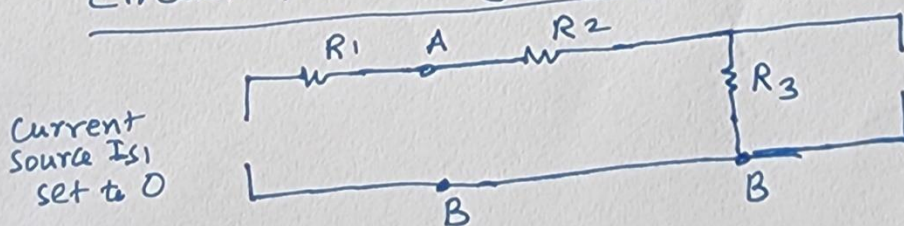
Remove $R = 20\Omega$ to open the circuit across the terminals A-B.

Circuit for finding V_{th} (Open circuit voltage V_{oc}):



Open circuit Voltage $V_{oc} = V_{th} = I_{S1}R_2 + (I_{S1} + I_{S2})R_3$

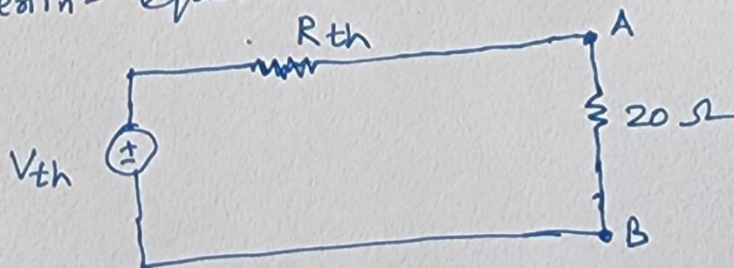
Circuit for finding R_{th} :



Current source I_{S2} is set to 0

$$R_{AB} = R_{th} = R_2 + R_3$$

Thevenin's equivalent circuit becomes:



Finally, voltage across A-B is

$$V_{AB} = \frac{V_{th}}{(R_{th} + 20)} \times 20 = \frac{I_{S1}R_2 + (I_{S1} + I_{S2})R_3}{(R_2 + R_3 + 20)} \times 20$$

14-Aug-25

Name:

Signature:

(Write answers on this Question Paper Cum Answer Sheet. Use Additional Sheets for Rough Work)

Using Thevenin's theorem, find voltage across A-B for the electric circuit shown in Fig.1.

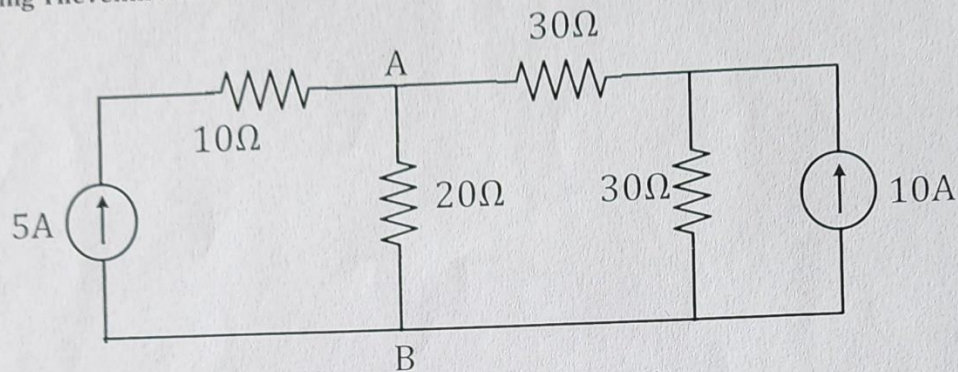
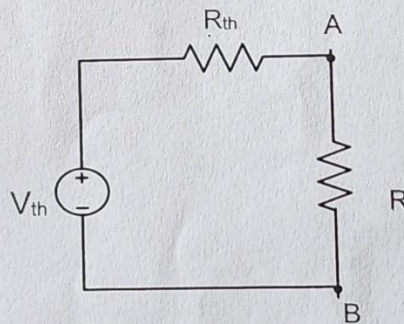


Fig. 1

Solution:

[9+9+3+9] Marks

Let the Thevenin's equivalent circuit be shown as



Then, $V_{th} = 600$ V, $R_{th} = 60$ Ω and $R = 20$ Ω .

Voltage across A-B is 150 V.

----- END -----

14-Aug-25

Name:

Signature:

(Write answers on this Question Paper Cum Answer Sheet. Use Additional Sheets for Rough Work)

Using Thevenin's theorem, find voltage across A-B for the electric circuit shown in Fig.1.

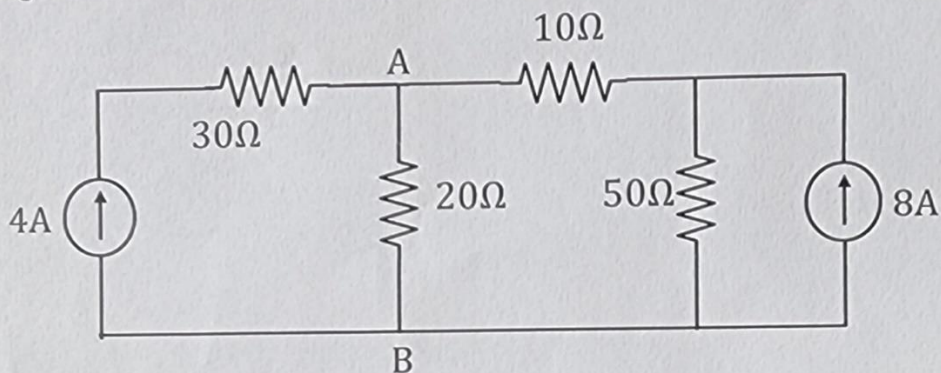
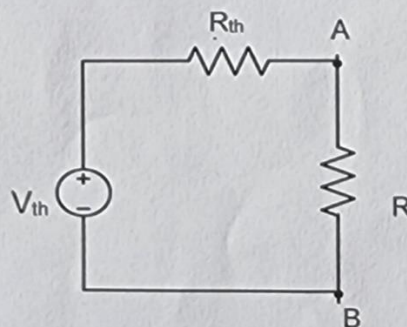


Fig. 1

Solution:

[9+9+3+9] Marks

Let the Thevenin's equivalent circuit be shown as



Then, $V_{th} = 640$ V, $R_{th} = 60$ Ω and $R = 20$ Ω .

Voltage across A-B is 160 V.

----- END -----

14-Aug-25

Name:

Signature:

(Write answers on this Question Paper Cum Answer Sheet. Use Additional Sheets for Rough Work)

Using Thevenin's theorem, find voltage across A-B for the electric circuit shown in Fig.1.

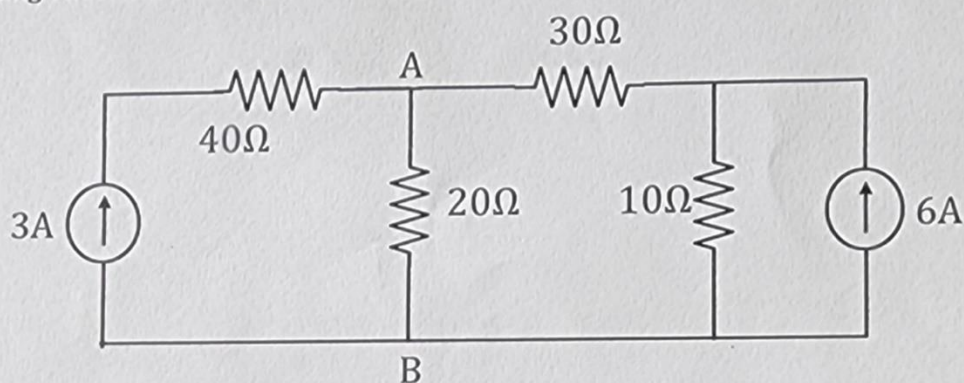
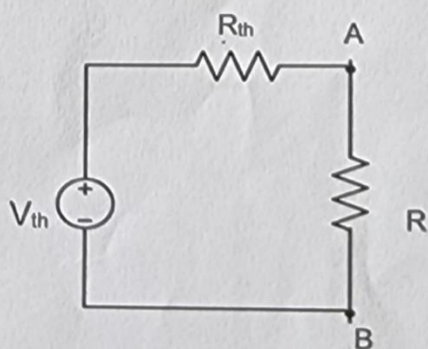


Fig. 1

Solution:

[9+9+3+9] Marks

Let the Thevenin's equivalent circuit be shown as



Then, $V_{th} = 180$ V, $R_{th} = 40$ Ω and $R = 20$ Ω .

Voltage across A-B is 60 V.

----- END -----