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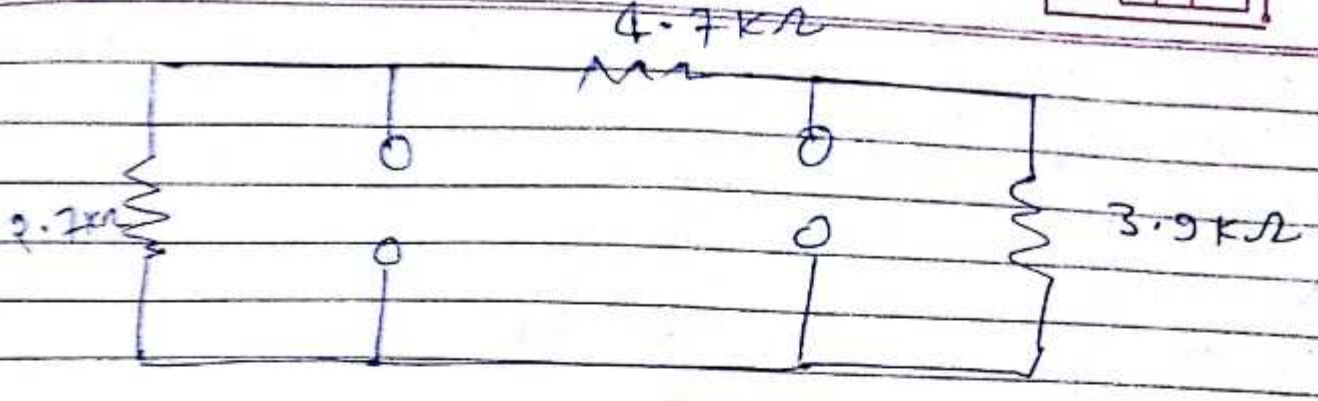
Answer

for resistance



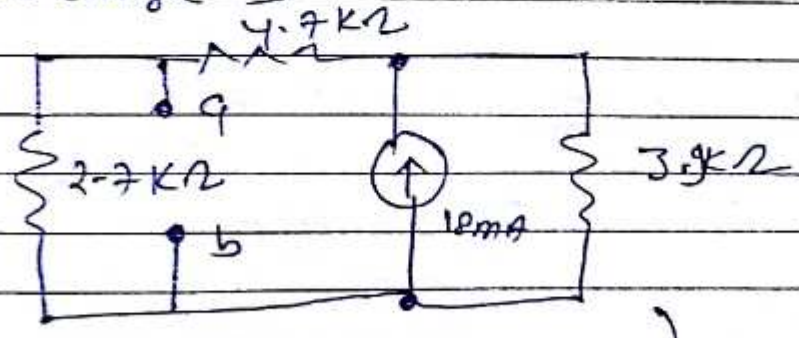
$R_T = R_2 + R_3 \,||\, R_1$

$= (4.7 + 3.9)\,K\Omega \,//\, 2.7\,K\Omega$

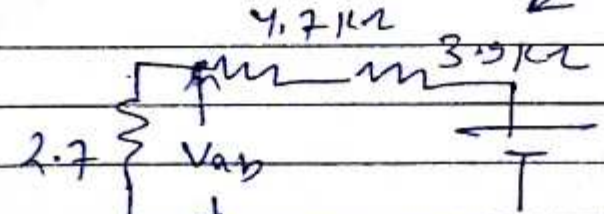
$R_T = \dfrac{8.6 \times 2.7}{8.6 + 2.7} = 2.055$

$\boxed{R_T = 2.055\,K\Omega}$

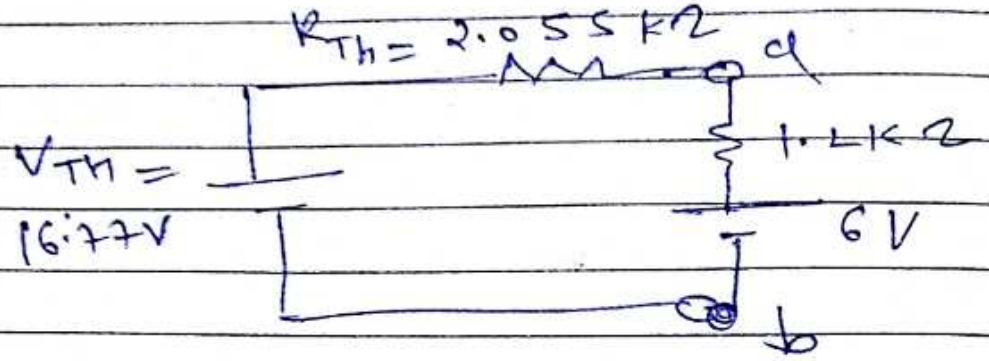
for voltage ⇒



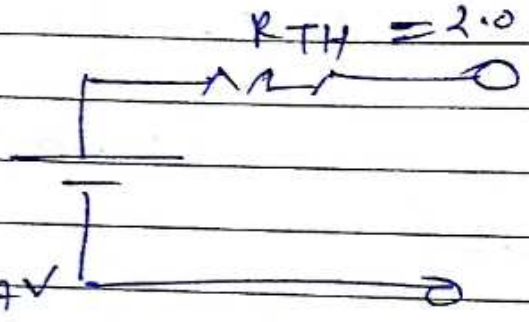
$V_{ab} = V_{th} = 16.77\,V$



Thus Thevenin circuit →



equivalent →



(b) $V_{TH} - 2.055K\,I - 1.2K\,I - 6 = 0$

$10.77 = 3.255K\,I$

$I = 3.31$ mA

Hence current is 3.31 mA

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