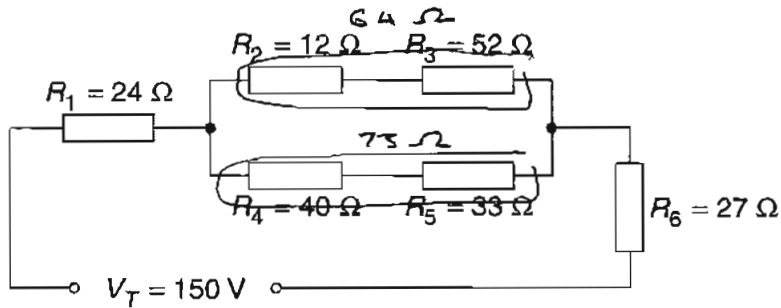


**Question 24** (3 marks)

Calculate the total resistance of the electrical circuit shown. Show all your working in the space provided.

3



~~$R_1 = 24$   $R_2 + R_3 = 64$   $R_4 + R_5 = 73$   $R_6 = 27$~~

~~$R = 24 + \left( \frac{1}{R_2 + R_3} + \frac{1}{R_4 + R_5} \right)^{-1} + 27$~~

~~$R = R_1 + R_2 + R_3 \dots$   $R = \left( \frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3} \dots \right)^{-1}$~~

$R = R_2 + R_3 = 64 \Omega$        $R = R_4 + R_5 = 73 \Omega$

$R_T = 24 + 35.5 + 27$   
 $R_T = 86.5 \Omega$

$R = \left( \frac{1}{64} + \frac{1}{73} \right)^{-1}$   
 $= 35.5 \Omega$