

Question Number	Answer	Mark
12	Use of conservation of charge	(1)
	Use of conservation of energy	(1)
	Algebra leading to given expression	(1)
	3	
	<u>Example of derivation</u> (conservation of charge) $I = I_1 + I_2$ $\frac{V_{tot}}{R_{tot}} = \frac{V_1}{R_1} + \frac{V_2}{R_2}$ (conservation of energy) $V_{tot} = V_1 = V_2$ $\frac{1}{R_{tot}} = \frac{1}{R_1} + \frac{1}{R_2}$ $\frac{1}{R_{tot}} = \frac{R_1 + R_2}{R_1 R_2}$ $R_{tot} = \frac{R_1 R_2}{R_1 + R_2}$	
Total for question 12		3