
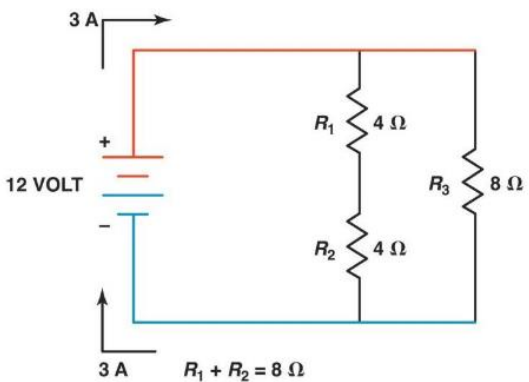
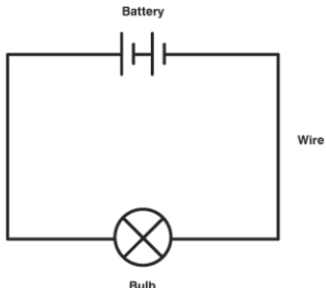
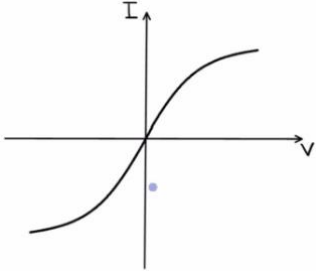


P4 Electric circuits revision questions **ANSWERS**

1	When plastic rod is rubbed the rod becomes positively charged. Describe how this has happened.	Friction has moved electrons from the rod to the cloth	
2	Why do cloths sometimes stick to one another when they have been in the tumble drier?	Electrons move from one garment to the other – opposite charges attract	
3	Give an example of where static electricity can be useful? dangerous ?	Paint/ crop spraying/inkjet printers fuelling a plane	
4	What is the unit of electric charge ?	Coulomb	
5	What device measures the rate of flow of charge ?	Ammeter (1 amp = 1 coulomb/second)	
6	How must a voltmeter be connected to measure potential difference ?	In parallel	
7	Give the symbol for a diode a thermistor a variable resistor		
8	What happens to the current in a circuit when the resistance is increased ?	It decreases	
9	If 2 A flows from a battery for 30 minutes how much charge has flowed from it ?	$Q = It = 2 \times 30 \times 60 = 3600 \text{ C}$	
10	A 3V battery supplies 200C of charge to a bulb. How much energy has it transferred ?	$E = QV = 200 \times 3 = 600 \text{ J}$	
11	How can the resistance of a component be measured?	Put ammeter in series, voltmeter in parallel then $R = V / I$	
12	What would be the total resistance of three 20 ohm bulbs placed in series in a circuit?	$20 + 20 + 20 = 60 \Omega$	
13	What would happen to the circuit if one of the bulbs blew? Explain.	They would all go out – incomplete circuit	
14	What factors does the resistance of a piece of wire depend upon ?	Length, thickness (CS area), material, temperature	
15	 <p>1.5A Current splits equally</p> <p>12V Each branch gets the full volts</p> <p>6V R1 and 2 get half share</p> <p>What current will flow through R_1 ? What would a voltmeter read in parallel with R_3 ? What would a voltmeter read in parallel with R_1 ?</p>	<p>16 What would happen to the bulb in the circuit if a second identical one were added in parallel with it? Explain</p> <p>It would stay the same brightness Overall resistance would halve but each bulb would receive half share so no change. Both get full volts</p> 	<p>17 What component would give this Voltage current characteristic ?</p> <p>How does resistance change as the potential difference is increased ?</p>  <p>A filament bulb The resistance gets higher as V increased (more V needed to increase current)</p>