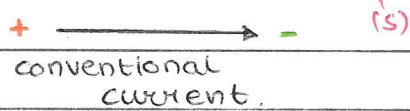


\* Electric current, p.d. and resistance \*

Q-1) What is current?

> Electric current is the rate of flow of ~~electrons~~ electric charges, <sup>past a point</sup>  $I = \frac{Q}{t}$  <sub>Coulomb (C)</sub>

$I = \frac{Q}{t}$  unit = Amps  $\Rightarrow A$



Q-2) What is electric charge?

>  $Q = I \times t$

The unit of charge is coulomb (C)

One Coulomb is the charge which flows at a time of 1 second when the current is 1A.

Charge on 1 electron =  $1.6 \times 10^{-19}$

Q-3) Difference between e.m.f and p.d.

e.m.f	p.d.
> emf is the amount of chemical energy converted to electrical energy per unit charge.	p.d. is the electrical energy converted to other forms of energy (eg: heat) per unit charge.
> it's an input to the circuit	it's an output to the circuit.
> sum of all p.d	$V = \frac{\text{work done (energy)}}{\text{charge}}$

Q-4) What is the Ohm's law?

>  $V = IR$  voltage is proportional to current.

Q-5) What is power?

> Power is the rate at which energy is transferred.

$$P = I \times V$$

$$P = V^2 / R$$

$$P = I^2 R$$

$$\text{energy transferred} = P \times t = I \times V \times t.$$

\* Power =  $\frac{\text{energy transferred}}{\text{time taken}}$ .

$$P = \frac{V \times Q}{t} \quad \text{--- } Q = I \times t.$$

$$P = \frac{V \times I \times t}{t}$$

$$P = IV.$$

↑ = 2πrotubno)  
↓ = 2πrotubno-ims2