KS3 SCIENCE · PHYSICS

Electricity: exam questions

Name _____
Total: 19 marks

1 State the unit of electric current. **[1 mark]**

2 Describe what an electric current is. **[1 mark]**

3 Describe how an ammeter and a voltmeter are each connected in a circuit. **[2 marks]**

4 A series circuit has two lamps. An ammeter before the lamps reads 0.4 A. State the reading on an ammeter placed after the lamps, and give a reason. **[2 marks]**

5 The two branches of a parallel circuit carry currents of 0.3 A and 0.5 A. Calculate the total current supplied by the battery. **[2 marks]**

6 Two lamps are connected in series. One lamp breaks. Explain what happens to the other lamp. **[2 marks]**

7 A lamp has a potential difference of 12 V across it. The current through it is 3 A. Calculate the resistance of the lamp. Give the unit. **[3 marks]**

8 Explain why electrical wires are made of copper covered in plastic. **[2 marks]**

9 A student rubs a balloon on her jumper. The balloon becomes negatively charged. Explain how. **[2 marks]**

10 Two negatively charged balloons hang side by side. Describe what happens to the balloons and explain why. **[2 marks]**

KS3 SCIENCE · PHYSICS

Electricity: mark scheme

Total: 19 marks

1 [1 mark]

- Ampere (accept: amp, A) **(1)**

2 [1 mark]

- A flow of charge (accept: a flow of electrons) **(1)**

3 [2 marks]

- The ammeter is in series (part of the loop) **(1)**
- The voltmeter is in parallel with (across) the part being measured **(1)**

4 [2 marks]

- 0.4 A **(1)**
- Current is the same everywhere in a series circuit (accept: current is not used up) **(1)**

5 [2 marks]

- 0.3 + 0.5 **(1)**
- 0.8 A **(1)**

Give both marks for the correct answer with its unit.

6 [2 marks]

- It goes out **(1)**
- There is only one loop, so the circuit is no longer complete (accept: no current can flow) **(1)**

7 [3 marks]

- resistance = potential difference ÷ current (accept: 12 ÷ 3) **(1)**
- 4 **(1)**
- Ω (accept: ohms) **(1)**

8 [2 marks]

- Copper is a conductor, so current flows through it easily (accept: it has a low resistance) **(1)**
- Plastic is an insulator, so the current cannot reach you (accept: it keeps you safe) **(1)**

9 [2 marks]

- Electrons move **(1)**
- From the jumper to the balloon **(1)**

10 [2 marks]

- They move apart (accept: they repel) **(1)**
- They have the same charge (accept: like charges repel) **(1)**