



## Year 9 Physics

- 1 Why can we not detect a charge of static electricity if we rub a metal rod? **1 mark**
- A. Metal objects cannot be charged with static electricity.
  - B. The charge spreads out over the whole object.
  - C. Metals do not contain electrons that can be transferred.
  - D. Electrons cannot move through metals.
- 2 What is the formula for calculating resistance? **1 mark**
- A. resistance = voltage  $\times$  current
  - B. resistance =  $\frac{\text{current}}{\text{voltage}}$
  - C. resistance =  $\frac{\text{voltage}}{\text{current}}$
  - D. ohms =  $\frac{\text{volts}}{\text{amps}}$
- 3 The direction of a magnetic field is from: **1 mark**
- A. the south pole to the north pole.
  - B. the north pole to the south pole.
  - C. the west pole to the east pole.
  - D. the east pole to the west pole.
- 4 Which of these copper wires has the highest resistance? **1 mark**
- A. 0.5 mm diameter, 10 cm long
  - B. 0.5 mm diameter, 20 cm long
  - C. 1.0 mm diameter, 10 cm long
  - D. 1.0 mm diameter, 20 cm long

5 Using the words in the box

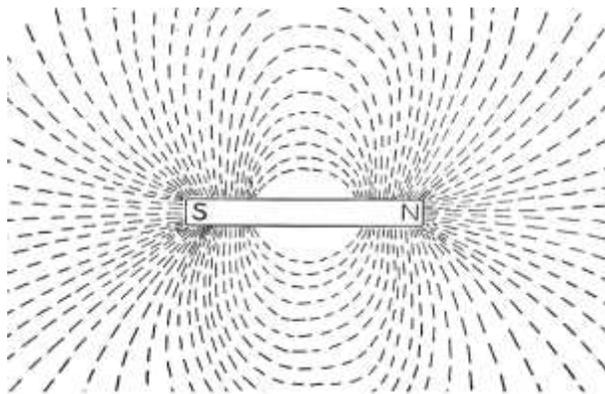
3 mark

**amps, parallel circuit, ammeter, bulb, voltage, series circuit, resistor, switch, cell**

- a. What pushes current around a circuit? \_\_\_\_\_
- b. What has all the components in one loop? \_\_\_\_\_
- c. What can make a gap in a circuit? \_\_\_\_\_
- d. What gets dimmer if you add more of them to a series circuit? \_\_\_\_\_
- e. What is used to measure the size of a current? \_\_\_\_\_
- f. What is a measure of the energy provided by a cell? \_\_\_\_\_

6 Which way does the magnetic field point?

1 mark



- From the north pole to the south pole of the magnet.
- From the south pole to the north pole of the magnet.

7 Using the equation that links voltage, current and resistance.

3 marks

Calculate the missing values.

VOLTAGE (V)	CURRENT (A)	RESISTANCE ( $\Omega$ )
12		6
	10	5
6	2	

**8** Fill in the gaps in these sentences using words from the box. You may use each word once, more than once or not at all. **(6 marks)**

cell	components	current	decreases	electrons
energy	fewer	higher	increases	increases
more	parallel	voltage	voltmeter	volts

An electric circuit has a \_\_\_\_\_ to push \_\_\_\_\_ round the circuit and give them energy, a complete loop for the \_\_\_\_\_ to flow around, and \_\_\_\_\_ that transfer energy.

Voltage is a way of measuring the amount of \_\_\_\_\_ transferred. It is measured using a \_\_\_\_\_, and the units for it are \_\_\_\_\_. Voltmeters are connected in \_\_\_\_\_ to a component.

You can increase the voltage in a circuit by using \_\_\_\_\_ cells, or using cells with a \_\_\_\_\_ voltage. If you increase the voltage the current \_\_\_\_\_, and the amount of energy transferred by the current \_\_\_\_\_.

**9** You rub a polythene rod with a cloth. **(4 marks)**

Tick (✓) the boxes to show which statements are correct.

- Some of the positive charges in the rod move onto the cloth.
- Some of the electrons in the cloth move onto the rod.
- Some of the electrons in the rod move onto the cloth.
- The polythene rod ends up with more negative charges than positive charges.
- The cloth ends up with more positive charges than negative charges.
- The polythene rod ends up with more positive charges than negative charges.
- The amount of charge on the cloth is the same as the amount of charge on the rod, but with the opposite sign.

**Total marks (21 marks)**