

IGCSE Physics

Name: _____ Score: _____

1. Two north poles are brought close together. They:
 - ☐ repel (push apart)
 - ☐ attract (pull together)
 - ☐ do nothing
 - ☐ swap to become south poles
2. Two negative charges attract each other.
 - ☐ True ☐ False
3. A charge of 30 C flows past a point in 10 s. What is the current, in A?
_____ A
4. A component has 12 V across it and a current of 3.0 A through it. What is its resistance, in Ω ?
_____ Ω
5. What happens to the resistance of a thermistor as it gets hotter?
 - ☐ it falls
 - ☐ it rises
 - ☐ it stays the same
 - ☐ it becomes infinite
6. Select **all** of these that are electrical hazards.
 - ☐ damaged insulation (bare wires)
 - ☐ overloading a socket
 - ☐ damp conditions
 - ☐ switching a lamp off

Tick every correct option.
7. The magnetic field of a solenoid (a long coil carrying current) looks like the field of:
 - ☐ a bar magnet
 - ☐ a single point charge
 - ☐ no field at all
 - ☐ a flat sheet

8. How can you induce a current in a coil with a magnet?
- ☐ move the magnet in or out of the coil
 - ☐ hold the magnet still inside the coil
 - ☐ warm the magnet up
 - ☐ paint the coil
9. A transformer works with a steady direct current (d.c.).
- ☐ True ☐ False
10. Which of these is a magnetic material (attracted by a magnet)?
- ☐ iron
 - ☐ copper
 - ☐ plastic
 - ☐ wood

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1. **repel (push apart)**

Like poles repel. Only different poles (N and S) attract.

2. **False**

Like charges repel; only different charges (+ and −) attract.

3. **3 A**

$$I = \frac{Q}{t} = \frac{30}{10} = 3.0 \text{ A.}$$

4. **4 Ω**

$$R = \frac{V}{I} = \frac{12}{3.0} = 4.0 \text{ Ω.}$$

5. **it falls**

A thermistor's resistance falls as temperature rises — useful in temperature-sensing circuits.

6. **damaged insulation (bare wires); overloading a socket; damp conditions**

Bare wires, overloading and damp all raise the risk of shock or fire. Switching a lamp off is normal, safe use.

7. **a bar magnet**

A solenoid produces a bar-magnet-like field, with a north pole at one end and a south at the other.

8. **move the magnet in or out of the coil**

A current is induced only when the field through the coil is changing — for example by moving the magnet.

9. **False**

A transformer needs a changing magnetic field, so it works on a.c. only. A steady d.c. makes no change and induces nothing.

10. **iron**

Iron (also steel, cobalt, nickel) is magnetic. Copper, plastic and wood are not.