30 An electrical conductor has a resistance of 5.6 kΩ. A potential difference (p.d.) of 9.0 V is applied across its ends.

How many electrons pass a point in the conductor in one minute?

A 6.0×10^{20} **B** 1.0×10^{19} **C** 6.0×10^{17} **D** 1.0×10^{16}

31 A fixed resistor of resistance 12 Ω is connected to a battery. There is a current of 0.20 A in the resistor. The current is now doubled.

What is the new power dissipated in the resistor?

A 0.48 W   **B** 0.96 W   **C** 1.92 W   **D** 4.8 W

32 Which **measurements** are taken in order to calculate the resistivity of the metal of a piece of wire?

A p.d., current, area, length

B p.d., current, diameter, length

C resistance, area, length

D resistance, length, radius

33 A 12 V battery is charged for 20 minutes by connecting it to a source of electromotive force (e.m.f.). The battery is supplied with 7.2×10^4 J of energy in this time.

How much charge flows through the battery?

A 5.0 C   **B** 60 C   **C** 100 C   **D** 6000 C