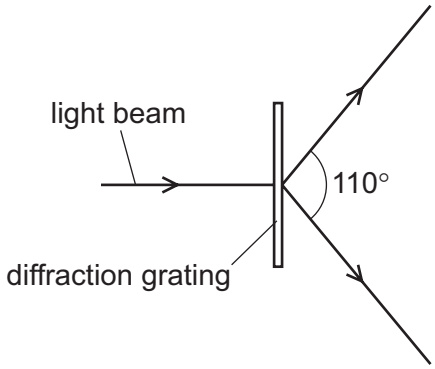
29 A beam of light from a laser is incident normally on a diffraction grating.



The diagram shows only the **second**-order maxima that are produced.

The grating has a line spacing of 1.0×10^{-6} m. The angle between the two second-order maxima is 110°.

What is the wavelength of the light?

A 4.1×10^{-7} m

B 4.7×10^{-7} m

C 8.2×10^{-7} m

D 9.4×10^{-7} m

30 The electric current in a metal wire is 4.0 mA.

How many electrons pass a fixed point in the wire in a time of 10 hours?

A 2.5×10^{17} **B** 2.5×10^{20} **C** 9.0×10^{20} **D** 9.0×10^{23}

31 What is the definition of the potential difference across an electrical component?

A the charge per unit time passing through the component

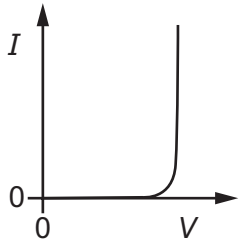
B the energy transferred per unit charge

C the force per unit charge

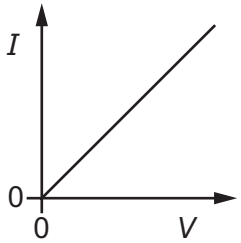
D the resistance per unit current

32 Which graph shows the *I*–*V* characteristic of a filament lamp?

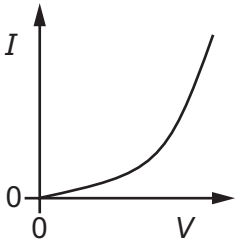
A



B



C



D