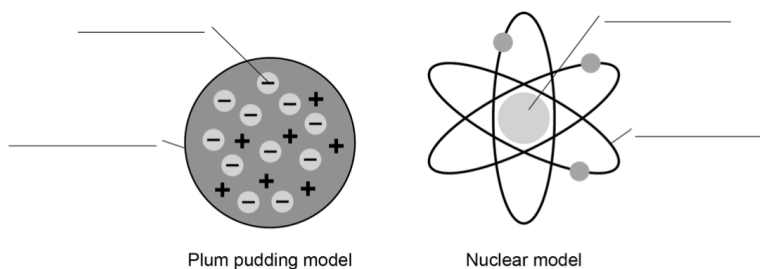


Q1. (2018)

0 1

Figure 1 shows two models of the atom.

Figure 1



a)

0 1 . 1

Write the labels on Figure 1

Choose the answers from the box.

[4 marks]

atom	electron	nucleus
neutron	orbit	proton

b)

0 1 . 2

Explain why the total positive charge in every atom of an element is always the same.

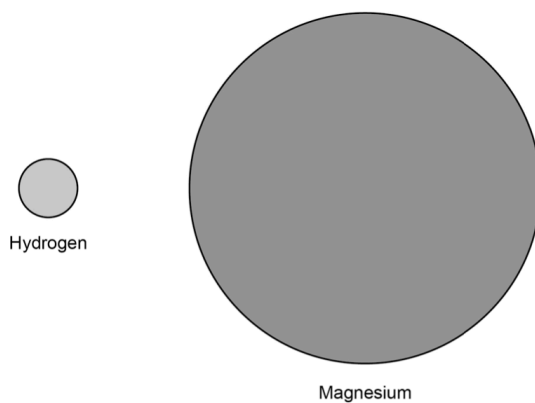
[2 marks]

Q2. (2018)

0 1 . 4

Figure 2 shows two atoms represented as solid spheres.

Figure 2

A hydrogen atom has a radius of 2.5×10^{-11} m

Determine the radius of a magnesium atom.

Use measurements from Figure 2

[2 marks]

Q3. (2021)

0 2 A radioactive source emits alpha, beta and gamma radiation.

0 2 . 1 An alpha particle is the same as a helium nucleus.

How many times bigger is the radius of a helium atom than the radius of an alpha particle?

[1 mark]

Tick (✓) **one** box.

Less than 100 times bigger

☐

Exactly 5000 times bigger

☐

More than 10 000 times bigger

☐

Q4. (2022)

A traditional camera uses a flash unit to provide light.

Figure 10 shows a flash unit on a traditional camera.

Figure 10



0 5 . 3 The flash unit emits light from xenon gas in a fluorescent tube.

What happens when a xenon atom emits light?

[1 mark]

Tick (✓) **one** box.

Electrons in the atom fall to a lower energy level.

☐

Electrons in the atom move to a higher energy level.

☐

Electrons leave the atom, causing ionisation.

☐

Electrons transfer to the atom from the electrical circuit.

☐

Q5. (2024)

0 2 . 2 A gold atom has the symbol $^{197}_{79}\text{Au}$.

How many neutrons are there in this gold atom?

[1 mark]