

GCSE Physics B (Twenty First Century Science)
J259/01 Breadth in Physics (Foundation Tier)

Question Set 17

Multiple Choice Questions

1 Mia researches different models of the atom.

(a) What is the typical size of an atom?

Put a ring around the correct answer.

10^{-3} m

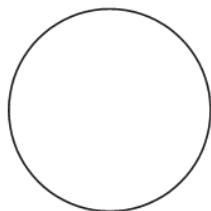
10^{-6} m

10^{-10} m

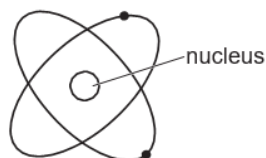
10^{-20} m

[1]

(b) Mia finds out about the models of atoms suggested by Dalton and Rutherford. She draws these diagrams.



Dalton model



Rutherford model

Describe some of the **evidence** that led scientists to believe the Rutherford model instead of the Dalton model.

In the leaf experiment most particles went straight through but some reflected back, which could only be explained by the Rutherford model.

[2]

(c) Mia finds out more information about the nucleus of the atom on the Internet.

Mia

'The Internet says the nucleus is tiny and negatively charged. It contains protons and electrons.'



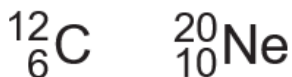
There are some mistakes in this information.

Write down **two incorrect** parts of the information.

[2]

- The nucleus is negative
- The nucleus contains electrons

(d) The nuclei of two atoms, carbon and neon, are represented below.



(i) What is the total **mass** of these two nuclei?

Put a (ring) around the correct answer.

$12 - 6$

$10 + 6$

$20 + 10$

$20 + 12$

[1]

(ii) What is the difference between the **charges** of these two nuclei?

Put a (ring) around the correct answer.

$10 - 6$

$12 - 6$

$20 - 12$

$20 - 10$

[1]

Total Marks for Question Set 17: 7

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