2.12 Atomic Structure and the History of the Atom: 10-minute Pack

Total Marks

AQA 8464 · Calculator allowed · about 10 minutes

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 'Atomic number' and 'mass number' are used to describe atoms.

(a) Define the term 'atomic number'. **(1)**

(b) Define the term 'mass number'. **(1)**

(c) An atom of fluorine has an atomic number of 9 and a mass number of 19. State the number of protons, neutrons and electrons in this atom. **(3)**

(Total for Question 1 is 5 marks)

2 In the early 1800s, John Dalton proposed one of the first scientific models of the atom.

(a) Describe Dalton's model of the atom. **(2)**

(Total for Question 2 is 2 marks)

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3 The list below shows four scientists whose work contributed to the model of the atom, but not in the correct order: Bohr, Rutherford, Dalton, Thomson.

(a) Put these four scientists in the correct chronological order, from the earliest contribution to the most recent. **(2)**

(Total for Question 3 is 2 marks)

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Mark scheme · 2.12 Atomic Structure and the History of the Atom: 10-minute Pack

Question 1

(a) the number of protons in the nucleus of an atom oe **B1**

(a) Answer: The number of protons in an atom's nucleus

(b) the total number of protons and neutrons in the nucleus of an atom oe **B1**

(b) Answer: The total number of protons and neutrons in an atom's nucleus

(c) protons = 9 cao **B1**

(c) neutrons = 10 cao (19 - 9) **B1**

(c) electrons = 9 cao **B1**

(c) Answer: Protons = 9, neutrons = 10, electrons = 9

Question 2

(a) atoms are described as solid spheres oe **B1**

(a) that cannot be divided, created or destroyed, with a different sphere for each different element oe **B1**

(a) Answer: Atoms are solid spheres that cannot be divided; different elements are made of different spheres

Question 3

(a) Dalton placed first and Thomson placed second oe **B1**

(a) Rutherford placed third and Bohr placed fourth, giving the fully correct order: Dalton, Thomson, Rutherford, Bohr **B1**

(a) Answer: Dalton, Thomson, Rutherford, Bohr

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