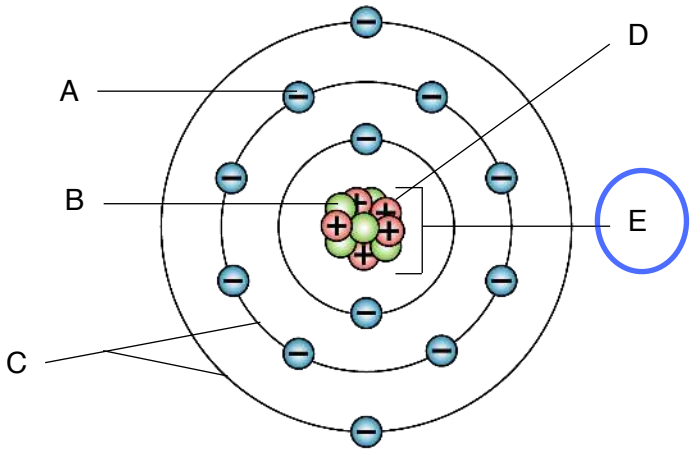
0 1 . 1 What can you conclude from the fact that scientists continue to update the atomic model?

[1 mark]

- ☑ New information about atoms continues to be discovered
- ☐ Old information about atoms is completely useless
- ☐ Scientists did not have any information about atoms until a few years ago
- ☐ Scientists still have no idea what atoms look like

0 2 Here is a diagram representing an atom:



0 2 . 1 Circle the letter which represents the area where the majority of an atom's mass exists? **[1 mark]**

0 2 . 2 What is the name of this part of the atom? **[1 mark]**

the nucleus **[1]**

.....

0 3 Several different scientists made key discoveries about the structure of the atom.

0 3 . 1 Describe the key features of Thompson's plum pudding model of the atom.

[2 marks]

.....

ball/sphere of positive charge **[1]**

.....

with electrons embedded/dotted around in it **[1]**

.....

0 3 . 2 In 1922, Bohr changed the theory about how electrons are arranged around the atom. How did his ideas differ from our previous understanding?

[1 mark]

.....

(electrons) are arranged in shells/energy levels **[1]**

.....

0 3 . 3 Chadwick discovered the neutron in 1932.

How are neutrons different from protons and electrons? **[1 mark]**

.....

They have no electrical charge **[1]**

.....

0 4 In 1911, Rutherford and Marsden conducted an experiment involving bombarding a thin layer of gold foil with alpha particles. This was called the scattering experiment.

0 4 . 1 In the scattering experiment, most of the particles fired at the foil:

[1 mark]

☐ bounced back

☑ passed through the foil

☐ were absorbed

☐ combined with the foil

0 4 . 2 From these results, Rutherford discovered that atoms were mostly:

[1 mark]

□ Negatively charged

□ Positively charged

□ Electrons

☑ Empty space

(Total 9 marks)

End