



1 This question is about the structure of atoms.

a Name the three particles that are found inside atoms.

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b Which of these particles are found inside the nucleus of the atom.

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c Which of these particles is neutral? .....

d Which of these particles has a negative electric charge? .....

e Which of these particles has a positive electric charge? .....

2 This question is about  $^{27}_{13}Al$  atoms.

a How many protons, neutrons and electrons are in this atom?

protons = ..... neutrons = ..... electrons = .....

b What is it that makes this an atom of aluminium? .....

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3 Geiger and Marsden carried out an experiment where they fired alpha particles at a thin piece of gold. A small number of alpha particles were deflected or bounced back. This experiment led to Rutherford developing a new model of the atom.

a Why do most of the alpha particles pass straight through the gold atoms? .....

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b Why do some of the alpha particles deflect or bounce back? .....

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c Give two key differences between Rutherford's model of the atom and the Thomson's plum pudding model that it replaced.

1.....

2.....

4 a Define the term atomic number. ....

b Define the term mass number. ....