

- 7 The results of the  $\alpha$ -particle scattering experiment provided evidence for the existence and small size of the nucleus.

(a) State the result that provided evidence for

- (i) the small size of the nucleus, compared with the atom,

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.....[2]

- (ii) the nucleus being charged and containing the majority of the mass of the atom.

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.....[2]

- (b) The  $\alpha$ -particles in this experiment originated from the decay of a radioactive nuclide. Suggest two reasons why  $\beta$ -particles from a radioactive source would be inappropriate for this type of scattering experiment.

1. ....  
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2. ....  
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[2]