

- 7 (a) One of the results of the  $\alpha$ -particle scattering experiment is that a very small minority of the  $\alpha$ -particles are scattered through angles greater than  $90^\circ$ .

State what may be inferred about the structure of the atom from this result.

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 .....  
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[2]

- (b) A hadron has an overall charge of  $+e$ , where  $e$  is the elementary charge. The hadron contains three quarks. One of the quarks is a strange (s) quark.

- (i) State the charge, in terms of  $e$ , of the strange (s) quark.

charge = ..... [1]

- (ii) The other two quarks in the hadron have the same charge as each other.

By considering charge, determine a possible type (flavour) of the other two quarks.  
 Explain your working.

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 .....

[2]

[Total: 5]

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