

- 7 An α -particle A approaches and passes by a stationary gold nucleus N. The path is illustrated in Fig. 7.1.

For
Examiner's
Use

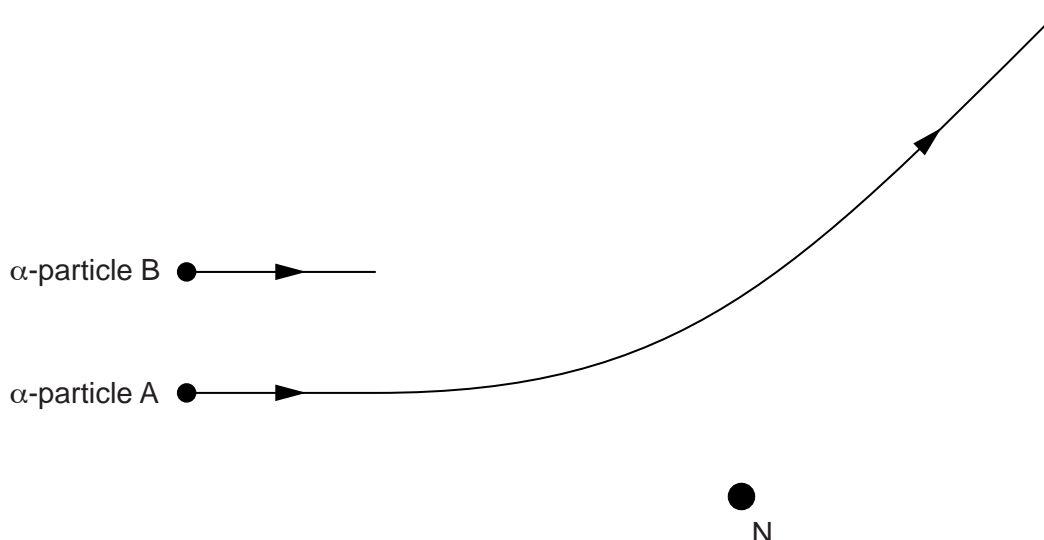


Fig. 7.1

- (a) On Fig. 7.1, mark the angle of deviation D of this α -particle as a result of passing the nucleus N. [1]
- (b) A second α -particle B has the same initial direction and energy as α -particle A. On Fig. 7.1, complete the path of α -particle B as it approaches and passes by the nucleus N. [2]
- (c) State what can be inferred about atoms from the observation that very few α -particles experience large deviations.

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..... [2]

- (d) The nucleus N could be one of several different isotopes of gold.

Suggest, with an explanation, whether different isotopes of gold would give rise to different deviations of a particular α -particle.

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..... [2]

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