

**38** In the Rutherford scattering experiment,  $\alpha$ -particles were fired at a thin gold foil. A small proportion of the  $\alpha$ -particles were deflected through large angles.

Which statement gives the correct conclusion that could be drawn directly from these results?

- A** The atom is made up of electrons, protons and neutrons.
- B** The nucleus is at the centre of the atom.
- C** The nucleus is made up of protons and neutrons.
- D** The atom contains a very small, charged nucleus.

**39** Which statement about the nuclei of the atoms of an element is correct?