

13 The alpha particle scattering experiments using gold foil were first carried out by a team of scientists led by Rutherford.

\*(a) Following these experiments Rutherford said, “It was almost as incredible as if you fired a 15-inch shell (large missile) at a piece of tissue paper and it came back and hit you.”

Explain why Rutherford was surprised at the results of the experiment and how this led to the nuclear model for the atom.

(6)

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

(b) Explain why the thickness of the gold foil had to be very small.

(2)

(Total for Question 13 = 8 marks)