

Models of the Atom

Questions for GCSE Physics



1. What subatomic particle was discovered by J. J. Thomson?

2. What name was given to J. J. Thomson's model of the atom?

3. Describe J. J. Thomson's model of the atom.

4. Explain why an atom in Thomson's model had no overall electrical charge.

5. Rutherford, Geiger and Marsden used alpha particles to investigate atomic structure. What electrical charge does an alpha particle have?



6. The scientists fired alpha particles at a very thin sheet of metal. What metal did they use?

7. Most of the alpha particles did pass straight through the metal foil. What does this suggest about the structure of an atom?

8. Some alpha particles were deflected through large angles. What conclusion could Rutherford draw from this observation?

9. A very small number of alpha particles were deflected back towards their source. What did this suggest about the nucleus?

10. What did Niels Bohr add to the nuclear model of the atom?



11. A student says:

“Rutherford's experiment proved that atoms are solid objects because some alpha particles bounced back.”

Explain why the student's conclusion is incorrect. Use evidence from the scattering experiment in your answer.

[4 marks]

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12. Describe how the model of the atom changed as a result of new experimental evidence.

Your answer should include the contributions of **Dalton, Thomson, Rutherford and Bohr.**

[6 marks]

[illegible]

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