



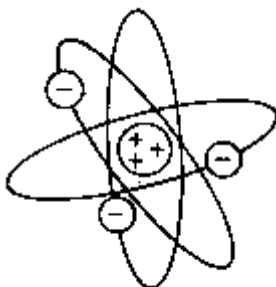
## CHAPTER 2: THE STRUCTURE OF THE ATOM



### Questions

#### Objective Questions

- 1 The diagram below shows a model of an atom.



Which of the following statements about the model is true?

- I It was the first model of the atom.
  - II It shows that the nucleus contains protons.
  - III It shows that electrons are arranged in orbits.
  - IV It was proposed by Neils Bohr.
- A I and II only  
B III and IV only  
C I, III and IV only  
D II, III and IV only
- 2 The following statement is about a scientist.

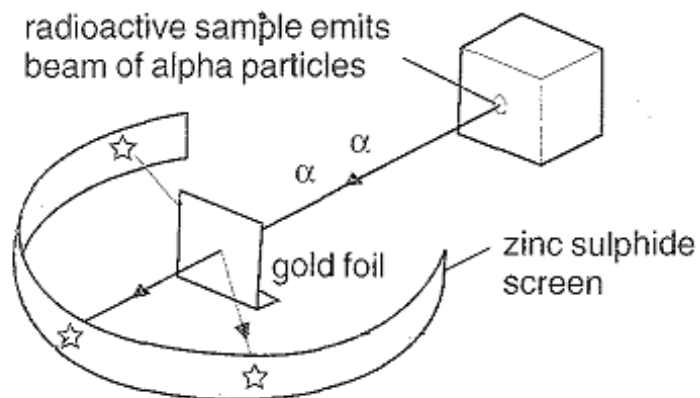
He proposed that electrons are arranged in concentric circular paths or orbits around the nucleus of an atom.

Which scientist is described in the above statement?

- A John Dalton
- B J.J. Thomson
- C Neils Bohr
- D James Chadwick

## Subjective Questions

The diagram below shows the scattering of alpha particles by a thin gold foil. This experiment was performed by Rutherford in 1909.



- (a) Why was Rutherford's experiment on the scattering of alpha particles so strange?  
\_\_\_\_\_ [1 mark]
- (b) What did he infer?  
\_\_\_\_\_ [1 mark]
- (c) What did Rutherford discover from this experiment?  
\_\_\_\_\_ [1 mark]
- (d) Based on this experiment, Rutherford proposed a model of the atom. Illustrate Rutherford's atomic model.  
\_\_\_\_\_  
\_\_\_\_\_ [2 marks]
- (e) Comment the atom that you illustrated in (d).  
\_\_\_\_\_  
\_\_\_\_\_ [2 marks]