

Chemistry 11

Name: _____

Date: _____

Block: _____

Student Notes: **THE STRUCTURE OF THE ATOM**

(Refer to Hebden pp. 139-144)

A. Early Models of the Atom**(a) The Atomic Models of the Early Greeks and Medieval Alchemists**

1. When did the earliest suggestion that atoms might exist occur?

2. Democritus expanded on the ideas of his teacher by stating:

_____3. Who rejected Democritus' idea in 4th century BC? _____

4. During the middle ages, the idea that matter existed as _____
was suggested and these were subjected to _____ and
_____. These ideas were more _____ in nature
and thus very little chemical knowledge existed.

(b) Dalton's Atomic Theory

In 1808, _____ reintroduced the idea of atoms and _____ his atomic theory on a firm _____ foundation.

Dalton's theory states:

(i) _____

(ii) _____

(iii) _____

(iv) _____

In addition to his atomic theory, Dalton made the following huge contribution to chemistry by:

(c) The Thomson Model of the Atom:

1. What happened circa 1897?

2. Draw and describe the “plum pudding model”

3. In 1909, who showed what the mass of an electron was and what was the reported mass of an electron?

_____ and _____ g

B. THE RUTHERFORD-BOHR MODEL OF THE ATOM

Summarize the contributions of the following scientists:

Henri Becquerel (1896): _____

Marie and Pierre Curie (1898): _____

The following scientist _____ was awarded the Nobel Prize in chemistry in 1908. Summarize why? _____

(b) **Correctly interpreted the nature of radioactivity** (1902)

(c) **Discovered the true nature of the alpha particle** (1908)

(d) **Discovered the atomic nucleus** (1911)

(e) **Predicted the existence of the neutron** (1920)

Summarize Rutherford's Model of the Atom

The Rutherford Model of the Atom:

Who discovered the neutron that Rutherford predicted in 1932?

_____.

Complete the following table that summarizes the properties of three major important particles that are of importance to the science of chemistry:

The Properties of the Atomic Particles				
Particle	Symbol	Charge	Molar Mass (g)	Where Found
electron				
proton				
neutron				

Summarize what the “planetary” model of electron behaviour entails:

Who and in what year that _____ came up with a simple equation that could predict the peculiar pattern of _____ which can be produced by a hydrogen atom.

Provide a summary for Bohr’s Model of the atom:

The Bohr Model of the Atom:

Bohr’s theory ran into a very serious problem. Summarize the details below:

