OER 2.1-2.3

CHE 111 - Homework - Ch 2a
Structure of the Atom I

Score: _____/50

Name: _____ Date: _____

[15 pt] 1. What major contribution to science did each of the following scientists make? In the last column place any additional information you think would be useful for studying for the test.

Scientist	**Major Contribution**	**Miscellaneous**
Democritus		
Boyle		
Lavoisier (2)		
Proust		
Dalton		
Faraday		
Arrhenius		
Goldstein		
Thomson (2)		
Rutherford (2)		
Chadwick		

[10 pt] 2. Name the Scientist who **FIRST** made the discovery, **AND** what experimental evidence **i.e. what was observed that specifically lead him the conclusion** supports these statements. Explain your answers.

(a) Mass is neither created nor destroyed in a chemical reaction

(b) The nucleus of an atom is small.

(c) The atom consists of both positive and negative charges.

(d) The nucleus of the atom is positive.

(e) The charge of an electron is negative.

[3 pt] 3. List the 4 fundamental properties of electrical charges.

(a)

(b)

(c)

(d)

[10 pt] 4. Are the following statements true or false. For the false statements explain why they are false in the space provided.

(a) Each element is characterized by the mass of its atoms, atoms of the same element have the same mass. 4(a) _____

(b) The ratio of elements in a compound are always the ratio's of small whole numbers. 4(b) _____

(c) Electrons weigh 2000 times as much as a proton. 4(c) _____

(d) The electrons in a cathode-ray tube are deflected away from a negative electrode. 4(d) _____

(e) Atoms of different elements have different masses and sizes. 4(e) _____

[6 pt] 5. Sketch **AND** describe J.J. Thomson's experiment with Cathode Ray Tubes and the (5) conclusions he made from the experiment

[6 pt] 6. Sketch **AND** describe Rutherford's experiment with α particles and the (3) conclusions he made from the experiment