



Short Essay – Five points – give two to four sentences for each.

19) Give three of the features of Dalton's Atomic Theory of 1803: \_\_\_\_\_

Multiple Choice Section. Write the letter that best corresponds to each example. Two points each.

- |                           |   |
|---------------------------|---|
| _____ 20) John Dalton     | a) ancient Roman scientist; discovered the wheel  |
|                           | b) given credit for the discovery of the electron |
| _____ 21) Lord Rutherford | c) showed the atom was mostly empty space         |
|                           | d) designed the first Crookes tube                |
| _____ 22) James Chadwick  | e) gave us the first real atomic theory           |
|                           | f) coined the term "atomos," meaning indivisible  |
| _____ 23) J. J. Thomson   | g) discovered the neutron in 1932                 |
|                           | h) performed the famous oil drop experiment       |
| _____ 24) Democritus      | i) discovered X-rays                              |

25) For six points, make a detailed drawing of Rutherford's gold foil experiment of 1911. Include the source, the target and the detector. Label everything.

Short Answer/Fill-in. Be sure to be complete here. Read what you wrote before turning it in. Three points.

26) Give the full names of three monatomic elemental gases: \_\_\_\_\_,  
\_\_\_\_\_ and \_\_\_\_\_.

27) Chlorine, bromine, and iodine all belong to the \_\_\_\_\_ group.

28) The heaviest elements are in which series? \_\_\_\_\_.

29) What is periodic about the Periodic Table of the Elements? \_\_\_\_\_  
\_\_\_\_\_.

30) The  $\text{Mg}^{+2}$  ion has \_\_\_\_\_ protons and \_\_\_\_\_ electrons.