Worksheet 5A

1) Fill in the chart for the three types of radiation:

Symbol	Charge	Relative Mass	Relative Energy

2) Draw a diagram and describe Rutherford's Experiment afterwards write down what you think we learned about the atom, these can be a bullet point list.

3) Fill in the values omitted below:

Symbol	Protons	Neutrons	Name
			Fluorine-19
	80	119	
$^{57}_{26}Fe$			
			Radium-224
	42	55	
$^{88}_{38}Sr$			
			Cobalt-60
	23	28	
$^{44}_{22}Ti$			

4) Define the term isotope. Write the atomic symbol, including mass # and atomic #, for two isotopes of uranium that exist in nature.

5) How are the number of electrons related the atomic number of the atom? How many electrons are in each of the following neutral atoms

Ar V Sr

6) Using a flow chart, make a short time line of our understanding of the atom, the only thing that needs to be included are the ideas that have been used, no need to go into detail about the individuals involved.

Mayor of Atomville

You are the campaign manager for a candidate for Atomville. Each of these candidates needs you to defend them in a public presentation. This presentation should last about 5 minutes, if it is shorter than 4 minutes or longer than 6 I will start deducting points. After the presentations we will have a class vote for who should be mayor of Atomville.

John Dalton – Developed the idea that everything is made up of atoms. However, he was a terrible public speaker, speaking in harsh tones and mumbling a lot.

Democritus – Using no technology whatsoever, he was able to figure out that everything is made of small indestructible particles. However, he was a loner who was disinterested in those around him, focusing only on his studies.

Rutherford – Developed an experiment to determine the existence of the nucleus. However, he left his homeland to pursue scientific interests, ignoring calls for him to remain in New Zealand, essentially deserting his home land.

JJ Thomson – Discovered the electron using a cathode ray tube and produced the first mass spectrometer. However, stated "The electron, may never be any use to anybody".

Questions

1. Describe your candidate to the audience, including personal history and what influences there may have been in your life.

2. How do you believe the Atom should run? (What is your theory?)

3. What devices would you have used to better understand Atomville and its residents? (How did you come to the theory you have?)

The project will be graded out of 20 points through the following grade scale:

5pts for presentation of your candidate's life

5pts for how the atom is run

5pts for devices used

5pts for professionalism