MI 132 – Imaging Principles and Equipment
Class Preparation Assignment #1
Unit 1 – Atom

Due: Monday 8/29/2022
Textbook Chapter 2 (p. 16-25)

Objectives:

1. *Compare the fundamental particles of atoms.*
2. *Define and differentiate atomic number and atomic mass number.*
3. *Describe the structure of the atom, its nucleus and electron shells, along with associated binding energy and the significance in Radiology.*
4. *Explain the process of ionization and its importance in Radiology.*

Questions:

1. Which model of the atom is most accepted today? Describe the associated fundamental particles (associated charges, location within the atom, associated weights)

2. What constitutes a neutral atom?

3. Explain the process of ionization.

4. Differentiate between atomic number and atomic mass number.

5. Identify the format used for chemical shorthand? Identify what each component designates.

6. Explain electron shells and how electrons exist within the electron shells, including how to calculate the maximum number of electrons that can exist within each shell.

7. Explain the factors that affect electron binding energy and what influence electron binding energy has on x-ray production.

8. Compare and contrast the periods and groups on the periodic table of elements.