Answer Key: What are Isotopes? Video Questions

Instructions
While watching the ACS Chemistry Basics video about isotopes, answer the following questions:

1. What are isotopes?
   Atoms of the same element with different numbers of neutrons and different masses.

2. What element did Thomson and Aston study when they discovered that the same element had different “types”?
   Neon

3. What machine did Aston invent to study isotopes, and what did he use it for?
   Mass Spectrograph; identified hundreds of different isotopes of many elements

4. Why is the mass of electrons usually ignored when determining the mass of an atom?
   Electrons are so much smaller (almost 2000x smaller) than protons and neutrons that they don’t make much of a difference in the mass

5. What part of the atom is involved in chemical reactions?
   Outer electrons

6. What part of the atom is involved in nuclear reactions?
   Particles in the nucleus (protons and neutrons)

7. What holds the positive protons together in the nucleus?
   Strong nuclear force

8. What are three types of radioactive decay?
   Alpha decay, beta decay, and gamma decay

9. What are three uses for radioactive substances?
   Determining the age of old artifacts, detecting leaks in pipes, identifying where medicine goes in your body