Chapters 2 and 4 Test Review

1. What are the three main states of matter? Describe the shape and volume of the three states of matter.
2. Why would a sandwich not be considered a substance? What does make something a substance?
3. Why is water considered a compound and not a mixture?
4. What is an element, and how does it differ from a compound?
5. Compare a heterogeneous and homogeneous mixture. How are they similar and how are they different?
6. Would salt water be considered a mixture or a compound? How do you know this?
7. Define what a physical property is, and give four examples of “physical” characteristics/changes.
8. Define what a chemical property is, and give four examples of “chemical” characteristics/changes.
9. Would cooking an egg be considered a physical or a chemical change? Explain your answer.
10. What is a precipitate?
11. Say you drop sugar into a beaker of water, and it dissolves. What is the water considered? What is the sugar considered? Is this a physical or chemical change? How do you know?
12. In the equation: Ag + S 🡪 AgS. What are the reactant(s)? The product(s)? Is this a physical or chemical change? Explain.
13. What is the Law of Conservation of Mass? Use Question 12’s equation to help explain your answer.
14. Name all three subatomic particles in an atom, and their charges.
15. Write down all four parts of Dalton’s Atomic Theory. Explain why two parts of his theory are actually incorrect.
16. The nucleus is said to be very dense in an atom. What does this mean? What components make up the nucleus, and what are their charges?
17. Explain briefly the Laws of Attraction, and how this helped Ernest Rutherford discover the nucleus.
18. Choose an element on the Periodic Table, and draw it as you see it. Label what each number represents.
19. Looking at your element, why does the bottom number most likely show up as a decimal rather than a whole number?
20. What is an isotope, and what separates one isotope of an element from another?
21. I am a mystery element with 23 protons and 21 neutrons. What is my element number? What is my mass number? Express me in the correct shorthand notation.
22. I am an isotope of Bromine with a mass of 75. How many neutrons do I have? How many protons do I have? Express me in the correct shorthand notation.
23. What is a mole? How does it, when taking atoms into consideration, unite all the elements on the Periodic Table?
24. You have 4.5 mol of Fe. How many grams of Fe is this?
25. You have 9.0 mol of H. How many atoms is this? How would this compare to having 9.0 mol of Xenon (Xe)?
26. A scientist claims that he has 90.0 grams of pure gold. How many atoms is this?
27. I have 9.5x1022 atoms of Platinum (Pt). How many grams of Platinum is this? Is this enough to make one mole? How do you know?