

## ST Pretest 1.2

1. Answer with one of the following: Thomson, Rutherford or Bohr:
  - a) His experiments led to the discovery of the electron \_\_\_\_\_
  - b) We show that a magnet affects the image of an old TV to simulate the way cathode rays were affected by magnetism in his experiment \_\_\_\_\_
  - c) Most alpha particles went right through the gold foil of his experiment \_\_\_\_\_
  - d) His model explained the thin colored lines of hydrogen's spectrum \_\_\_\_\_



### TRUE or FALSE?

2.
  - a) When an electron in a hydrogen atom gets excited and falls back, it could emit energy of a specific color. \_\_\_\_\_
  - b) Red light has less energy than blue light. \_\_\_\_\_
  - c) If the atom did not have specific energy levels, the emission spectrum of an element would look more like a rainbow. \_\_\_\_\_
3. Draw the Bohr-Rutherford diagram for:
  - a) Ne (neon)
  - b) Ca (calcium)
4. Draw the Lewis dot structure for:
  - a) Fluorine (F)
  - b) Potassium (K)
5. What is the difference between an atom and an ion?

6. Is there a difference between the neutral calcium metal in the lab and the calcium in your bones? Explain by commenting on charge and chemical properties.



7. What is the valence of ...

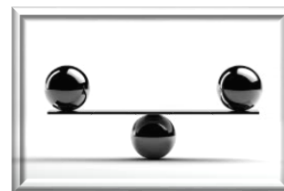
- a) Li
- b) Ca
- c) B
- d) O
- e) Br<sup>-</sup>
- f) Br

8. What must neutral magnesium do in order to become Mg<sup>2+</sup>?

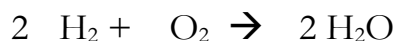
9. Draw a Bohr Rutherford diagram for neutral oxygen and then a new one for oxide(-2).

**10. Fill in the blanks:**

We balance equations because in a reaction, atoms can be rearranged but they cannot be \_\_\_\_\_ or destroyed. While balancing equations, we cannot change small numbers(subscripts), but we could add \_\_\_\_\_

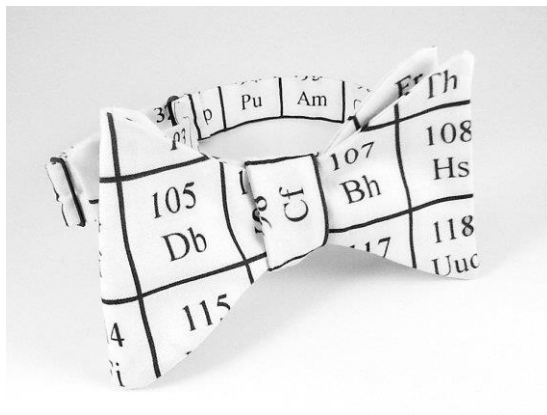


11. Draw circles to represent the molecules and atoms in the following reaction between an alkali metal and water:



12. Which family's elements have a common charge of +1?

13. In the lab, how do you tell a metalloid apart from a non-metal?



14. In the lab, how do you tell a metalloid apart from a metal?

15. Which two families of the periodic table both have lousy conductors of heat and electricity?

16. What is the common charge formed by halogens when they react with metals?

17. List three alkaline earth metals: