Practice Problems Set #2

**DIRECTIONS:**

* YOU MUST ANSWER **EVERY QUESTION** IN ORDER TO GET **ANY** CREDIT!!!
* **HIGHLIGHT EACH QUESTION NUMBER** ON YOUR NOTEBOOK PAPER SO I CAN QUICKLY SEE THAT YOU HAVE DONE ALL THE PROBLEMS. IF I CAN’T FIND AN ANSWER, YOU WON’T GET CREDIT FOR ANY OF THE PROBLEMS!!!!
* **HIGHLIGHT ANY QUESTION NUMBERS ON THIS PAGE THAT YOU WANT HELP WITH, HAVE QUESTIONS WITH, ETC‼!**

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| **Q #** | **QUESTION** |
| 1 | Why do elements like to form ions? |
| 2 | Draw a picture of what happens during atomic absorption. Write 3 sentences describing what happens. |
| 3 | Draw a picture of what happens during atomic emission. Write 3 sentences describing what happens. |
| 4 | What’s the charge on the 3 main types of radiation & what type of charge would they be attracted to? |
| 5 | Write the symbols for an alpha particle, beta particle, and a gamma particle. |
| 6 | Which radioactive particle is a Helium nucleus? Which is pure energy? Which is an electron? |
| 7 | Finish the following nuclear equation: 9943Tc → \_\_\_\_\_ + 0-1e |
| 8 | Finish the following nuclear equation: 23892U 🡪 23490Th + \_\_\_\_ |
| 9 | The half-life of Iron-59 is 44.5 days. How much of a 1.750 mg sample will remain after 243.5 days? |
| 10 | If the half life of a radioactive substance is 5 weeks, how much are you left with if you started with 85 grams and 35 days passed? |
| 11 | Do elements in the same group have the same number of valence electrons? In the same period? |
| 12 | Explain why valence electrons are the only e- that are used in any type of bonding. (Ionic, covalent) |
| 13 | What is the definition of valence electrons? |
| 14 | How many valence electrons does each of the following have: Na, Cs, Be, F, O, S, C, B |
| 15 | Label a sketch of a periodic table with the names of each group. |
| 16 | List two of each type of atom: metals, nonmetals, metalloid, and transition metals |
| 17 | How many electrons does each element need to gain or lose in order to achieve a noble gas configuration? Ca, O, F, N |
| 18 | What charge do alkali metals, alkaline earth metals, halogens, and noble gases like to have? (example, alkali metals like to have +1 charge) |
| 19 | Sketch the periodic table - draw an arrow pointing from lowest ionization energy towards highest. |
| 20 | Rank the atoms from lowest to highest ionization energy: Na, F, Fr, Ca, Fe, S |
| 21 | Sketch the periodic table - draw an arrow pointing from lowest electronegativity towards the highest. |
| 22 | Rank the following atoms from lowest to highest electronegativity: Na, F, Fr, Ca, Fe, S |
| 23 | Draw a sketch of a periodic table and draw an arrow pointing from smallest to largest atomic radius. |
| 24 | Rank the following atoms from smallest to largest atomic radius: Na, F, Fr, Ca, Fe, S |
| 25 | What are the three main type of bonds? |
| 26 | What kind of elements are needed to form each type of bond (meaning metals or nonmetals) |
| 27 | Identify the following as ionic, covalent, or metallic compounds CaO, CH4, Zn, Na2SO4 |
| 28 | Describe how to name ionic compounds |
| 29 | Describe how to name covalent molecules |
| 30 | Name the following compounds. CuCl2 K2S Al2O3  CaO Na2SO4 |
| 31 | Name the following molecules PCl5 H2O CI4 C6H12O6 |