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| Fall Final Exam Practice Problems-CHUNK#3 – Topics 16-24 | | |
| Topic | Q | Question |
| **16** | 1 | The half-life of Iron-59 is 44.5 days. How much of a 1.750 mg sample will remain after 243.5 days? |
| 2 | If the half life of a substance is 5 weeks, what % is left after 20 weeks? |
| 3 | The half life of a substance is 12 days. How much did you start with if you have 9.3 grams left after 4 weeks? |
| 4 | The half-life of a sample is 13 days. How much of a 50 g sample will remain after 567.5 days? |
| **18** | 5 | What charge do alkali metals, alkaline earth metals, halogens, noble gases like to have? (example, alkali metals like to have +1 charge) |
| 6 | How many valence e- does each of these have: Na, Cs, Be, F, O, S, C, B |
| 7 | Label a sketch of a periodic table with the names of each group. |
| 8 | List two of each type of atom: metals, nonmetals, metalloid, and transition metals |
| **19** | 9 | Draw a sketch of a periodic table and draw an arrow pointing from lowest ionization energy towards the highest. |
| 10 | Rank the atoms from lowest to highest ionization energy:  Na, F, Fr, Ca, Fe, S |
| 11 | Draw a sketch of a periodic table and draw an arrow pointing from lowest electronegativity towards the highest. |
| 12 | Rank the following atoms from lowest to highest electronegativity:  Na, F, Fr, Ca, Fe, S |
| 13 | Draw a sketch of a periodic table and draw an arrow pointing from smallest to largest atomic radius. |
| 14 | Rank the following atoms from smallest to largest atomic radius:  Na, F, Fr, Ca, Fe, S |
| **20** | 15 | Write out the formulas for: Carbonate, Phosphate, Iron (III), Nitrate |
| **21** | 16 | Describe how to name ionic compounds vs covalent molecules |
| 17 | Name the following: N4O10  P4S10 CuCl2 CCl4 C5I   Al2O3  ZnSO4 NH4NO2 Ca(ClO2)2 |
| **22** | 18 | Write the formula for the following: Gallium Oxide,  Calcium Chloride, Ammonium Phosphite, Calcium Perioxide |
| 19 | Write the formulas: diphosphorus monoxide, tetrasulfur trifluoride, nitrogen tetrahydride |
| **23** | 20 | What class of elements make up ionic bonds? Covalent bonds? Metallic bonds? |
| 21 | What is happening during an ionic bond? A covalent bond? Why do things bond in the first place??? |
| 22 | Identify the following as ionic, covalent, or metallic bonds: NaF KOH CS2 Ni H2 F2 |
| **24** | 23 | What is the definition of the octet rule? |
| 24 | What are the main exceptions to the octet rule? |
| 25 | Draw Lewis Structures for CO2, N2, O2, H2, H2O, NH3 |
| 29 | For the Lewis Structures you drew above identify which have single bonds, double bonds, triple bonds. Which have lone pairs? How many lone pairs does each one of those have? |
| 30 | Draw a Lewis structure to figure out if each compound is held together with a single bond, a double bond, or a triple bond: HCl and N2 and CO |
| **17** | 31 | Write the decay series of U-241 undergoing alpha, beta, beta, alpha decays. |
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