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: N_4O_{10} P_4S_{10} $CuCl_2$ CCl_4 C_5I Al_2O_3 $ZnSO_4$ NH_4NO_2 $Ca(ClO_2)_2$
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 CS_2 Ni H_2 F_2
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 CO_2, N_2, O_2, H_2, H_2O, NH_3
	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 N_2 and CO
17	31	Write the decay series of U-241 undergoing alpha, beta, beta, alpha decays.

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