**Final Exam Twitter Review #1**

FE1-1: A chemical bond that is formed when two atoms share valence electrons is called a(n) \_\_\_\_ bond.

- Answer: Covalent

FE1-2: What is the chemical name for the compound with the formula Na2S?

* Answer: Sodium Sulfide

FE1-3: A chemical bond in which electrons are shared unequally is a \_\_\_\_ covalent bond.

* Answer: Polar

FE1-4: A double bond occurs when \_\_\_\_ pairs of electrons are \_\_\_\_(shared/transferred) between two atoms.

* Answer: two ; shared

FE1-5: True or False: N2 is an example of a compound with a triple bond. If false, explain why.

* Answer: True

FE1-6: True or False: Hydrogen bonding results in low surface tension because it is weakest IMF. If false, identify weakest IMF.

* Answer: False ; London Dispersion Force (LDF)

FE1-7: What are the coefficients that will balance the equation: AlCl3 + NaOH --> Al(OH)3 + NaCl

* Answer: 1,3,1,3

FE1-8: What are the coefficients that will balance the equation: N2 + H2 --> NH3

- Answer: 1,3,2

FE1-9: What is the coefficient for Cl2 in the equation: Fe + Cl2 --> FeCl3

* Answer: Cl2 = 3

FE1-10: What is the coefficient for HCl in the equation: Mg + HCl --> MgCl2 + H2

* Answer: HCl = 2

FE1-11: What are the missing coefficients for the equation: Cr + Fe(NO3)2 --> Fe + Cr(NO3)3

* Answer: 2,3,3,2

FE1-12: The reaction 2 Fe + 3 Cl2 --> 2 FeCl3 is an example of which type of reaction?

* Answer: Synthesis (Combination)

FE1-13: Use the activity series chart to predict the product(s) of: Ag + KNO3 --> \_\_\_\_. If no reaction occurs, write DNR.

* Answer: Does Not React (DNR)

FE1-14: The equation 1 H3PO4 + 3 KOH --> 1 K3PO3 + 3 H2O is which type of reaction?

* Answer: Double Replacement (DR)

FE1-15: The equation 1 Mg + 2 HCl --> 1 MgCl2 + 1 H2 is an example of which type of reaction?

* Answer: Single Replacement (SR)

FE1-16: Predict the products when cobalt (III) chloride reacts with lithium hydroxide in a D-R reaction.

* Answer: LiCl + Co(OH)3

FE1-17: How many valence electrons are in an atom of phosphorus?

* Answer: 5 valence electrons

FE1-18: How many valence electrons are in an atom of magnesium?

* Answer: 2 valance electrons

FE1-19: The octet rule states that, in chemical compounds, atoms tend to achieve the electron configuration of which elements?

* Answer: Noble Gases

FE1-20: Which element does not form an ion with a charge of +1?
A) Fluorine
B) Hydrogen
C) Potassium
D) Sodium

* Answer: A) Fluorine

FE1-21: What is the chemical formula for sodium nitride?

* Answer: Na3N

FE1-22: A molecule with a single covalent bond is:
A) CO2
B) Cl2
C) CO
D) N2

* Answer: B) Cl2

FE1-23: Per VSEPR, molecules keep \_\_\_ as far apart as possible.
A) pairs of valence e-
B) inner shell e-
C) mobile e-
D) terminal atoms

* Answer: A) pairs of valence e-

FE1-24: The shape (molecular geometry) of methane, CH4, is \_\_\_\_.

* Answer: Tetrahedral

FE1-25: Which of the following covalent bonds is most polar?
A) H-F
B) H-C
C) H-H
D) H-N

* Answer: A) H-F

FE1-26: Which forces of intermolecular attraction are the strongest?
A) Dipole-Dipole
B) London Dispersion
C) Hydrogen Bonding
D) Ionic Bond

* Answer: Ionic Bond

FE1-27: What causes dipole-dipole?
A) Sharing e- pairs
B) Attractions btwn polar molec
C) Covalently bonded H to e-

D) Attractions btwn ions

- Answer: B) Attractions between polar molecules

FE1-28: What is the VSEPR shape (molecular geometry) of carbon monoxide?

- Answer: MG = Linear

FE1-29: Carbon dioxide has what VSEPR shape and polarity:
A) Bent ; Non-Polar
B) Linear ; Polar

C) Bent ; Polar

D) Linear ; Non-Polar

* Answer: D) Linear ; Non-Polar

FE1-30: What is the VSEPR shape (molecular geometry) of nitrogen trichloride?

* Answer: MG = Trigonal Pyradmidal

FE1-31: In the reaction \_\_CO + \_\_O2 --> \_\_CO2 , what is the RATIO of moles of oxygen TO moles to CO2?

* Answer: 1:2

FE1-32: How many moles of aluminum are needed to react completely with 1.2 mol of FeO?

* Answer: 0.80 mol Al

FE1-33: At STP, how many liters of oxygen will react with 3.6 liters of hydrogen?    2 H2 + 1 O2 --> 2 H2O

* Answer: 1.8 L O2

FE1-34: How many grams of O2 are produced if 11.5 g NO2 are formed?    \_\_Pb(NO3)2 --> \_\_PbO + \_\_NO2 + \_\_O2

* Answer: 2,2,4,1 🡪 2.00g O2

FE1-35: How many grams of PH3 are formed if 6.2 g P4 and 4.0 g H2 react: 1 P4 + 6 H2 --> 4 PH3

* Answer: LR/ER 🡪 6.8g PH3

FE1-36: Which is true if 12 mol CO & 12 mol Fe2O3 react? CO + Fe2O3 --> Fe + CO2
A) LR=CO;8.0mol Fe
B) LR=CO;3.0mol CO2
C) LR=Fe2O3;24mol Fe

* Answer: A) LR=CO ; 8.0mol Fe

FE1-37: What is % yield if 9.9 g Pb(NO3)2 is heated & actually produces 5.5 g of PbO?    2 Pb(NO3)2 --> 2 PbO + 4 NO2 + 1 O2

* Answer: LR/ER/% Yield 🡪 82.5% Yield

FE1-38: What are standard temperature and pressure conditions for gases? In Celcius and atm, respectively.

* Answer: 0°C ; 1.00 atm

FE1-39: If 3.00 L of helium at 20.0° C is allowed to expand to 4.40 L, what is the new temperature, in Celcius?

* Answer: Charles’ Law 🡪 157°C

FE1-40: If temperature is kept constant, the relationship between pressure and volume is \_\_\_\_\_.

* Answer: Boyle’s Law 🡪 Indirect/Inverse Relationship

FE1-41: If pressure is kept constant, the relationship between temperature and volume is \_\_\_\_\_.

* Answer: Charles’ Law 🡪 Direct Relationship

FE1-42: One way to increase pressure of gas is to \_\_\_.
A) Decrease temp
B) Increase volume
C) Increase # of particles
D) Lower K.E. of molec

* Answer: C) Increase # of gas particles

FE1-43: If pressure of a gas is increased and volume is kept constant, what will happen to temperature?

* Answer: Gay-Lussac’s Law 🡪 Direct Relationship 🡪 Temp Increases

FE1-44: What mass of water is produced from 2.0 mol of H2 given: \_\_H2 + \_\_O2 --> \_\_H2O

* Answer: 2,1,2 🡪 36g H2O

FE1-45: How many grams of Cu form in a reaction of 51g of Al: \_\_Al + \_\_CuSO4 --> \_\_Al2(SO4)3 + \_\_Cu

* Answer: 2,3,1,3 🡪 180g Cu

FE1-46: 16 g of CH4 reacts and actually produces 41 g CO2. What is the % yield of the reaction: \_\_CH4 + \_\_O2 --> \_\_H2O + \_\_CO2

* Answer: 1,2,2,1 🡪 93.4% Yield