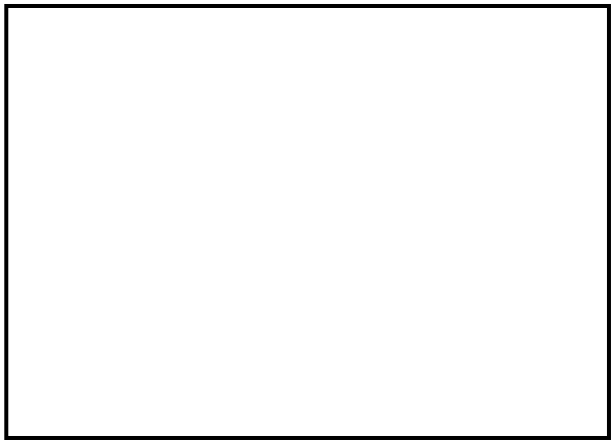
Group Name_____

The questions below pertain to the stations that individuals in your large group should have studied. Answer each question using the information gathered by the members of your large group.

1. In the box below, draw a particulate representation of AgBr(aq). K_{sp} for AgBr is 7.7×10^{-13}.



2. In the box below, draw a particulate representation of $C_2H_4(g)$.

3. Answer the following questions about both your drawings (#1-2):
    a. Does the diagram represent an element substance (or substances) or a compound substance or substances?
    b. Does the diagram represent a pure substance or a mixture?
    c. What type(s) of intramolecular forces are present in the diagram?
    d. What type(s) of intermolecular forces are present in the diagram?

Question	#1 - AgBr(aq)	#2 - $C_2H_4(g)$
A		
B		
C		
D		

4. Give the types of chemical reactions shown in each of the following stations.

Station #	Type of Chemical Reaction
3	
6	
10	
12	
16	

5. What change in the cell voltage would occur if $AgNO_3(aq)$ were used in the salt bridge instead of $KNO_3(aq)$ for the electrochemical cell shown on **station 10**? Explain.

6. Write the equilibrium constant expression for each of the **four** equilibrium situations shown at stations 2,4,7,9,11,15,18, & 19. Be sure to label specifically what K would be represented.

7. Make a qualitative prediction about the magnitude of each K value from the original equilibrium particulate diagrams.

8. Is the resulting solution from **station 12** acidic, basic, or neutral when the reaction is complete? Calculate the pH of the resulting solution to support your answer. Note: You may have to research a reference value to determine this answer.

9. Suppose each sphere on **station #6** represents $1x10^{-4}$ mol of ion and the total solution volume of the combined solutions is 500 mL. What would be the actual concentration of Ag^+ in the solution when equilibrium is reached. Note: You may have to research a reference value to determine this answer.

10. Assuming a constant volume of 1 L for the $N_2 + 3H_2 \rightarrow 2NH_3$ reaction, calculate the value of the original K_c and the value of K_c after the disturbance (a) was applied. Assume that each particulate represents a single mole.

11. Supposed diagrams #1,5,8,13,14, and 17 represented the following 6 substances:

Substance	Station #
Cu(s)	
Brass(s)	
$H_2O(l)$	
$NH_3(aq)$	
Air(g)	
AgCl(s)	

Match each substance to the appropriate station number.