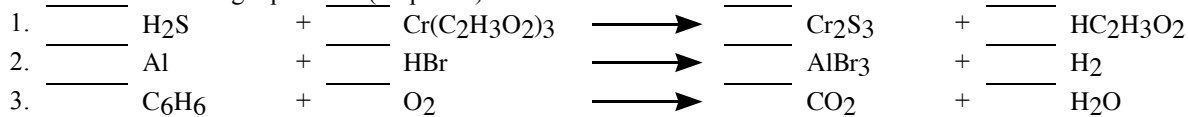


Practice Exam 3

Balance the following equations: (12 points)



For each of the following, state the type of reaction. (12 points)

4.		HC ₂ H ₃ O ₂ (aq) + CuOH(s) → CuC ₂ H ₃ O ₂ (aq) + H ₂ O(l)
5.		Al ₂ O ₃ (s) + 3H ₂ O (l) → 2Al(OH) ₃ (s)
6.		MgCl ₂ (aq) + 2AgNO ₃ (aq) → 2AgCl(s) + Mg(NO ₃) ₂ (aq)
7.		Zn(s) + 2H ₂ O(g) → Zn(OH) ₂ (s) + H ₂ (g)
8.		2C ₄ H ₁₀ (g) + 13O ₂ (g) → 8CO ₂ (g) + 10H ₂ O(g)
9.		4Al(s) + 3O ₂ (g) → 2Al ₂ O ₃ (s)

For the buffer made by mixing solutions of NH₄Cl and NH₃ answer the following questions: (3 points)

10.	What are the particles present in the solution?	
11.	What particle reacts with added H ⁺ ?	
12.	What particle reacts with added OH ⁻ ?	

13. Complete the following table (5 points)

Soluble or Insoluble?	Soluble	Insoluble
HC ₂ H ₃ O ₂		
Na ₂ S		
C ₂ H ₅ OH (polar)		
Zn(NO ₃) ₂		
CaSO ₄		

Show all work and units

14. What mass of glucose is needed to make 2.2 L of a 5% (m/v) aqueous solution?
(4 points)

Answer _____

15. What is the % (m/v) concentration of 114.6 g of NaCl dissolved in 1204.5 ml of solution?
(4 points)

Answer _____

16. How many ml of a 8.4% (v/v) solution of alcohol can be made using 1350 ml of solute in water?
(4 points)

Answer _____

17. For the following write SA if it is a strong acid, SB if it is a strong base, WA if it is a weak acid, WB if it is a weak base and Salt if it is a salt. (12 points)

HClO ₄		NH ₄ NO ₂	
H ₂ SO ₃		KF	
NH ₃		H ₂ CO ₃	

18. For the following write the pH. If it is impossible to tell write a question mark (?) (9 points)

Solution	pH	Solution	pH	Solution	pH
.00001 M HI		.001 M HClO ₄		.000001 M LiOH	
.00001 M KF		.00001 M HClO		.0001 KCl	
.00001 M NaOH		.000000000001M H ₃ O ⁺		.001 M NH ₃	

19. For the following write S if it is a strong electrolyte, W if it is a weak electrolyte and N if it is a non electrolyte. (Don't forget to check the solubility rules) (12 points)

HClO ₄		KF	
C ₁₂ H ₂₂ O ₁₁ (polar)		AgCl	
KOH		H ₂ C ₂ O ₄	

20. For the following write yes if it is a buffer and no if it is not a buffer (4 points)

HClO and NaClO		NaCl and KOH	
H NO ₃ and KNO ₃		K ₂ CO ₃ and K ₂ CO ₃	

23. What is the molar concentration of a solution made by adding 336 grams of AgNO₃ (molar mass = 169.8677g/mol) in 1,250 ml of solution? (4 points)

Answer _____

24. What volume of .55 M solution (in l) can be made with 12.25 grams of AgNO₃? (4 points)

Answer _____

How many grams of solute are needed to make a .24 M solution of AgNO₃ (molar mass = 169.8677 g/ mol) that has a volume of 1,500 cc? (4 points)

Answer _____

List 4 properties of acids and 4 properties of bases:

Define the following:

	Concentrated
	Dilute
	Saturated
	Solubility
	pH indicator
	Supersaturated
	Solution