

Name: KEY

Chemistry 121
Fall 2006, Test 2
Test Answer Sheet

I. Multiple Choice: Clearly CIRCLE the best answer.

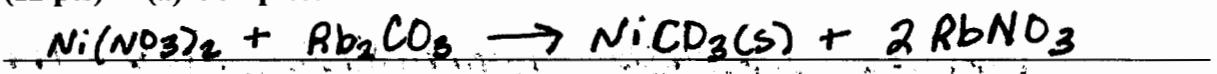
- 1. A B C **(D)**
- 2. A **(B)** C D
- 3. A B **(C)** D
- 4. A B **(C)** D
- 5. A B C **(D)**

II. Reactions, Precipitates and Calculations: Show all work on the Test Answer Sheet. Partial credit will be given for correct work. If I cannot read the work, it will not be graded.

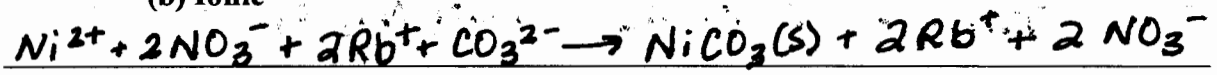
6. (18 pts) Circle the answer:

- a. **(SOL)** or IS
- b. **(SOL)** or IS
- c. SOL or **(IS)**
- d. **(SOL)** or IS
- e. **(SOL)** or IS
- f. SOL or **(IS)**
- g. SOL or **(IS)**
- h. SOL or **(IS)**
- i. **(SOL)** or IS

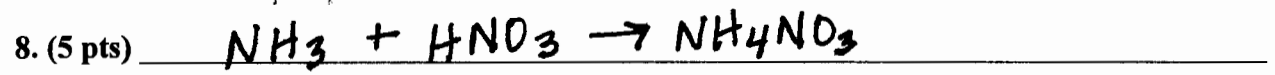
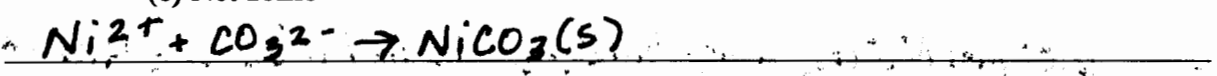
7. (12 pts) (a) Complete



(b) Ionic



(c) Net Ionic



9. (10 pts)

$CuCl_2 \cdot 4H_2O$

- 1 Cu = 63.55 g/mol
- 2 Cl = 2 x 35.45 g/mol
- 8 H = 8 x 1.008 g/mol
- + 4 O = 4 x 16.00 g/mol

204.51 g/mol

10. (10 pts)

$25.0 \text{ g } C_6H_{12}O_6 \times \frac{1 \text{ mol } C_6H_{12}O_6}{180.16 \text{ g } C_6H_{12}O_6} \times \frac{6 \text{ mol O}}{1 \text{ mol } C_6H_{12}O_6} \times \frac{6.02 \times 10^{23} \text{ atoms O}}{1 \text{ mol O}}$

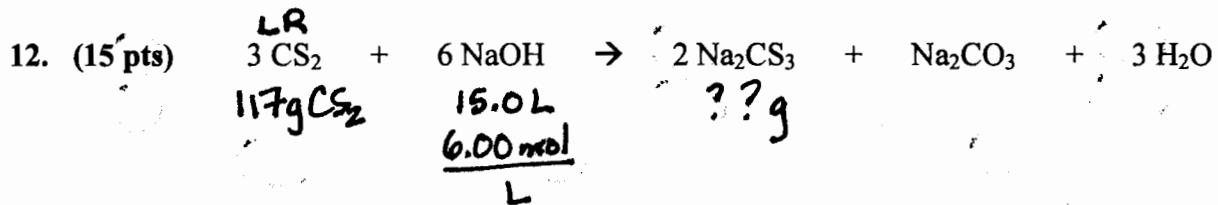
= 5.01 x 10²³ atoms O

11. (15 pts) C_xH_y 89.94% C 100 - 89.94 = 10.06% H
 Assume 100.0g

$$89.94g C \times \frac{1 \text{ mol } C}{12.01g C} = 7.488 \text{ mol } C$$

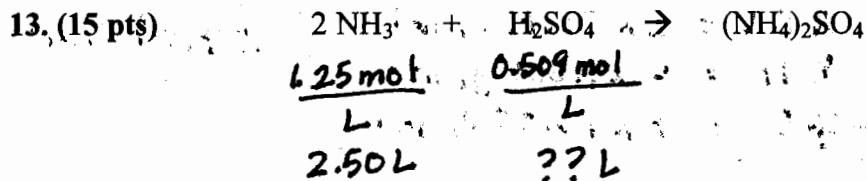
$$10.06g H \times \frac{1 \text{ mol } H}{1.008g H} = 9.980 \text{ mol } H$$

$$C_{\frac{7.488}{7.488}} H_{\frac{9.980}{7.488}} = C_1 H_{1.33} \times 3 = \boxed{C_3 H_4}$$



$$117g CS_2 \times \frac{1 \text{ mol } CS_2}{76.13g CS_2} \times \frac{2 \text{ mol } Na_2CS_3}{3 \text{ mol } CS_2} \times \frac{154.17g Na_2CS_3}{1 \text{ mol } Na_2CS_3} = \boxed{158.9g Na_2CS_3}$$

$$15.0L \times \frac{6.00 \text{ mol NaOH}}{L} \times \frac{2 \text{ mol } Na_2CS_3}{6 \text{ mol NaOH}} \times \frac{154.17g Na_2CS_3}{1 \text{ mol } Na_2CS_3} = 4.63 \times 10^3 g Na_2CS_3$$



$$2.50L \times \frac{1.25 \text{ mol } NH_3}{L} \times \frac{1 \text{ mol } H_2SO_4}{2 \text{ mol } NH_3} \times \frac{1L}{0.509 \text{ mol } H_2SO_4} = \boxed{3.07L}$$