

Please answer in the space provided. If you need more space or have a question, raise your hand. **Show work.** Do not leave your seat until all papers have been collected. If you finish early, turn your quiz face down on the desk and wait quietly until you are excused. Please use a pen. Good luck.

1) (6pts) On April 16, 1947, the S.S. Grandchamp blew up in the harbor of Texas City, Texas, and the explosion set off a chain reaction of explosions and fires that eventually killed 570 people. The original blast was from the explosive decomposition of ammonium nitrate, a compound used as a fertilizer, to give nitrogen ( $N_2$ ), oxygen ( $O_2$ ), and water. (a) Write a complete balanced chemical equation for the reaction discussed above. (b) If a shipload of ammonium nitrate ( $6.20 \times 10^4$  tons) exploded, how many tons of oxygen ( $O_2$ ) were formed (show all steps)?

2) (8pts) Calculate the molarity of a solution produced by mixing 50.0mL of 0.200M NaCl and 100.0mL of 0.100M NaCl.

3) (16pts) Balance the reaction below by placing coefficients in front of the appropriate chemical formulas. Give the balanced net ionic equation. Circle the limiting reagent. If you were given 2.109g of AuCl<sub>3</sub> and 4.000g of KI, how much gold (I) iodide (AuI) would be formed?

