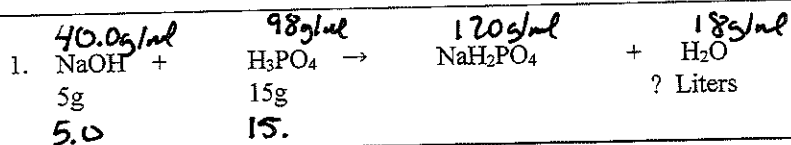


(#7-2)  
STOICHIOMETRY  
Mass, Limiting and Excess #2



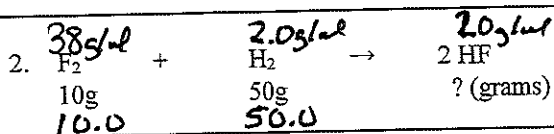
$$5\text{g} \cdot \frac{1\text{ mol}}{40\text{g}} = 0.13\text{ mol}$$

$$15\text{g} \cdot \frac{1\text{ mol}}{98\text{g}} = 0.15$$

|    |       |       |       |       |
|----|-------|-------|-------|-------|
| I. | 0.13  | 0.15  |       |       |
| S. | -0.13 | -0.13 | +0.13 | +0.13 |
| E. | 0     | 0.02  |       |       |

$$0.13\text{ mol} \cdot \frac{22.4}{1\text{ mol}} = \boxed{2.9\text{L}}$$

2 sig fig



$$10.0\text{g} \cdot \frac{1\text{ mol}}{38.0\text{g}} = 0.26\text{ mol}$$

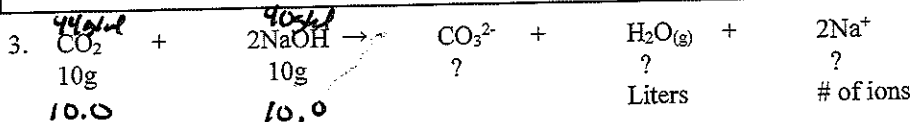
$$50.0\text{g} \cdot \frac{1\text{ mol}}{2.00\text{g}} = 25.0\text{ mol}$$

|    |       |       |       |
|----|-------|-------|-------|
| I. | 0.26  | 25    | 0     |
| S. | -0.26 | -0.26 | +0.52 |
| E. | 0     | 24.94 | +0.52 |

$$0.52\text{ mol} \cdot \frac{20.0\text{g}}{1\text{ mol}} = \boxed{10.4\text{g HF}}$$

3 sig fig

$$10\text{g} \cdot \frac{1\text{ mol}}{44\text{g}} = 0.227$$



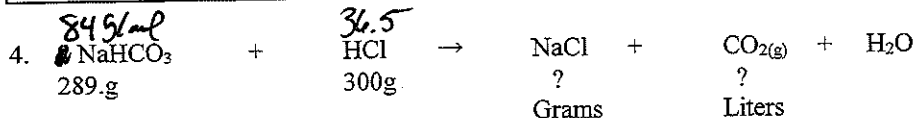
$$10\text{g} \cdot \frac{1\text{ mol}}{40\text{g}} = 0.250$$

|    |       |        |        |        |       |
|----|-------|--------|--------|--------|-------|
| I. | 0.227 | 0.250  |        |        |       |
| S. | 0.125 | -0.250 | +0.125 | +0.125 | +0.25 |
| E. | 0.105 | 0      |        |        |       |

$$0.125 \cdot \frac{22.4\text{L}}{1\text{ mol}} = \boxed{2.8\text{L}}$$

$$0.25 \cdot \frac{6.022 \times 10^{23}}{1\text{ mol}} = \boxed{-1.50 \times 10^{23}}$$

3 sig fig



|    |         |           |        |        |        |
|----|---------|-----------|--------|--------|--------|
| I. | 3.4 mol | 8.219 mol |        |        |        |
| S. | -3.440  | -3.440    | +3.440 | +3.440 | +3.440 |
| E. | 0       | 4.78      |        |        |        |

$$289\text{g} \cdot \frac{1\text{ mol}}{84\text{g}} = 3.4\text{ mol}$$

$$300\text{g} \cdot \frac{1\text{ mol}}{36.5\text{g}} = 8.219\text{ mol}$$

$$3.44\text{ mol} \cdot \frac{58.5\text{g}}{1\text{ mol}} = 201.2\text{g NaCl}$$

$$3.44 \cdot \frac{22.4\text{L}}{1\text{ mol}} = 77.05\text{L}$$

4 sig fig