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$$\begin{array}{l} 1a) \quad \text{Li} = 7 \\ \quad \quad \text{Cl} = 35.5 \end{array}$$

$$\text{1 mole of LiCl} = \boxed{42.5 \text{ g}}$$

$$1b) \quad .5 \text{ mole LiCl weighs} = .5 \times (42.5 \text{ g}) = \boxed{21.25 \text{ g}}$$

$$1c) \quad 2 \text{ moles LiCl weighs} = 2 \times (42.5 \text{ g}) = \boxed{85 \text{ g}}$$

$$\begin{array}{l} 2a) \quad \text{N} = 14 \\ \quad \quad 4 \text{ H} = 4 \\ \quad \quad \text{Cl} = 35.5 \end{array}$$

$$\text{1 mole of NH}_4\text{Cl} = \boxed{53.5 \text{ g}}$$

$$2b) \quad .15 \text{ mole of NH}_4\text{Cl weighs} = .15 \times (53.5 \text{ g}) = \boxed{8.025 \text{ g}}$$

$$2c) \quad 100 \text{ millimoles of NH}_4\text{Cl weighs} = 100 \times (53.5 \text{ mg}) = 5,350 \text{ mg} \\ = \boxed{5.35 \text{ g}}$$

$$\begin{array}{l} 3a) \quad 6 \text{ C} = 72 \\ \quad \quad 12 \text{ H} = 12 \\ \quad \quad 6 \text{ O} = 96 \end{array}$$

$$\text{1 mole of C}_6\text{H}_{12}\text{O}_6 = \boxed{180 \text{ g}}$$

$$3b) \quad .3 \text{ mole of C}_6\text{H}_{12}\text{O}_6 \text{ weighs} = .3 \times (180 \text{ g}) = \boxed{54 \text{ g}}$$

$$3c) \quad 5 \text{ millimoles of C}_6\text{H}_{12}\text{O}_6 \text{ weighs} = 5 \times (180 \text{ mg}) = 900 \text{ mg} \\ = \boxed{.9 \text{ g}}$$