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Unit 1 - Atomic Structure and Properties - Free Response V

Test Question _____ **Name:** _____

(a) A 4.346g sample of a compound containing only carbon, hydrogen, and oxygen was burned in excess oxygen gas. 9.880 g of carbon dioxide and 4.044g of water were produced.

I. Find the mass of Carbon, Hydrogen, and Oxygen in the original sample.

II. Find the empirical formula of the compound.

III. Find the molecular formula for this compound if the molar mass is known to be 116.18 g/mol.

(b) A mixture contains 19.8 g of Li_3N and 3.81 g of some impurities. Calculate the percent, by mass, of Li_3N in mixture.

IV. How many carbon atoms are contained in a 952 g sample of $\text{C}_6\text{H}_{12}\text{O}_6$?