141) $1.20\text{g } CO_2 \times \frac{1\text{mole } CO_2}{44.01\text{g } CO_2} \times \frac{1\text{mole C}}{1\text{mole } CO_2} \times \frac{1\text{mole } C_{24}H_{30}N_3O}{24\text{mole C}}$

$\times \frac{376.51\text{g } C_{24}H_{30}N_3O}{1\text{mole } C_{24}H_{30}N_3O} \times \frac{0.428\text{g } C_{24}H_{30}N_3O}{1.00\text{g sample}} \times 100 =$

$43.8\% \; C_{24}H_{30}N_3O$

145) $453\text{g Fe} \times \frac{1\text{mole Fe}}{55.85\text{g Fe}} \times \frac{1\text{mole } Fe_2O_3}{2\text{mole Fe}} \times \frac{159.70\text{g } Fe_2O_3}{1\text{mole } Fe_2O_3} =$

$648\text{g } Fe_2O_3$

$\text{mass \% } Fe_2O_3 = \frac{648\text{g}}{752\text{g}} \times 100 = 86.2\%$

147) C _ H _ E

assume 1 mole Vitamin A $\left(286.4 \frac{\text{g}}{\text{mol}}\right)$

$C: 286.4\text{g vitamin A} \times \frac{83.8\text{g C}}{100\text{g vitamin A}} \times \frac{1\text{mole C}}{12.01\text{g C}} =$

20.00 mole C

$H: 286.4\text{g vitamin A} \times \frac{10.5\text{g H}}{100\text{g vitamin A}} \times \frac{1\text{mole H}}{1.01\text{g H}} =$

30.00 mole H

$20(12.01) + 30(1.01) + 1(x) = 286.4 \frac{\text{g}}{\text{mol}}$

$X = 16.0 \frac{\text{g}}{\text{mol}} = \text{Oxygen}$ $\quad C_{20}H_{30}O$