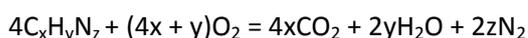**Task:**

0.90 g of an orgamic compound containing only carbon, oxgen& nitrogen on combustion gives 1.1 g of CO2 & 0.3 g of water.What is %C, %H and % N in the organic compound?

Solution:
"containing only carbon, **oxgen&amp**; nitrogen" – Maybe you meant **hydrogen** instead of oxygen?

The chemical equation for combusting reaction is

$$4C_xH_yN_z + (4x + y)O_2 = 4xCO_2 + 2yH_2O + 2zN_2$$

Let's find the amount of CO_2 and H_2O

$$n(mol) = m(g) / MW(g/mol)$$

$MW(CO_2) = MW(C) + 2MW(O) = 12 + 2 \cdot 16 = 44$ g/mol
$MW(H_2O) = 2MW(H) + MW(O) = 2 \cdot 1 + 16 = 18$ g/mol
$n(CO_2) = 1.1 / 44 = 0.025$ mol
$n(H_2O) = 0.3 / 18 = 0.017$ mol

The number of moles of C is equal to the number of moles of CO_2
$n(C) = n(CO_2) = 0.025$ mol
The number of moles of H is twice the number of moles of H_2O
$n(H) = 2 \cdot n(H_2O) = 2 \cdot 0.017 = 0.034$ mol

The mass of C is
$m(C) = n(C) \cdot MW(C) = 0.025 \cdot 12 = 0.300$ g
The mass of H is
$m(H) = n(H) \cdot MW(H) = 0.034 \cdot 1 = 0.034$ g

The mass of N is
$m(N) = m(compound) – m(C) – m(H) = 0.9 – 0.3 – 0.034 = 0.566$ g

The yield of C, N, H is
$w(C) = m(C) / m_{compound} \cdot 100\%$
$w(C) = 0.300 / 0.9 \cdot 100\% = 33.3$ %
$w(H) = m(H) / m_{compound} \cdot 100\%$
$w(H) = 0.034 / 0.9 \cdot 100\% = 3.8$ %
$w(N) = m(N) / m_{compound} \cdot 100\%$
$w(N) = 0.566 / 0.9 \cdot 100\% = 62.9$ %

Answer: $w(C) = 33.3$ %; $w(H) = 3.8$ %; $w(N) = 62.9$ %