

2 Atoms, molecules and moles — Part 1

— Answers

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Work through these after trying the questions yourself.

2.1 $6.02 \times 10^{23} \text{ mol}^{-1}$.

2.2 (a) $2(1) + 16 = 18$ \ (b) $12 + 2(16) = 44$.

2.3 $n = m/M = 11.5/23 = 0.50 \text{ mol}$.

2.4 $M = 18$, so $n = 36/18 = 2.0 \text{ mol}$.

2.5 $A_r = (0.5 \times 79) + (0.5 \times 81) = 80$.

2.6 $0.50 \times 6.02 \times 10^{23} = 3.01 \times 10^{23} \text{ molecules}$.

2.7 $n = m/M = 8.8/44 = 0.20 \text{ mol}$ of CO_2 ; molecules $= 0.20 \times 6.02 \times 10^{23} = 1.2 \times 10^{23}$; each CO_2 has 2 oxygen atoms, so 2.4×10^{23} oxygen atoms.