

A Level Chemistry A
H432/03 Unified chemistry

Question Set 12

- 1 These short questions are from different areas of chemistry.
- (a) Explain why a CF_4 molecule has polar bonds but does **not** have an overall dipole. [2]
- (b) Explain why a small proportion of molecules in water have a relative molecular mass of 20. [1]
- (c) What is the partial pressure of O_2 (in Pa) in a gas mixture containing 21% O_2 by volume and with a total pressure of $1.0 \times 10^5 \text{ Pa}$?
- partial pressure of $\text{O}_2 = \dots\dots\dots \text{ Pa}$ [1]
- (d) What mass of carbon dioxide (in g) is formed by the complete combustion of 42.0 m^3 (measured at RTP) of propane? [2]
- (e) A reaction is first order with respect to H^+ .
At a pH of 1, the initial rate is $2.4 \times 10^{-3} \text{ mol dm}^{-3} \text{ s}^{-1}$.
What is the initial rate at a pH of 3?
- initial rate = $\dots\dots\dots \text{ mol dm}^{-3} \text{ s}^{-1}$ [1]
- (f) What is the number of oxygen atoms in 4.26 g of P_2O_5 ? [2]

Total Marks for Question Set 12: 9

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