

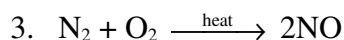
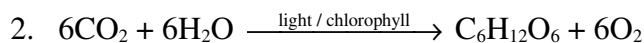
Year 12 Chemistry

Quick Quiz 1: Environmental Chemistry

SOLUTIONS

1.

- (a) NO_3^-
- (b) PH_3
- (c) H_2S



4. So that they can be absorbed by plant roots.

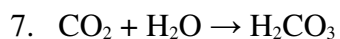
5.

(a) Since HCl is a strong monoprotic acid, $[\text{H}^+] = [\text{HCl}]$

$$\begin{aligned}\text{pH} &= -\log[\text{H}^+] \\ &= -\log(6 \times 10^{-6}) \\ &= 5\end{aligned}$$

(b) $\text{pOH} = 14 - \text{pH}$
 $= 14 - 5$
 $= 9$

6. $[\text{H}^+] = 10^{-\text{pH}}$
 $= 10^{-7.02}$
 $= 9.55 \times 10^{-8} \text{ mol L}^{-1}$



Carbon dioxide naturally occurs in the atmosphere. It reacts with rainwater to make carbonic acid, which partially ionises to form H^+ ions, lowering the pH of the water.

8. 5.6

9. (other possibilities exist, these are two examples)

Causes mobilisation in the soil (leaching) of toxic cations such as aluminium, lead and cadmium
Reduces the pH in lakes and rivers, reducing fish populations