ACIDS BASES AND INDICATORS MARKING SCHEME

1. 1990 Q21 P1A

Dilute H_2S0_4 is more ionized than concentrated H_2SO_4

2. 1992 Q6 P1

B = strongly acid, C = weakly acid D = strongly basic / Alkaline

3. 1994 Q9 P1

NH_4 it is a proton donor or H in the reaction / because it donates a proton to the $H_2O_{(l)}$ give a proton to ammonia.

4. 1997 Q17 P1

- H_2O (l) – It accepts a proton (H+) forward r x n

5. 1998 Q12 P1

Strong acid – one which is fully dissociated when in water eg. HCL, HBr
Weak acid - one which is partially dissociated when in water eg.CH_3COOH

6. 1998 Q24 P1

Sting from a bee contains an acid which causes irritation $NaHCO_3$ being alkaline neutralizes the acid

7. 1999 Q3 P1

The blue crystals turn into a white powder ,Concentrated H_2SO_4 removes water of crystallization or is a dehydrating agent

8. 1999 Q1 P2

$Mg_{(s)} + 2HCL\ (aq) \longrightarrow MgCl_2 + H_{2\ (g)}$ $-{}^1/_2$ mark if states are missing

9. 2000 Q27 P1

It reacts with $NaHCO_3$ to form CO_2 which causes the dough to rise.

10. 2001 Q26 P1

To neutralize soil acidity/ increase soil PH
To be used as fertilizer / Add Ca^{2+} to the soil

11. 2003 Q7 P1

HCl is a strong acid hence fully ionizes. Ethanoic acid is a weak acid hence partially ionized.

12. 2003 Q18 P1

a) SO_4^{2-} , Sulphate ion
b) $Ba^{2+}\ (aq) + SO_4^{2+} \longrightarrow BaSO_4(s)$
c) $Zn\ (NH_3)_4^{2+}$

13. 2003 Q1d P2

Both must be present and correct, do not accept one

$Al(OH)_3(s) + OH^-(aq) \longrightarrow ALO_2(aq) + 2H_2O(l)$

14. 2004 Q8 P1

a) (i) $KOH_{(l)}$

b) Plants need potassium on a large-scale macro scale therefore the ash contains mainly K_2O or potassium compound.

15. 2004 Q2a P2

(a) (i) hydrogen gas / H_2

(ii) $Ca(OH)_2$ is slightly soluble in water // only a few OH^- are produced in solution

(iii) It is used for testing presence of CO_2 used in prep. Of ammonia // calcium oxide

16. 2006 Q19 P1

Anti-acid (treatment of acid indigestion) (1 mark)

17. 2006 Q24 P1

a)

Acidic	Basic
Orange	Pink

(1 mark)

b) The PH of 0.1 M KOH is higher than that 0.1 M aqueous ammonia.

KOH is strongly dissociated in solution (1 mark)

18. 2007 Q5 P1

The product from nettle plant is acidic aqueous ammonia solution being basic neutralize the acidic product.

19. 2007 Q19 P1

(a) O^{2-}

(b) $[Zn(OH)_4]^{(2-)}$

20. 2008 Q3 P1

No	Gas	Test	Observation
I	Chlorine		The red litmus pare turns v the litmus paper is bleached
II	Acidified must be the	Put a filter paper dipped in acidified potassium dichrom (VI) into the gas	
III			The bromine water is decolorized

21. 2008 Q10 P1

Magnesium burns in air to form MgO and Mg_3N_2, Mg_2N_2 reacts with water to Liberate ammonia gas

$Mg_3N_2(s) + 6\ H_2O\ (I) \rightarrow 2NH_3\ (g) + Mg(OH)_2(ag)$