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Year 8 · KS3 Chemistry · GCSE foundations

Acids, Alkalis & Neutralisation

Mark Scheme

Answers and marking guidance for the Year 8 Acids, Alkalis & Neutralisation homework worksheet. Total: 77 marks.



What's inside

Section A	Key words, definitions & state symbols	Q1–Q3 · 19 marks
Section B	The pH scale, litmus & universal indicator	Q4–Q7 · 19 marks
Section C	Ions, naming salts & neutralisation in real life	Q8–Q10 · 15 marks
Section D	Word equation practice (incl. metal carbonates)	Q11–Q13 · 20 marks
Challenge	Symbol equations & the ionic equation	Q14 · 4 marks

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Section A — Key words & definitions

19 marks

Q	Answer / marking guidance	Mark
1a	**base**	1
1b	**soluble** … **alkalis**	2
1c	**hydrogen**	1
1d	**hydroxide**	1
1e	**neutral**	1
1f	**indicator**	1
1g	**salt** and **water** (either order)	2
2	**(s) → solid; (l) → liquid; (g) → gas; (aq) → aqueous (dissolved in water)** 1 mark per correct line	4
2b	**The acid is dissolved in water / it is a solution (aqueous).**	1
3	**a) True b) False c) True d) True e) False** (b) Some bases, e.g. copper oxide, do not dissolve in water. (e) Acids have pH less than 7.	5

Section B — The pH scale & indicators

19 marks

Q	Answer / marking guidance	Mark
4a	**7**	1
4b	**0 to 6 / less than 7** (accept 0–6.9)	1
4c	**8 to 14 / greater than 7**	1
4d	**acidic**	1
5	**Lemon juice – acidic; Pure water – neutral; Soap solution – alkaline; Vinegar – acidic; Oven cleaner – alkaline; Stomach acid – acidic; Baking soda solution – alkaline** 1 mark per row	7
5b	**i) stomach acid (pH 1) ii) oven cleaner (pH 13)**	2
6	**a) red b) blue c) alkaline**	3
7	**a) orange b) green c) purple**	3

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Section C — Ions, salts & real life — 15 marks

Q	Answer / marking guidance	Mark
8 i	$H^+_{(aq)}$	1
8 ii	$OH^-_{(aq)}$	1
8 iii	$K^+_{(aq)}$	1
8 iv	$Br^-_{(aq)}$	1
8b	i) hydrogen ion, H^+ ii) hydroxide ion, OH^-	2
9	sodium chloride; potassium nitrate; zinc sulfate; copper chloride; magnesium nitrate; calcium sulfate 1 mark each. Accept copper(II) chloride. Do not accept 'chlorine'.	6
10a	Baking soda solution (1). It is an alkali / pH 9, so it neutralises the acid in the sting (1).	2
10b	An alkali / a base (accept lime, calcium hydroxide, calcium oxide or calcium carbonate)	1

Section D — Word equations + Challenge — 20 + 4 marks

Q	Answer / marking guidance	Mark
11a	sodium chloride + water	2
11b	potassium sulfate	1
11c	sodium hydroxide (accept sodium oxide)	1
11d	hydrochloric acid	1
11e	copper sulfate + water	2
11f	sulfuric acid	1
11g	magnesium nitrate + water	2
12a	calcium hydroxide + hydrochloric acid → calcium chloride + water	2
12b	magnesium oxide + sulfuric acid → magnesium sulfate + water	2
12c	magnesium hydroxide + hydrochloric acid → magnesium chloride + water	2
	Q12: 1 mark for correct reactants, 1 mark for correct products.	
13a	water + carbon dioxide (either order)	2
13b	sodium sulfate … carbon dioxide	2
14a	Base: $Zn(OH)_2$ / zinc hydroxide; Salt: $ZnCl_2$ / zinc chloride	2
14b	NaCl	1
14c	H_2O	1

Teacher note: accept correct alternative spellings (sulphate/sulphuric). Word equations must use an arrow; do not credit chemical symbols in place of names in Q11–Q13. Suggested grade bands: 65–77 Excellent · 50–64 Good · 35–49 Developing · below 35 Revisit notes.

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