

Formulae Mark Scheme



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Section 1: Formulae of Ionic Compounds

1. For each of the compounds listed below, write the correct chemical formula.

a) Sodium chloride. NaCl	b) Potassium bromide KBr
c) Magnesium oxide MgO	d) Lithium fluoride LiF
e) Calcium sulfide. CaS	f) Sodium oxide. Na₂O
g) Magnesium chloride. MgCl₂	h) Potassium sulfide. K₂S
i) Calcium iodide CaI₂	j) Aluminium chloride. AlCl₃
k) Sodium hydroxide. NaOH	l) Sodium hydrogencarbonate. NaHCO₃
m) Calcium carbonate. CaCO₃	n) Magnesium sulfate. MgSO₄
o) Lithium hydroxide. LiOH	p) Calcium hydroxide. Ca(OH)₂
q) Aluminium nitrate. Al(NO₃)₃	r) Ammonium chloride. NH₄Cl
s) Ammonium sulfate. (NH₄)₂SO₄	t) Aluminium sulfate. Al₂(SO₄)₃
u) Magnesium nitrate. Mg(NO₃)₂	v) Ammonium carbonate. (NH₄)₂CO₃
w) Aluminium hydroxide. Al(OH)₃	x) Calcium phosphate. Ca₃(PO₄)₂
y) Aluminium carbonate. Al₂(CO₃)₃	z) Ammonium phosphate. (NH₄)₃PO₄

Section 2: Formulae of Transition Metal Compounds

2. For each of the compounds listed below, write the correct chemical formula.

a) Iron(II) chloride. FeCl_2	b) Copper(II) oxide. CuO
c) Iron(III) bromide. FeBr_3	d) Copper(I) oxide. Cu_2O
e) Lead(II) iodide. PbI_2	f) Nickel(II) chloride. NiCl_2
g) Iron(III) oxide. Fe_2O_3	h) Copper(I) sulfide. Cu_2S
i) Lead(IV) oxide. PbO_2	j) Manganese(II) sulfide. MnS
k) Chromium(III) chloride. CrCl_3	l) Cobalt(II) bromide. CoBr_2
m) Copper(II) sulfate CuSO_4	n) Iron(II) hydroxide. $\text{Fe}(\text{OH})_2$
o) Lead(II) nitrate. $\text{Pb}(\text{NO}_3)_2$	p) Iron(III) nitrate. $\text{Fe}(\text{NO}_3)_3$
q) Nickel(II) carbonate. NiCO_3	r) Copper(II) hydroxide. $\text{Cu}(\text{OH})_2$
s) Iron(II) sulfate. FeSO_4	t) Cobalt(II) nitrate. $\text{Co}(\text{NO}_3)_2$
u) Iron(III) hydroxide. $\text{Fe}(\text{OH})_3$	v) Lead(IV) chloride. PbCl_4
w) Manganese(IV) oxide. MnO_2	x) Iron(III) sulfate. $\text{Fe}_2(\text{SO}_4)_3$
y) Chromium(III) sulfate. $\text{Cr}_2(\text{SO}_4)_3$	z) Copper(II) phosphate. $\text{Cu}_3(\text{PO}_4)_2$

Section 3: A Mixture of Ionic and Transition Metal Formulae

3. For each of the compounds listed below, write the correct chemical formula.

a) Iron(II) oxide. FeO	b) Sodium sulfate. Na₂SO₄
c) Copper(II) bromide. CuBr₂	d) Potassium carbonate. K₂CO₃
e) Lead(II) carbonate. PbCO₃	f) Magnesium bromide. MgBr₂
g) Chromium(III) oxide. Cr₂O₃	h) Ammonium bromide. NH₄Br
i) Iron(III) sulfide. Fe₂S₃	j) Calcium nitrate. Ca(NO₃)₂
k) Nickel(II) hydroxide. Ni(OH)₂	l) Aluminium sulfide. Al₂S₃
m) Copper(II) sulfate. CuSO₄	n) Cobalt(II) sulfate. CoSO₄
o) Lithium sulfate. Li₂SO₄	p) Manganese(IV) sulfide. MnS₂

(Total for Question 3 is 16 marks)

Section 4: Formulae of Covalent Compounds

4. For each of the covalent compounds listed below, write the correct chemical formula.

a) Carbon dioxide. CO₂	b) Carbon monoxide. CO
c) Sulfur dioxide. SO₂	d) Sulfur trioxide. SO₃
e) Nitrogen monoxide. NO	f) Nitrogen dioxide. NO₂
g) Water. H₂O	h) Ammonia. NH₃
i) Hydrogen chloride. HCl	j) Sulfuric acid. H₂SO₄
k) Nitric acid. HNO₃	l) Carbon tetrachloride. CCl₄
m) Phosphorus trichloride. PCl₃	n) Sulfuric acid H₂SO₄

(Total for Question 4 is 14 marks)