

# COMPOUND FORMULAS

## MARK SCHEME

**Q1.** Make compound formulas from the given ions.

1 mark will be awarded for each correct formula.

	<b>Sulfate</b> $\text{SO}_4^{2-}$	<b>Nitrate</b> $\text{NO}_3^-$	<b>Carbonate</b> $\text{CO}_3^{2-}$	<b>Hydroxide</b> $\text{OH}^-$	<b>Oxide</b> $\text{O}^{2-}$	<b>Chloride</b> $\text{Cl}^-$	<b>Phosphate</b> $\text{PO}_4^{3-}$
<b>H<sup>+</sup></b>	$\text{H}_2\text{SO}_4$	$\text{HNO}_3$	$\text{H}_2\text{CO}_3$	$\text{H}_2\text{O}$	$\text{H}_2\text{O}$	$\text{HCl}$	$\text{H}_3\text{PO}_4$
<b>Ca<sup>2+</sup></b>	$\text{CaSO}_4$	$\text{Ca}(\text{NO}_3)_2$	$\text{CaCO}_3$	$\text{Ca}(\text{OH})_2$	$\text{CaO}$	$\text{CaCl}_2$	$\text{Ca}_3(\text{PO}_4)_2$
<b>Mg<sup>2+</sup></b>	$\text{MgSO}_4$	$\text{Mg}(\text{NO}_3)_2$	$\text{MgCO}_3$	$\text{Mg}(\text{OH})_2$	$\text{MgO}$	$\text{MgCl}_2$	$\text{Mg}_3(\text{PO}_4)_2$
<b>K<sup>+</sup></b>	$\text{K}_2\text{SO}_4$	$\text{KNO}_3$	$\text{K}_2\text{CO}_3$	$\text{KOH}$	$\text{K}_2\text{O}$	$\text{KCl}$	$\text{K}_3\text{PO}_4$
<b>Cu<sup>2+</sup></b>	$\text{CuSO}_4$	$\text{Cu}(\text{NO}_3)_2$	$\text{CuCO}_3$	$\text{Cu}(\text{OH})_2$	$\text{CaO}$	$\text{CuCl}_2$	$\text{Ca}_3(\text{PO}_4)_2$
<b>Al<sup>3+</sup></b>	$\text{Al}_2(\text{SO}_4)_3$	$\text{Al}(\text{NO}_3)_3$	$\text{Al}_2(\text{CO}_3)_3$	$\text{Al}(\text{OH})_3$	$\text{Al}_2\text{O}_3$	$\text{AlCl}_3$	$\text{AlPO}_4$
<b>Zn<sup>2+</sup></b>	$\text{ZnSO}_4$	$\text{Zn}(\text{NO}_3)_2$	$\text{ZnCO}_3$	$\text{Zn}(\text{OH})_2$	$\text{ZnO}$	$\text{ZnCl}_2$	$\text{Zn}_3(\text{PO}_4)_2$

(49 marks)

- Q2.** Write down the formulas of the given acids in the space provided.  
1 mark will be awarded for each correct formula.

<b>Sr. no.</b>	<b>Acid name</b>	<b>Formula</b>
<b>1.</b>	<b>Sulfuric acid</b>	$\text{H}_2\text{SO}_4$
<b>2.</b>	<b>Nitric acid</b>	$\text{HNO}_3$
<b>3.</b>	<b>Hydrochloric acid</b>	$\text{HCl}$
<b>4.</b>	<b>Ethanoic acid</b>	$\text{CH}_3\text{OOH}$
<b>5.</b>	<b>Phosphoric acid</b>	$\text{H}_3\text{PO}_4$
<b>6.</b>	<b>Carbonic acid</b>	$\text{H}_2\text{CO}_3$

(5 marks)

- Q3.** Write down the formulas of the following alkalis.  
1 mark will be awarded for each correct formula.

<b>Sr. no.</b>	<b>Alkali name</b>	<b>Formula</b>
<b>1.</b>	<b>Sodium hydroxide</b>	$\text{NaOH}$
<b>2.</b>	<b>Calcium hydroxide</b>	$\text{Ca}(\text{OH})_2$
<b>3.</b>	<b>Lithium hydroxide</b>	$\text{LiOH}$
<b>4.</b>	<b>Aluminum hydroxide</b>	$\text{Al}(\text{OH})_3$
<b>5.</b>	<b>Magnesium hydroxide</b>	$\text{Mg}(\text{OH})_2$
<b>6.</b>	<b>Potassium hydroxide</b>	$\text{KOH}$
<b>7.</b>	<b>Copper hydroxide</b>	$\text{Cu}(\text{OH})_2$
<b>8.</b>	<b>Zinc hydroxide</b>	$\text{Zn}(\text{OH})_2$

(8 marks)

**Q4.** Break the following compounds into their constituent ions.

1 mark will be awarded if both the ions are written correctly.

Compound	Positive ions	Negative ions
NaOH	Na <sup>+</sup>	OH <sup>-</sup>
HNO <sub>3</sub>	H <sup>+</sup>	NO <sub>3</sub> <sup>-</sup>
H <sub>2</sub> SO <sub>4</sub>	H <sup>+</sup>	SO <sub>4</sub> <sup>2-</sup>
CuBr <sub>2</sub>	Cu <sup>2+</sup>	Br <sup>-</sup>
Ca(OH) <sub>2</sub>	Ca <sup>2+</sup>	OH <sup>-</sup>
KNO <sub>3</sub>	K <sup>+</sup>	NO <sub>3</sub> <sup>-</sup>
MgCl <sub>2</sub>	Mg <sup>2+</sup>	Cl <sup>-</sup>
CaSO <sub>4</sub>	Ca <sup>2+</sup>	SO <sub>4</sub> <sup>2-</sup>
NaCl	Na <sup>+</sup>	Cl <sup>-</sup>
ZnSO <sub>4</sub>	Zn <sup>2+</sup>	SO <sub>4</sub> <sup>2-</sup>
Fe <sub>2</sub> O <sub>3</sub>	Fe <sup>3+</sup>	O <sup>2-</sup>

(11 marks)

**Q5.** Write the formulas of the salts formed from the given substances.

1 mark will be awarded for each correct formula.

	Sulfuric acid	Nitric acid	Hydrochloric acid
Zinc oxide	ZnSO <sub>4</sub>	Zn(NO <sub>3</sub> ) <sub>2</sub>	ZnCl <sub>2</sub>
Sodium hydroxide	Na <sub>2</sub> SO <sub>4</sub>	NaNO <sub>3</sub>	NaCl
Potassium hydroxide	K <sub>2</sub> SO <sub>4</sub>	KNO <sub>3</sub>	KCl
Calcium hydroxide	CaSO <sub>4</sub>	Ca(NO <sub>3</sub> ) <sub>2</sub>	CaCl <sub>2</sub>
Copper oxide	CuSO <sub>4</sub>	Cu(NO <sub>3</sub> ) <sub>2</sub>	CuCl <sub>2</sub>

(15 marks)