SAFETY BAY SENIOR HIGH SCHOOL

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Name ANSWERS

Year 10 Chemistry Extension End of Unit Test.

Answer Booklet

1	a	b	c	d
2	a	b	c	d
3	a	b	c	d
4	a	b	c	d
5	a	b	c	d
6	a	b	c	d
7	a	b	c	d
8	a	b	c	d
9	a	b	c	d
10	a	b	c	d
11	a	b	c	d
12	a	b	c	d
13	a	b	c	d
14	a	b	c	d
15	a	b	c	d

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N
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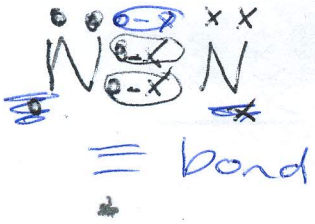
1. Draw the electron dot diagram showing the bond for N_2. (2 marks)



2. Give the name or chemical formula for the following. (4 marks)

(a) calcium bromide $CaBr_2$

(b) $FePO_4$ Iron (III) Phosphate

(c) sodium sulfite Na_2SO_3

(d) $Mg(NO_3)_2$ Magnesium nitrate

3. Balance the following equations. (4 marks)

(a) $2Mg + O_2 \longrightarrow 2MgO$

(b) $ZrO_2 + 2C + Br_2 \longrightarrow ZrBr_2 + 2CO$

(c) $2Al + 3Cl_2 \longrightarrow 2AlCl_3$

~~(d) $Zn + Cl_2 \longrightarrow H_2 + ZnCl_2$~~

4. Below are general equations showing reactions between chemicals. (10 marks)

1) Acid + Metal hydroxide produces a salt + water.

2) Acid + metal oxide produces a salt and water.

3) Acid + Carbonate produces a salt + water + carbon dioxide

4) Acid and Hydrogen carbonate produces salt + water + carbon dioxide.

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5) An acid and a metal produce a salt and hydrogen gas

Write a **word equation** and then a **balanced equation** using formulae for the following.

(a) Magnesium and sulphuric acid producing hydrogen gas and magnesium sulfate.

Word Magnesium + Sulfuric acid → hydrogen gas + magnesium Sulfate

Balanced equation. $Mg + H_2SO_4 \rightarrow H_2 + MgSO_4$

(b) Nitric acid and sodium hydroxide

Word Nitric acid + Sodium hydroxide → Sodium nitrate + water

Balanced equation. $HNO_3 + NaOH \rightarrow NaNO_3 + H_2O$

(c) Sulfuric acid and copper (II) oxide

Word ~~H_2~~ Sulfuric acid + copper oxide → Copper Sulfate + H_2

Balanced equation. $H_2SO_4 + CuO \rightarrow CuSO_4 + H_2O$

(d) Phosphoric acid and potassium hydroxide producing potassium phosphate and water.

Word phosphoric acid + potassium hydroxide → potassium phosphate + water

Balanced equation. $H_3PO_4 + 3KOH \rightarrow K_3PO_4 + 3H_2O$

(e) Hydrochloric acid and magnesium carbonate

Word hydrochloric acid + magnesium carbonate → magnesium chloride + water + Carbon dioxide

Balanced equation. $2HCl + MgCO_3 \rightarrow MgCl_2 + H_2O + CO_2$

(f) ethanoic acid and potassium carbonate.

Word ethanoic acid + pot. carb. → Pot. acetate + water + carbon dioxide.

Balanced equation. $2CH_3COOH + K_2CO_3 \rightarrow 2CH_3COOK + H_2O + CO_2$

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Below is solubility table.

Type of compound	Solubilty	Exceptions
Nitrates NO_3^-	Soluble	None
Chlorides Cl^- Bromides Br^- Iodide I^-	Soluble	Ag^+, Hg^+, Pb^+
Sulfates SO_4^{-2}	Soluble	Ca^{2+}, Ba^{2+}, Pb^{2+}, Ag^+
Carbonates CO_3^{-2}	Insoluble	Li^+, Na^+, K^+, NH_3^+
Phosphates PO_4^{-3}	Insoluble	Li^+, Na^+, K^+, NH_3^+

Use the table to work out if a precipitate would be formed when the following solutions are mixed.

(a) sodium chloride and lead (II) nitrate forming lead (II) chloride and sodium nitrate.

YES (1) $PbCl_2$

(b) barium nitrate and potassium sulfate

YES (1) $BaSO_4$

(c) lead (II) nitrate and sodium iodide

YES (1) PbI_2.

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