

# CHEMISTRY ONLINE 

## - TUITION -

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## CHEMISTRY

## PHYSICAL CHEMISTRY

| LEVEL \& BOARD: | OCR (AS - LEVEL) |
| :--- | :--- |
| TOPIC: | Compounds, Formulae \& Equations |
| PAPER TYPE: | SOLUTION 3 |
| TOTAL QUESTIONS | 07 |
| TOTAL MARKS | 17 |

## Compounds, formula \& Equation 3

Q. 1
(i) Equation for reaction between Scandium and oxygen.

$$
4 S C(s)+3 a^{2}(g) \quad 2 S C_{2} O_{3(s)}
$$

Q. 2
(i) Alkane with 19 carbons would have molecular formula as,

$$
\mathrm{C}_{19} \mathrm{H}_{40}
$$

Therefore empirical formula would be

$$
\mathrm{C}_{19} \mathrm{H}_{40} \text { as well }
$$

Q. 3

$$
\begin{aligned}
& \text { Formula of ions present in } \mathrm{K}_{2} \mathrm{SO}_{4} \\
& \mathrm{~K}^{+} \\
& \mathrm{SO}_{4}{ }^{2-}
\end{aligned} \text { Cation } \text { Anion }
$$

Reaction 1
Q. 4
(i) $\mathrm{K}(\mathrm{s})+\mathrm{H}_{2} \mathrm{O}\left(\mathrm{KOH}(e q)+\mathrm{H}_{2}(e q)\right.$

Reaction 2

$$
K(s)+N_{2(g)} \longrightarrow \quad K_{3} N_{(s)}
$$

(ii) The bonding in Potassium nitrate is ionic, resulting from Electrostatic attraction between $\mathrm{K}+$ ions and $\mathrm{NO}^{-3}$ ions as well as Covalent bond between nitrogen and oxygen atoms.

Dot/cross diagram of $\mathrm{K}_{2} \mathrm{O}_{2}$

$$
[\mathrm{K}]\left[\stackrel{+}{\dot{x}} \dot{O} x \dot{O_{\dot{x}}} \overline{\dot{x}}\right] \quad[\mathrm{K}]
$$

Q. 5

Bromine reacts with Potassium

$$
2 \mathrm{~K}_{(s)}+\mathrm{Br}_{2}(\mathrm{~g}) \longrightarrow \mathrm{KBr}(\mathrm{~s})
$$

(i) Barium Sulphate is formed So, observation would be white Crystalline Powder
(ii) $\mathrm{Ba}(\mathrm{OH})_{2(e q)}+\mathrm{H}_{2} \mathrm{SO}_{4}$ eq (b) $\mathrm{BaSO}_{4(s)}+\mathrm{H}_{2} \mathrm{O}_{(e)}$
(b)
(i) magnesium hydroxide is used to treat excessive acidity in Stomach
(i) Dot/cross diagram for Srs
Q. 7


Sodium ion
$\mathrm{Na}^{+}$


- Founder \& CEO of Chemistry Online Tuition Ltd.
- Completed Medicine (M.B.B.S) in 2007
- Tutoring students in UK and worldwide since 2008
- CIE \& EDEXCEL Examiner since 2015
- Chemistry, Physics, Math's and Biology Tutor

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