



CHEMISTRY ONLINE
— TUITION —

Phone: +442081445350

www.chemistryonlinetuition.com

Email: asherrana@chemistryonlinetuition.com

CHEMISTRY

INORGANIC CHEMISTRY

Level & Board	AQA (A-LEVEL)
TOPIC:	Group 2 Metals
PAPER TYPE:	QUESTION PAPER - 4
TOTAL QUESTIONS	10
TOTAL MARKS	23

ChemistryOnlineTuition Ltd reserves the right to take legal action against any individual/ company/organization involved in copyright abuse.

Group 2 Metals - 4

1. Which one of the following is a correct procedure for isolating a sample of hydrated copper(II) sulphate from a mixture of hydrated copper(II) sulphate and barium sulphate?

- A. filter, crystallise filtrate, dry the crystals
- B. filter, dry the solid on the filter paper
- C. add water, filter, dry the solid left on the filter paper
- D. add water, filter, crystallise filtrate, dry the crystals

(1)

2. Sulfates of the Group 2 elements from Mg to Ba have different solubilities.

Give the formula of the least soluble of these sulfates and state one use that depends upon the insolubility of this sulfate.

(2)

3. In terms of electrons, state the function of a reducing agent.

(2)

4. Zinc is similar to Group 2 metals and forms compounds containing Zn^{2+} ions.

Write an equation for the thermal decomposition of zinc carbonate to zinc oxide.

Calculate the percentage atom economy for the formation of zinc oxide from zinc carbonate in this reaction.

(3)

5. Identify a reducing agent used in the extraction of iron.
Write an equation for the redox reaction in which iron is formed from iron(III) oxide using this reducing agent.

(2)

6. State the trend in reactivity with water of the elements down Group 2 from Mg to Ba.

Write an equation for the reaction of magnesium with steam and an equation for the reaction of strontium with water.

(3)

7. Group 2 metals and their compounds are used commercially in a variety of processes and applications.

(a) State a use of magnesium hydroxide in medicine.

(1)

(b) Calcium carbonate is an insoluble solid that can be used in a reaction to lower the acidity of the water in a lake.

Explain why the rate of this reaction decreases when the temperature of the water in the lake falls.

(3)

8. Both strontium carbonate and strontium sulfate are white solids which are insoluble in water.

Strontium carbonate reacts with hydrochloric acid to produce a solution of strontium chloride.

Strontium sulfate does not react with hydrochloric acid.

Describe how you would obtain strontium sulfate from a mixture of strontium carbonate and strontium sulfate.

(2)

9. State the trend in first ionisation energies in Group 2 from beryllium to barium.

Explain your answer in terms of a suitable model of atomic structure.

(3)

10. Which one of the following is the electron arrangement of the strongest reducing agent?

- A. $1s^2 2s^2 2p^5$
- B. $1s^2 2s^2 2p^6 3s^2$
- C. $1s^2 2s^2 2p^6 3s^2 3p^5$
- D. $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2$

(1)

CHEMISTRY ONLINE
— TUITION —

I am Sorry !!!!!



DR. ASHAR RANA
M.B.B.S / MS. CHEMISTRY



CHEMISTRY ONLINE
— TUITION —

Phone: +442081445350
www.chemistryonlinetuition.com
Email: asherrana@chemistryonlinetuition.com

- 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

CONTACT INFORMATION FOR **CHEMISTRY ONLINE TUITION**

- UK Contact: 02081445350
- International Phone/WhatsApp: 00442081445350
- Website: www.chemistryonlinetuition.com
- Email: asherrana@chemistryonlinetuition.com

Address: 210-Old Brompton Road, London SW5 OBS, UK