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CHEMISTRY

INORGANIC CHEMISTRY

Level & Board	AQA (A-LEVEL)
TOPIC:	Group 2 Metals
PAPER TYPE:	QUESTION PAPER - 1
TOTAL QUESTIONS	10
TOTAL MARKS	24

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Group 2 Metals - 1

1. This question is about ion testing.

Describe how a student could distinguish between aqueous solutions of potassium nitrate, KNO_3 , and potassium sulfate, K_2SO_4 , using one simple test-tube reaction.

(3)

2. Which property of the Group 2 elements, Ca to Ba, increases with increasing atomic number?

- A. Atomic Radius
- B. Electronegativity
- C. First ionisation energy
- D. Melting Point

(1)

3. This question is about ion testing.

Describe how a student could distinguish between aqueous solutions of magnesium chloride, MgCl_2 , and aluminium chloride, AlCl_3 , using one simple test-tube reaction.

I am Sorry !!!!!

(3)

4. Which property would you expect the element radium, Ra, to possess?

- A. It forms a soluble sulfate.
- B. It does not react with water.
- C. It is a good conductor of electricity.
- D. It forms a covalent fluoride.

(1)

5. This question is about the reactions of magnesium and its compounds.

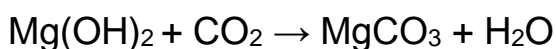
- (a) Magnesium is used in one of the stages in the extraction of titanium. Give an equation for the reaction between titanium(IV) chloride and magnesium.
State the role of magnesium in this reaction.

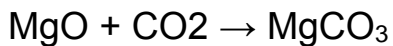
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(2)

- (b) A mixture of magnesium oxide and magnesium hydroxide has a mass of 3200 mg
This mixture is reacted with carbon dioxide to form magnesium carbonate and water.

The mass of water produced is 210 mg





Calculate the percentage by mass of magnesium oxide in this mixture.

(4)

6. An aqueous solution of a salt gives a white precipitate when mixed with aqueous silver nitrate and when mixed with dilute sulfuric acid. Which could be the formula of the salt?

- A. BaCl_2
- B. $(\text{NH}_4)_2\text{SO}_4$
- C. KCl
- D. $\text{Sr}(\text{NO}_3)_2$

(1)

7. This question is about the chemistry of some Group 2 elements.

(a) Write an equation for the reaction of calcium with water at 25 °C and predict a possible value for the pH of the solution formed.

(2)

(b) State the trend in solubility, in water, of the Group 2 sulfates from magnesium to barium.

(2)

8. Explain why the melting point of calcium sulfate is high.

(2)

9. Which compound is used to treat the symptoms of indigestion?

- A. MgO
- B. Mg(OH)₂
- C. CaO
- D. Ca(OH)₂

(1)

10. Which products are formed when magnesium reacts with steam?

- A. Magnesium hydroxide and hydrogen
- B. Magnesium hydroxide and oxygen
- C. Magnesium oxide and hydrogen
- D. Magnesium oxide and oxygen

(1)

I am Sorry !!!!!



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- 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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