Grade 10 Chemistry Worksheet: Metals

Instructions:

This worksheet is designed to assess your understanding of metals as per the Cambridge IGCSE curriculum framework. Read each question carefully and answer to the best of your ability.

Questions

Q 1) **Which of the following properties is NOT typical of metals?**

a) High electrical conductivity

b) Malleability

c) Ductility

d) Brittle at room temperature

Q 2) **Fill in the blank:**

Metals tend to _____ electrons in chemical reactions, forming positive ions known as cations.

Q 3) **True or False:**

All metals react with water to produce hydrogen gas.

Q 4) **Describe the process of electrolysis and its application in extracting metals from their ores.**

(Your answer should include at least two key points.)

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Q 5) **Which of the following metals is most likely to be extracted from its ore using electrolysis?**

a) Iron

b) Copper

c) Aluminum

d) Gold

Q 6) **Explain why alloys are often used instead of pure metals. Provide two reasons.**

Q 7) **Consider the following metals: sodium, magnesium, and copper. Arrange them in order of reactivity from most reactive to least reactive and justify your answer.**

Q 8) **A metal has a melting point of 660 °C and is commonly used in electrical wiring and cookware. Identify the metal and provide two of its properties that make it suitable for these applications.**

Q 9) **What is the significance of the reactivity series of metals in predicting the outcome of displacement reactions? Provide an example to illustrate your explanation.**

Q 10) **A student conducts an experiment to investigate the reaction of zinc with hydrochloric acid. Write a balanced chemical equation for this reaction and explain the observable changes that occur during the reaction.**

Answer Key

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QUESTION NUMBER	ANSWER
Q 1	d) Brittle at room temperature
Q 2	lose
Q 3	False
Q 4	Electrolysis is a process that uses electrical energy to break down compounds. It is used to extract metals from ores, particularly those that are too reactive to be obtained by reduction with carbon.
Q 5	c) Aluminum
Q 6	Alloys are stronger than pure metals and have improved corrosion resistance.
Q 7	Sodium > Magnesium > Copper.

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	Sodium is the most reactive while copper is the least reactive due to its position in the reactivity series.
Q **8**	The metal is Aluminum. Properties: Lightweight and excellent electrical conductivity.
Q **9**	The reactivity series helps predict which metal will displace another in a reaction. For example, zinc can displace copper in copper sulfate solution.
Q **1 0**	$Zn + \mathbf{2}\ HCl \rightarrow ZnCl_2 + H_2$. Observable changes include fizzing or bubbling due to hydrogen gas

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production and the solution becoming colorless as zinc chloride forms.

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