

Senior School, Gulshan

Class- VIII

Worksheet 1 on Alkali Metals and Ionic bonding

1. What are the physical properties of the alkali metals?
2. What would you observe if sodium metal is given in water?
3. Differentiate the observations of the reaction of sodium and potassium with water.
4. Write the chemical equation of the reaction of potassium with oxygen.
5. Describe the trend in reactivity of the group 1 elements?
6. This question is about the Lithium.
 - a) Write down the electronic configuration of lithium.
 - b) What would you observe if lithium is heated?
 - c) Compare the above reaction with the reaction of potassium.
 - d) Write down the chemical equations for the above reaction.

Lithium reacts with hydrochloric acid to form lithium chloride.

- e) Write a balanced chemical equation for the above reaction.
- f) What type of compound is lithium fluoride.
- g) Explain why lithium fluoride conducts electricity when in molten form or when dissolved in water.
- h) Why a high temperature is required to break the bonding in lithium chloride?

01.04.20

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**Worksheet 2 on Covalent bonding, metallic bonding and Chemical formulae,
equations and calculations: Part1**

1. What is covalent bonding? Explain your answer with an example.
2. What is metallic bonding? How are metallic bonds formed?
3. Why metals are malleable?
4. Why metals are good conductors of electricity?
5. Why metallic bonding in magnesium is stronger than that of sodium?
6. What is a mole?
7. Define relative atomic mass of an element.
8. Calculate the relative formula mass of CaCO_3 , ZnSO_4 and $\text{CuSO}_4 \cdot 6\text{H}_2\text{O}$.
9. Calculate the mass of 0.25 mol of $\text{Al}_2(\text{SO}_4)_3$.
10. 3.2g of copper is reacted with 0.40mol concentrated nitric acid according to the following equation.
$$\text{Cu}_{(s)} + 4\text{HNO}_{3(aq)} \rightarrow \text{Cu}(\text{NO}_3)_{2(aq)} + 2\text{H}_2\text{O}_{(l)} + 2\text{NO}_{2(g)}$$
 - a) Which reagent is in excess?
 - b) Calculate the mole of nitrogen dioxide formed.
11. A compound has the empirical formula CH_2 . If the relative formula mass is 56, work out the molecular formula.
12. What is percentage yield?

