

# 2<sup>nd</sup> Term Worksheet [2018 – 19]

Subject – Chemistry

Class – VIII

Name :

Sec. :

## Chapter – 5

### [Language of Chemistry]

#### Check Point:

[A] Answer the following:

[74]

1. Write the symbols of the following elements:

- (i) Calcium : \_\_\_\_\_
- (ii) Chlorine : \_\_\_\_\_
- (iii) Sodium : \_\_\_\_\_
- (iv) Iodine : \_\_\_\_\_
- (v) Aluminium : \_\_\_\_\_
- (vi) Mercury : \_\_\_\_\_

2. The symbol of helium is He. What does it represent?

Ans. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

3. State the combining capacities of aluminium and oxygen in  $\text{Al}_2\text{O}_3$ .

Ans. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

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\_\_\_\_\_

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\_\_\_\_\_

4. What does the formula of a substance signify?

Ans. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

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\_\_\_\_\_

5. What are monoatomic and diatomic molecules?

Ans. \_\_\_\_\_

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\_\_\_\_\_

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\_\_\_\_\_

6. Name the elements represented by the following symbols.

- |        |    |   |       |
|--------|----|---|-------|
| (i)    | K  | : | _____ |
| (ii)   | Na | : | _____ |
| (iii)  | Pb | : | _____ |
| (iv)   | Ca | : | _____ |
| (v)    | Zn | : | _____ |
| (vi)   | Sn | : | _____ |
| (vii)  | Br | : | _____ |
| (viii) | Cl | : | _____ |

[B] Write balanced chemical equation for the following word equations: [78]

1. Potassium nitrate → Potassium nitrite + Oxygen

\_\_\_\_\_

\_\_\_\_\_

2. Nitrogen + Oxygen → Nitric Oxide

\_\_\_\_\_

\_\_\_\_\_

3. Carbon + Nitric Acid → Carbon Dioxide + Nitrogen dioxide + Water  
(conc.)

\_\_\_\_\_

\_\_\_\_\_

4. Iron + Steam → Iron oxide + Hydrogen  
(ferric)

\_\_\_\_\_

\_\_\_\_\_

5. Ammonium carbonate → Ammonia + Carbon dioxide + Water

\_\_\_\_\_

\_\_\_\_\_

6. Zinc sulphide + Oxygen → Zinc oxide + Sulphur dioxide

\_\_\_\_\_

\_\_\_\_\_

7. Sodium + Water → Sodium Hydroxide + Hydrogen

\_\_\_\_\_

\_\_\_\_\_

8. Carbon dioxide + Oxygen → Carbon monoxide

\_\_\_\_\_

\_\_\_\_\_

9. Sodium phosphate + Calcium Nitrate → Sodium nitrate + Calcium phosphate

\_\_\_\_\_

\_\_\_\_\_

10. Zinc + Steam → Zinc oxide + Hydrogen

\_\_\_\_\_

\_\_\_\_\_

[C] Answer the following questions: [78]

1. What is a chemical equation?

Ans. \_\_\_\_\_

\_\_\_\_\_

2. Why a chemical equation should be balanced? State the law involved in balancing of a chemical equation.

3. What is the principle of a chemical equation?

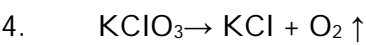
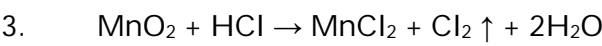
4. Write the valency of the following radicals and represent them by a putting a positive or a negative sign.

$CO_3, SO_4, Cl, PO_4, Al, Na, Ca, Mg$

[D] Balance the following chemical equations:

[78]

1.  $Al + O_2 \rightarrow Al_2 O_3$



**Keywords:** [32]

Chemical formula : \_\_\_\_\_

Chemical equation : \_\_\_\_\_

Symbol : \_\_\_\_\_

Valency : \_\_\_\_\_

**Exercise:****[79-81]****[A] Multiple Choice Questions:****[79-80]**

- (i) The symbol of nitrogen is  
 (a) N (b) N<sub>2</sub>  
 (c) Ni (d) none of these
- (ii) The valency of hydrogen is  
 (a) 1 (b) 2  
 (c) 3 (d) 4
- (iii) The correct formula of sodium oxide is  
 (a) NaO (b) Na<sub>2</sub>O  
 (c) NaO<sub>2</sub> (d) Na<sub>2</sub>O<sub>3</sub>
- (iv) The principle involved in a chemical equation is  
 (a) law of conservation of mass  
 (b) law of constant proportion  
 (c) law of reciprocal proportion  
 (d) none of these
- (v) Limitation of chemical equation is  
 (a) conditions for the reacting  
 (b) knowledge of products and reactants  
 (c) the molecular formulae of reactants and products  
 (d) the masses of reactants and products

**[B] Fill in the blanks:****[27]**

- NaCl + \_\_\_\_\_ → \_\_\_\_\_ ↑ + NaNO<sub>3</sub>
- FeSO<sub>4</sub> + \_\_\_\_\_ → Fe (OH)<sub>2</sub> ↓ + \_\_\_\_\_
- Al<sub>2</sub>O<sub>3</sub> + \_\_\_\_\_ → 2AlCl<sub>3</sub> ↓ + \_\_\_\_\_
- MgO + H<sub>2</sub>SO<sub>4</sub> → \_\_\_\_\_ + \_\_\_\_\_
- 3KOH + \_\_\_\_\_ → Fe(OH)<sub>3</sub> + \_\_\_\_\_
- Pb (NO<sub>3</sub>)<sub>2</sub> + Na<sub>2</sub>SO<sub>4</sub> → \_\_\_\_\_ ↓ + \_\_\_\_\_
- FeCl<sub>2</sub> + 2NaOH → \_\_\_\_\_ ↓ + 2NaCl
- NaCl + AgNO<sub>3</sub> → \_\_\_\_\_ ↓ + \_\_\_\_\_
- CuO + \_\_\_\_\_ → CuCl<sub>2</sub> + \_\_\_\_\_
- NaOH + \_\_\_\_\_ → NaCl + \_\_\_\_\_

**[C] Write T for true and F for false statements. Rewrite the false statements correctly:****[80]**

- Symbols were first used by Swedish chemist, John Dalton. \_\_\_\_\_
- To study the nature of different chemicals requires knowledge of the fundamental building blocks of all chemicals, the molecule. \_\_\_\_\_
- Chemical reactions always involve the input or release of energy. \_\_\_\_\_
- The molecular formula of baking soda is Na<sub>2</sub>O<sub>3</sub>. \_\_\_\_\_
- The law of constant proportion is involved in balancing of a chemical equation. \_\_\_\_\_

**[D] Answer the following questions:****[80-81]**

- What do you mean by a chemical equation? What information is conveyed by it and what are its important limitations?

Ans- \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

2. How to write a chemical formula? Explain with some examples.

Ans-

3. Write the chemical formula of the following compounds:

- a. Sodium carbonate : \_\_\_\_\_
- b. Ferric hydroxide : \_\_\_\_\_
- c. Magnesium phosphate : \_\_\_\_\_
- d. Mercuric oxide : \_\_\_\_\_
- e. Ferrous sulphide : \_\_\_\_\_
- f. Calcium oxide : \_\_\_\_\_
- g. Sodium hydrogen carbonate: \_\_\_\_\_
- h. Ammonium sulphate: \_\_\_\_\_
- i. Aluminium chloride : \_\_\_\_\_
- j. Zinc sulphate : \_\_\_\_\_

4. Explain the following terms:

- a. Symbol: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

- b. Compound : \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

- c. Chemical Equation: \_\_\_\_\_  
 \_\_\_\_\_  
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 \_\_\_\_\_
- d. Limitations of a chemical equation : \_\_\_\_\_  
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- e. Law of conservation of mass : \_\_\_\_\_  
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**Chapter – 6**  
**[Chemical Reactions]**

**Check Point:**

[A] Fill in the blanks with appropriate examples: [98]

1. Decomposition of reactions: electrolysis of water, \_\_\_\_\_
2. Neutralization reactions: mixing of caustic soda solution and hydrochloric acid,  
 \_\_\_\_\_
3. Combination reactions: burning of magnesium wire, \_\_\_\_\_
4. Exothermic reactions: synthesis of ammonia, \_\_\_\_\_
5. Displacement reactions: Reaction between iron nails and copper sulphate solution,  
 \_\_\_\_\_

[B] Answer the following questions: [98]

1. What is electrolysis? Write its important applications.

Ans. \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

[illegible]

[102]

[illegible][illegible][illegible]



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4. Define amphoteric oxides. Give two examples of the oxides.

Ans.

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[D] Answer the following questions: [104]

1. What is the activity series of metals?

Ans.

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2. Explain why hydrogen (a non-metal) is placed in activity series of the metals.

Ans.

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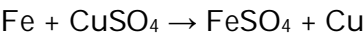
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3. In the following chemical reaction, explain why iron (Fe) is replacing copper (Cu) from copper sulphate (CuSO<sub>4</sub>) solution.



Ans.

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**Keywords:** [104]

Alkali :

Base:

Catalysis:

Catalyst:

Electrode:

Electrolysis:

Electrolyte:

Electrolytic cell:

Electron volt:

Electroplating:

Oxidation:

**Exercise:** [105-108]

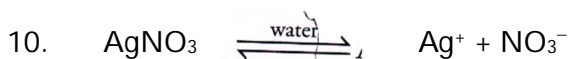
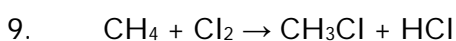
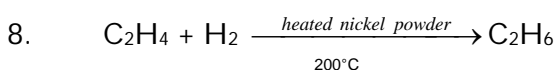
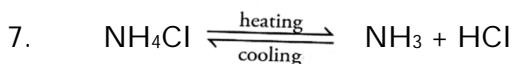
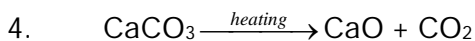
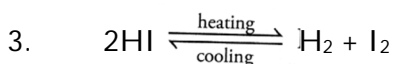
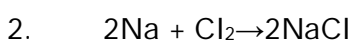
[A] Multiple Choice Questions: [105-106]

- (i) The reaction of acetylene and hydrogen in the presence of heated nickel powder, is called
- (a) substitution reaction (b) addition reaction
- (c) dissociation reaction (d) decomposition reaction
- (ii) When a piece of iron is put into cupric sulphate solution, iron displaces cupric and forms ferrous sulphate. This reaction is called
- (a) substitution reaction (b) addition reaction
- (c) dissociation reaction (d) decomposition reaction
- (iii) The substitution reaction is a characteristic of
- (a) alkenes (b) alkynes
- (c) carbon monoxide (d) paraffins or alkanes
- (iv) Ammonium chloride, on heating, forms  $\text{NH}_3$  and HCl gas which on cooling again forms ammonium chloride. This reaction is called
- (a) ionic dissociation (b) thermal dissociation
- (c) thermal decomposition (d) double decomposition
- (v) Reactions in which new compounds are formed by the exchange between ions or components of compounds, are called
- (a) substitution (b) decomposition
- (c) double decomposition (d) dissociation

- (vi) The reaction in which the valency of positive ion or metal increases, is called
- (a) oxidation (b) reduction
- (c) catalysis (d) decomposition
- (vii) The reaction in which an atom or ion gains electron, is called
- (a) oxidation (b) reduction
- (c) decomposition (d) double decomposition
- (viii) The loss of electronegative part of a substance is
- (a) oxidation (b) reduction
- (c) substitution (d) dissociation
- (ix) Formation of  $\text{Mg}^{2+}$  from Mg is
- (a) oxidation (b) reduction
- (c) ionization (d) decomposition
- (x) The substance which alters the rate of a chemical reaction is called
- (a) oxidation (b) reduction
- (c) catalyst (d) oxidizing agent

[B] What type of reactions are the following:

[106]



[C] Fill in the blanks:

[107]

1. The substances which undergo a chemical change are called \_\_\_\_\_.
2. Photosynthesis is a \_\_\_\_\_ reaction.

3. In \_\_\_\_\_ reactions, heat is liberated.
4. \_\_\_\_\_ is chemical reaction in which reactants and products are in different physical states.
5. \_\_\_\_\_ is a reaction, which proceeds in the direction towards the formation of products only.
6. Displacement reactions are also called \_\_\_\_\_ reactions.
7. A substance which alters the rate of a chemical reaction is called \_\_\_\_\_.
8. Metals above hydrogen in the activity series can displace \_\_\_\_\_ from water.
9. A reaction in which addition of oxygen or any other electropositive radical takes place is called \_\_\_\_\_.
10. A process in which addition of hydrogen or any other electropositive radical takes place is called \_\_\_\_\_.

[D] Write true or false for each statement. Rewrite the false statements correctly: [107]

1. Metals react with acids to form hydrogen and water. \_\_\_\_\_
2. In substitution reactions, more reactive metals get replaced by less reactive metals. \_\_\_\_\_
3. Oxidation and reduction takes place simultaneously together. \_\_\_\_\_
4. Reduction is a process in which loss of electrons takes place. \_\_\_\_\_
5. In catalysis, the rate of reaction does not alter. \_\_\_\_\_
6. Melting point is a characteristic property of a substance. \_\_\_\_\_
7. Naphthalene boils at 400°C. \_\_\_\_\_
8. An impure substance melts at a higher temperature than a pure substance. \_\_\_\_\_
9. Oxidation and reduction reactions take place simultaneously. \_\_\_\_\_
10. Enzymes in the human body function as a catalyst. \_\_\_\_\_

[E] Give reasons for the following statements: [108]

1. Salt is spread on pavement snow during winter in cold countries.

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2. Common salt obtained from salt pans is purified further.

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3. Neutralization reaction is used to get salts.

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4. A person having acidity disorder is given milk of magnesia.

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[F] Answer the following questions: [108]

1. What do you understand by the following chemical reaction? Give one example of each:

a. Addition reaction

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b. Thermal dissociation

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c. Thermal decomposition reaction

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d. Double decomposition reaction

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2. What is activity series of metals?

Ans.

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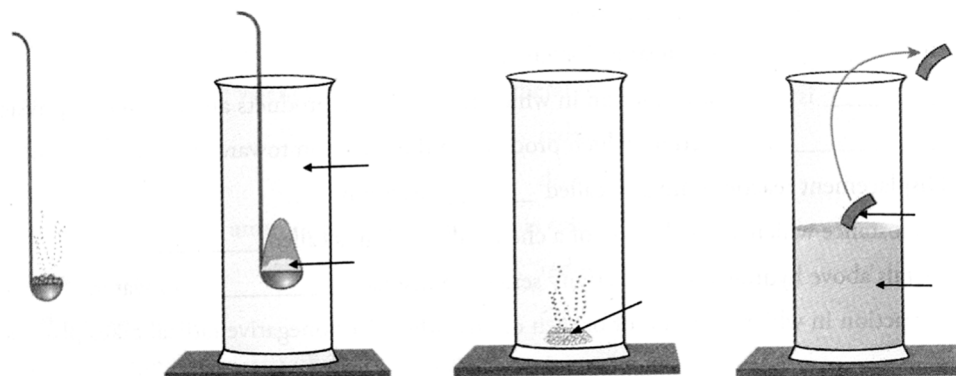
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3. Explain why hydrogen being a non-metal is placed in the activity series of metal.

Ans.

[G] Study the diagram given below and answer the questions that follow:



- Label the apparatus given in the figure.
- Name the oxide formed during the reaction.
- Name the alkali formed when water is added to the oxide formed.

### Chapter – 7 [Hydrogen]

#### Check Point:

[A] Answer the following questions:

[120]

- What happens when –
  - Hydrogen is passed over red hot copper oxide.

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b.     Hydrogen reacts with molten sulphur.

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c.     Zinc reacts with dilute hydrochloric acid.

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d.     Calcium reacts with cold water.

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2.     Write some important uses of hydrogen.

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3.     What is hydrogenation of oils?

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4.     Write two reduction reactions of hydrogen.

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5. How hydrogen is used for cutting and welding metals?

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**Keywords:** [120]

Oxidation: 

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Oxidizing agent: 

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Redox reaction: 

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Reduction: 

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Reducing agent: 

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**Exercise:** [121-122]

[A] Multiple Choice Questions: [121]

- (i) Hydrogen was discovered by
  - (a) Humphry Davy
  - (b) Henry Cavendish
  - (c) Lavoisier
  - (d) Priestley
- (ii) The lightest element among the following
  - (a) sodium
  - (b) oxygen
  - (c) hydrogen
  - (d) nitrogen
- (iii) Hydrogen burns in air to form
  - (a) water
  - (b) ammonia
  - (c) hydrogen sulphide
  - (d) none of these
- (iv) The gas used in hydrogenation of oils is
  - (a) oxygen
  - (b) hydrogen
  - (c) helium
  - (d) nitrogen
- (v) The process of removing oxygen from a substance is called
  - (a) reduction
  - (b) oxidation
  - (c) combination
  - (d) synthesis
- (vi) The compounds formed by the reaction of metals with hydrogen are called
  - (a) oxides
  - (b) hydrides
  - (c) nitrides
  - (d) halides
- (vii) The gas used in the manufacture of vegetable oils is
  - (a) oxygen
  - (b) hydrogen
  - (c) carbon dioxide
  - (d) nitrogen

[B] Fill in the blanks: [121]

- 1. The name 'Hydrogen' to the gas was given by \_\_\_\_\_.
- 2. \_\_\_\_\_ is the lightest element known so far.



3. Hydrogen gas is collected by the \_\_\_\_\_ displacement of water.
4. Sodium reacts with water to form \_\_\_\_\_ gas.
5. When hydrogen is passed over molten sulphur, \_\_\_\_\_ is produced.

[C] Give reasons for the following: [121]

1. In laboratory preparation of hydrogen gas, the gas is collected by the downward displacement of water.

[illegible]

2. When sodium reacts with water, some flames are seen on the surface of water.

[illegible]

3. Hydrogen is used as a reducing agent.

[illegible]

[D] Complete and balance the following equations: [121]

1.  $\text{Zn} + \text{HCl} \rightarrow \text{ZnCl}_2 + \underline{\hspace{2cm}}$

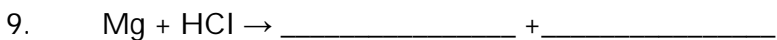
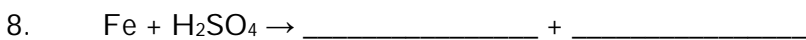
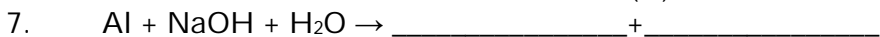
2.  $\text{Mg} + \underline{\hspace{2cm}} \rightarrow \text{MgSO}_4 + \text{H}_2$

3.  $3\text{Fe} + 4\text{H}_2\text{O} \rightarrow \text{Fe}_3\text{O}_4 + \underline{\hspace{2cm}}$   
(Steam)

4.  $\text{CuO} + \text{H}_2 \rightarrow$  +

5.  $\text{Na} + \text{H}_2\text{O} \rightarrow \text{NaOH} + \underline{\hspace{2cm}}$

6.  $\text{Zn} + \text{NaOH} \rightarrow \underline{\hspace{2cm}} + \underline{\hspace{2cm}}$



[E] Answer the following questions:

[122]

1. List some sources of hydrogen.

Ans.

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2. Demonstrate the laboratory preparation of hydrogen gas. Draw a well labelled diagram, also write equations of reaction. Discuss the preference of zinc granules to other metals for the process.

Ans.

[illegible]

3. Write precautions to take while preparing hydrogen in a laboratory.

Ans.

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4. Discuss any two methods of industrial preparation of hydrogen.

Ans.

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5. What is redox reaction?

Ans.

[illegible]

Elaborate the statement – **Hydrogen is a reducing agent.**

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State five uses of hydrogen.

[illegible]

Write chemical equations for the following:

[122]

1. Sodium reacts with water.

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2. Steam is passed over red hot iron.

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3. Hydrogen reacts with nitrogen in presence of catalyst.

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4. Hydrogen reacts with chlorine in sunlight.

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5. Lead oxide is treated with hydrogen.

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[G] Explain the following use of hydrogen: [122]

1. As fuel:

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2. Extraction of metals:

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3. Meteorological balloons:

4. Hydrogenation of oil:

