

## HYDROGEN DPP 1

A. Statement given below are incorrect. Write the correct statements.

1. Sodium metal reacts with hot water to form sodium hydroxide and hydrogen gas.
2. Zinc dissolves in sodium hydroxide to form zinc hydroxide and hydrogen gas.
3. In laboratory preparation of hydrogen gas, the reactants are aluminium and dilute sulphuric acid.
4. In laboratory preparation of hydrogen gas ferrous sulphate is used as catalyst.
5. The acid used to make acidulated water in the electrolysis of water is carbonic acid.

B. Match the statements in Column A, with those in column B.

	Column A		Column B
1	A metal which floats on the surface of cold water and reacts with it to form hydrogen gas	A	Zinc
2	A metal which sinks in cold water and reacts with it to form hydrogen gas.	B	Aluminium
3	A silvery white metal in the form of a ribbon and reacts with steam on heating to form hydrogen.	C	Sodium
4	A metal which is used as reactant in the laboratory preparation of hydrogen gas.	D	Magnesium
5	A metal which reacts with sodium hydroxide to liberate hydrogen gas.	E	calcium

C. write 'true' or 'false' for the following statement:

	Statement	True/False
1	Magnesium reacts with caustic soda solution to liberate hydrogen gas.	
2	Sodium reacts with hydrochloric acid explosively.	
3	On electrolysis of acidulated water, two volumes of oxygen and one volume of hydrogen are formed.	
4	Zinc sulphate is used as catalyst during laboratory preparation of hydrogen gas.	
5	Calcium reacts with cold water and forms calcium hydroxide and hydrogen gas.	

## HYDROGEN DPP 2

- Statements given below are incorrect. Write the correct statements.
  - Hydrogen gas is used in the manufacture of artificial fertilisers, such as potassium nitrate.
  - A mixture of hydrogen and chlorine, on exposure to direct sunlight. Reacts quietly to form hydrochloric acid gas.
  - When a burning candle is taken inside the of chlorine, it burns with a bright flame.
  - A shining silver mass is left behind when hydrogen gas is passed for long time over heated black copper oxide.
  - The product formed during the combustion of hydrogen in air is hydrogen peroxide.
- Match the statements in Column A, with those in column B.

	Column A		Column B
1	A substance which speed up the rate of chemical reaction	A	Hydrochloric acid gas
2	A reaction in which hydrogen removes oxygen from heated metal oxides	B	Hydrogenation
3	The colour of flame of burning hydrogen.	C	Catalyst
4	A gas formed when hydrogen reacts with chlorine in diffused sunlight.	D	Reduction reaction
5	Converting liquid vegetable oils into solid ghee with the help of hydrogen.	E	Pale blue

- Write 'true' or 'false' for the following statements:

Statement	True/False
Hydrogen gas is used in filling weather observation balloons.	
A mixture of hydrogen and chlorine reacts silently with each other in direct sunlight.	
Oxyhydrogen flame has a temperature of $2800^{\circ}\text{C}$	
Hydrogen reacts with lead oxide to form lead metal and oxygen.	
Hydrogen gas burns in air with a pale green flame.	

1. State five physical properties of hydrogen gas.
2. Describe your observation when:
  - (a) A mixture of hydrogen and air is exposed to candle flame.
  - (b) Hydrogen burns in air.
3. State your observations when equal volumes of hydrogen and chlorine are exposed to:
  - (a) Diffused sunlight
  - (b) Direct sunlight
4. Briefly describe your observations when hydrogen gas is passed over heated copper oxide.
5. State four uses of hydrogen gas.
6. State two tests of hydrogen gas
7. Why is the mixture of hydrogen and helium used in weather observation balloons, instead of pure hydrogen?
8. By giving examples explain the following terms:
  - (a) Oxidation
  - (b) Reduction

## HYDROGEN DPP 3

A. Tick the most appropriate answer.

- Hydrogen gas burns in air with a:
  - Pale yellow flame
  - Pale pink flame
  - Pale blue flame
  - Pale green flame
- The colour of residue left behind when hydrogen gas is passed over heated copper oxide is :
  - Black
  - Reddish
  - Brownish
  - Silvery white
- Hydrogen reduces ----- to metals on heating
  - Metal oxides
  - Metal sulphates
  - Metal sulphides
  - Metal chlorides
- The process of removing oxygen from the metallic compounds containing oxygen is called:
  - Oxidation
  - Reduction
  - Displacement
  - Synthesis
- Hydrogen reacts with lead oxide (heated ) to form:
  - lead hydride and water
  - lead and water
  - lead hydroxide and water
  - lead hydroxide only.

B. Write in details

- State five physical properties of hydrogen gas.
- Describe your observation when:
  - A mixture of hydrogen and air is exposed to candle flame.
  - Hydrogen burns in air.
- State your observations when equal volumes of hydrogen and chlorine are exposed to:
  - Diffused sunlight
  - Direct sunlight
- Briefly describe your observations when hydrogen gas is passed over heated copper oxide.
- State four uses of hydrogen gas.
- State two tests of hydrogen gas

7. Why is the mixture of hydrogen and helium used in weather observation balloons, instead of pure hydrogen?
8. By giving examples explain the following terms:
  - (a) Oxidation
  - (b) Reduction

