

Chemical Reactions and Equations

- State any three observations which help to determine whether a chemical reaction has taken place. Write an activity which may justify at least two of the listed observations.

2012/2014 [2 Marks]

Observations: (i) Change in state, (ii) Change in colour, (iii) Evolution of a gas, (iv) Change in temperature. (any three)

Activity:

- ⇒ A few zinc granules are taken in a conical flask.
- ⇒ A little quantity of dilute hydrochloric acid is poured over it.
- ⇒ It is observed that zinc granules start decreasing in size and hydrogen gas is evolved.
- ⇒ The temperature of the flask is also slightly increased.

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2. Mention three ways by which a usual chemical equation can be made more informative.

2014/2015/ 2016 [3 Marks]

The three ways by which a usual chemical equation can be made more informative are:

- (a) By balancing the chemical reaction, the number of atoms of each reactant and product can be made equal.
- (b) More information about the physical states of reactants and products can be drawn by mentioning their physical states (*s, l, g, aq*).
- (c) Quantity of heat absorbed or released should be mentioned on either reactants or products side so that endothermic or exothermic reaction can be identified.

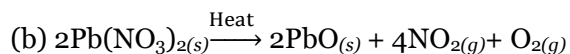
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3. Consider the following reaction:



- (a) Name the gases produced in the above reaction.
- (b) Balance the above chemical equation.
- (c) Name the type of chemical reaction.

2015/2016 [3 Marks]

- (a) Nitrogen dioxide and oxygen.



- (c) Decomposition reaction.

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4. (a) When hydrogen gas burns in presence of oxygen, water is formed and when water is electrolyzed then hydrogen and oxygen gases are produced. State the kind of reaction that takes place
- (i) in the first case
 - (ii) in the second case
- (b) In the experimental set-up for electrolysis of water, hydrogen, and oxygen gases are produced at the cathode and anode respectively. Mention the ratio of the volumes of hydrogen and oxygen gases.



2014/2015/2016 [3 Marks]

- (a) (i) Combination reaction (ii) Decomposition reaction.
(b) Ratio of volume of hydrogen and oxygen gases is 2:1.
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5. Food when left for a long time tastes/smells bad. What is this condition called? Mention any four ways by which we can prevent this condition.

2015/2016 [3 Marks]

It happens due to oxidation of fatty matters contained in the food and this phenomenon is known as rancidity.

Measures of prevention:

- (i) Keeping such food materials in air tight containers.
 - (ii) Refrigeration of such food materials.
 - (iii) Flushing inactive gases such as nitrogen in packets containing fatty foods.
 - (iv) Using antioxidants i.e., the substances which prevent the oxidation of fats and oils.
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