* Decomposition of calcium carbonate :- heat energy absorbed.

Conditions necessary for chemical reaction

1. Close contact

$$2Na + 2H_2O \rightarrow 2NaOH + H_2$$

2. Solution form

White precipitate

$$NaCl(aq) + AgNO_3(aq) \rightarrow AgCl + NaNO_3(aq)$$

3. Heat energy

$$Fe + S \rightarrow FeS$$

iron sulphide.

4. Light Energy

Chemical reactions which can take only in the presence of light, are called photochemical reactions.

eg: Photosynthesis

Sunlight

$$6CO_2 + 6H_2O \Longrightarrow C_6H_{12}O_6 + 6O_2$$

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5. Electricity

$$2H_2O \xrightarrow{\text{electricity}} 2H_2 + O_2$$

Chemical reactions which occur only when electricity is passed through the reactant, are called electrochemical reactions

6. Pressure

$$N_2 + 3H_2 \xrightarrow{200\ atm} 2NH_3$$

7. Catalyst

A catalyst is a substance that changes the rate of a chemical reaction without itself undergoing any chemical change during the reaction.

- When a catalyst increases the rate of chemical reaction, it is known as a positive catalyst.

example iron acts as a positive catalyst in the

manufacture of ammonia from hydrogen and nitrogen.

eg:

- When a catalyst decreases the rate of a chimical reaction, it is known as negetive catalyst.

Example * Phosphoric acid acts as a negitive catalyst in the decomposition of hydrogen peroxide.

Promoters

Substances that improve the efficiency of a catalyst are called promoters.

MOLYBDENUM acts as a promote to increase the efficiency of catalyst iron, in the formation of ammonia.

Enzymes

Enzymes are the complex organic compounds made up of protein units.

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Enzymes act as catalyst for biochemical reactions.

eg: Maltase, Pepsin, Amylase