DON BOSCO SCHOOL, KOKAR, RANCHI

Class - 7

Subject: CHEMISTRY

Chapter -2 : PHYSICAL AND CHEMICAL CHANGES

A.Short answer questions:

1. What are reversible changes?

Ans- A change is said to be reversible when the opposite change can be brought about by reversing the condition.

2. What are irreversible changes?

Ans- A change is said to be irreversible when the opposite changes cannot be brought about by reversing the condition.

3. Classify the following into desirable and undesirable changes:

a) The spoiling of food (undesirable changes) b) The digestion of food (desirable changes)
c) The rotting of an egg (undesirable changes)
d) The decaying of a dead animal in an open air (undesirable changes)

4. Define physical changes.

Ans- A change in which no new substances are formed and which can be reversed by reversing the conditions.

5. Define chemical changes.

Ans- A change in which new substances are formed and which cannot be reversed by reversing the conditions.

6. Classify the following into physical changes and chemical changes:

a) The melting of ice (Physical) b) Rusting(chemical)
c) The cooking of food(chemical) d)Fermentation(chemical)
e)The evaporation of liquid(physical) f)The sublimation of iodine(physical)
g) The dissolution of solid(physical) h) The burning of coal(chemical)
i) The glowing of a bulb(physical) j) The freezing of water(physical)
k) The curdling of milk(chemical) l) Photosynthesis in green plants(chemical)

m) The condensation of water vapour (physical) n)The digestion of food(chemical)
o) The boiling of an egg(chemical) p) The growth of plant.(chemical)

7. Define endothermic changes.

Ans- An endothermic change are which requires or absorbs heat energy from its surroundings.

8. Define exothermic changes.

Ans- An exothermic change are which releases heat energy to its surroundings.

9. Classify the following into endothermic and exothermic changes.

a) The dissolution of glucose (endothermic changes)
b) The boiling of water (endothermic changes)
c) Burning (exothermic changes)

B. Long answer question:

1. Give two examples to show that mass of the individual substances undergoing a chemical change altered.
Ans- Two examples to show that mass of the individual substances undergoing a chemical change altered are:
i) One good example of a chemical change is burning a candle. The act of burning paper actually results in the formation of new chemicals (carbon dioxide and water, to be exact) from the burning of the wax.
ii) Another example of a chemical change when burnt in air hydrogen forms water. Again the atoms contained in the molecules of hydrogen and oxygen rearranges themselves. Thus they have actually changed into a new substance, water, which is different from hydrogen or oxygen.

2. State the differences between the physical changes and chemical changes.
Ans-

Physical change	Chemical change
1.A physical change is temporary.	1. A chemical change is permanent.
2. A physical change is reversible.	2. A chemical change is irreversible.
3. No new substances are formed after a physical change.	3. New substances are formed after a chemical change.
4. After a physical change, the mass of the substances does not change.	4. After a chemical change, the mass of any individual substance changes.

3. Discuss an example to show that physical and chemical changes can occur together.
Ans- **i) Physical Change**: When a candle is lighted, some of the solid wax melts and turn into a liquid. When it cools, it solidifies. Therefore, this is a physical change, involving only a change in state, which is reversible.

ii) Chemical change: But some turns into vapour and gives a flame. This forms two new substances, water vapour and carbon dioxide, and the size of the candle decreases. This is a chemical change, and it cannot be reversed. Thus, we see that the melting of wax is a physical change but the burning of a candle is a chemical change.

4. Give one example of each kind to show that a change in energy takes place when a physical and chemical change occurs.

Ans- **i) Physical change:**

During a physical change in matter, such as the evaporation of liquid water to water vapour, the energy of the water molecules increases. However, the change in energy is much smaller than in chemical reactions. When a chemical reaction occurs, some bonds will break, while new bonds may form.

ii) Chemical change:

During a chemical change in matter, that releases energy in the form of heat or light. In other reactions, the energy that must be absorbed to break the bonds in the reactants is more than the energy that is released when the new bonds in the products are formed.

5. What is respiration? Explain.

Ans- **Respiration** is the biochemical process in which the cells of an organism obtain energy by combining oxygen and glucose, resulting in the release of carbon dioxide, water and lots of energy is also released.

$$\text{Glucose} + \text{Oxygen} \rightarrow \text{Carbon Dioxide} + \text{Water} + \text{ATP}$$

$$C_6H_{12}O_6 + O_2 \rightarrow CO_2 + H_2O + ATP$$

C. Fill in the blanks:

Answers: 1. does not change 2. an irreversible 3. exothermic 4. Solute, solvent 5. water vapour 6. Moisture

1. When a solid dissolve in a liquid, the volume of the liquid _____.
2. The curdling of milk is _____ process.
3. The slaking of lime is an _____ change.
4. The molecule of _____ hide themselves in the intermolecular space of the _____.
5. When burnt, wood forms carbon dioxide and _____.
6. Iron combines with oxygen and _____ of the air to form rust.

D. True or false:

Answers: 1. False 2.false 3.True 4.true 5.true 6.true

1. A physical change is irreversible.
2. A chemical change is reversible.
3. The mass of a substance undergoing a physical change is not altered.
4. Heat is absorbed when glucose is dissolved in water.
5. Heat is evolved when concentrated hydrochloric acid is poured into water.
6. A mixture of iron and Sulphur undergoes a chemical change when heated.

Points to Remember

1. Burning of kerosene is an irreversible change.
2. The digestion of food is a desirable change.
3. During burning new substances are formed.
4. Respiration is the process during which glucose reacts with oxygen.
5. Photosynthesis is the process during which energy is derived from sunlight.

Assignment:

1.Write all the long and short questions answer in your copy and learn it.
2. Learn all objectives- fill in the blanks, true or false and also points to remember.