**18th May, 2020 JESUS AND MARY SCHOOL AND COLLEGE MODULE - 2**

**CLASS – 8**

**CHEMISTRY**

**CHAPTER- PHYSICAL AND CHEMICAL CHANGES**

**CHANGES:**

In our day-to-day life, we experience different types of changes around us. ***A change is the transformation of substance from one form to another***. The formation of day and night, the change of seasons, rain and drought, the germination of seeds, the blossoming of flowers, the ripening of fruits, the cooking of food and the burning of fuels are a few examples of changes.

Changes take place all around us all the time. All the changes are not of the same time type. Changes can be natural or man-made, desirable or undesirable, reversible or irreversible, slow or fast, periodic or non-periodic, physical or chemical and exothermic or endothermic. The following changes are described below:

1. **DESIRABLE CHANGES:**

Changes that are useful to mankind are said to be desirable changes. These are the changes which we want to occur. Examples: Curdling of milk, cooking of food, etc.

1. **UNDESIRABLE CHANGES:**

Any change that brings about destruction is an undesirable change.These are the changes which we do not want to occur. Example: Cutting of trees, rusting of iron, souring of milk etc.

|  |  |
| --- | --- |
| **DESIRABLE CHANGES** | **UNDESIRABLE CHANGES** |
| Changes that are useful to mankind are said to be desirable changes. | Anything that brings about destruction is an undesirable change. |
| Examples: Curdling of milk, cooking food etc. | Examples: Cutting of trees, rotting of fruits, souring of milk etc. |

1. **PERIODIC CHANGES:**

Changes that occur repeatedly after regular intervals of time and whose occurrence can be predicted are called periodic changes. Example: Movement of pendulum and the hands of the clocks, phases of the moon, heartbeat, motion of the earth etc.

1. **NON-PERIODIC CHANGES:**

Changes that do not repeat themselves at the regular intervals of time are called non-periodic changes. Example: Natural phenomenon like earthquakes, cyclones and volcanic eruptions.

|  |  |
| --- | --- |
| **PERIODIC CHANGES** | **NON-PERIODIC CHANGES** |
| Changes that occur repeatedly after regular intervals of time and whose occurrence can be predicted are called Periodic changes. | Changes that do not repeat themselves at regular intervals of time are called non-periodic changes. |
| Example: Movement of pendulum, phases of moon, heartbeat and the hands of the clock etc. | Examples: Natural phenomenon like earthquakes, cyclones and volcanic eruptions. |

1. **NATURAL CHANGES:**

Changes that occur naturally are called natural changes.Example: Weathering of rocks, blooming of flowers, formation of clouds etc.

1. **MAN-MADE CHANGES:**

Changes that occur to the action of human beings are called man-made changes. Example: Cutting of trees, construction of bridges, roads and dams etc.

1. **REVERSIBLE CHANGES:**

Changes that can be easily reversed by removing the cause of the change are called reversible changes. **Ex-** Melting of ice, stretching of rubber bands, drying of clothes etc.

1. **IRREVERSIBLE CHANGES:**

Changes that cannot be easily reversed are called irreversible changes. Example: Burning of paper, germination of seeds, bursting of crackers etc.

|  |  |
| --- | --- |
| **REVERSIBLE CHANGES** | **IRREVERSIBLE CHANGES** |
| Changes that can be easily reversed by removing the cause of the change are called reversible changes. | Changes that cannot be easily reversed are called irreversible changes. |
| Examples: Melting of ice, stretching of rubber, drying of clothes etc. | Examples: Burning of matchstick, germination of seed, bursting of crackers etc. |

1. **SLOW CHANGES:**

Changes that take place slowly are called slow changes.Example: Germination of seeds, rusting of iron etc.

1. **FAST CHANGES:**

Changes that take place fast are called fast changes. Example: Burning of matchstick, bursting of crackers, etc.

1. **EXOTHERMIC CHANGES:**

A change that releases energy in the form of heat is called an exothermic change. Example: Rusting of iron, condensation of water vapour to form rain, formation of snow in clouds, making ice cubes, burning sugar, etc.

1. **ENDOTHERMIC CHANGES:**

A change that absorbs energy in the form of heat is called an endothermic change. Example: Cooking an egg, evaporation of water, conversion of frost to water vapour, melting of ice cubes, plants producing sugar by photosynthesis, etc.

1. **PHYSICAL CHANGES:**

A change in which chemical composition of a substance remains the same is called a physical change. No new substance is formed. Heat or light may or may not be given out or consumed. Physical changes are temporary. Example: the change of ice into water cools, it converts into ice again, glowing of a bulb, etc.

1. **CHEMICAL CHANGES:**

A change in which the chemical composition of a substance changes is called chemical change. A new substance is formed. Heat or light, or both, are given out or consumed. Chemical changes are permanent. Example: curdling of milk; curd cannot be turned back into milk, burning of fuel, digestion of food, etc.

**WORKSHEET**

1. **Fill in the blanks.**
2. In a \_\_\_\_\_\_\_\_\_\_\_\_\_\_, new substance is formed.
3. Cooking of food is a \_\_\_\_\_\_\_\_\_\_ change.
4. Sunset and sunrise are \_\_\_\_\_\_\_\_\_\_\_\_\_\_ change.
5. A physical change is a \_\_\_\_\_\_\_\_\_\_\_\_ change.
6. Changes that take place slowly are called \_\_\_\_\_\_\_\_\_\_\_ changes.
7. **Write true or false for the following statements:**
8. Burning of firecrackers is a slow change.
9. Melting of ice is a reversible change.
10. Boling of water is an endothermic change.
11. The formation of day and night is a periodic change.
12. An earthquake is a desirable change.
13. **Answer the following questions:**
14. Differentiate between desirable and undesirable changes.
15. Differentiate between physical and chemical changes.
16. What is a periodic change? Give example.
17. What are reversible changes?
18. Differentiate between slow and fast changes.

**NOTE:**

**Please do this work in your copies which will be checked when the school reopens. Please consider this important.**