

**SUBJECT**: CHEMISTRY

**CLASS** : VIII

## **UNIT 2: PHYSICAL AND CHEMICAL CHANGES**

### **OBJECTIVE EVALUATION**

#### **A. CHOOSE THE CORRECT ANSWER:**

1) Which of the following is an example of man-made change?

- a. Weathering of rocks
- b. Digestion of food
- c. Growth of a tree
- c. Farming

2) Which of the following changes is a fast change?

- a. Formation of day and night
- b. Changes in seasons
- c. Bursting of a fire crackers
- d. Changing milk to curd

3) Spoilage of food is a

- a. Chemical change
- b. irreversible change
- c. slow change
- d. all of these

4) Which of the following is not a desirable change?

- a. change of season
- b. Formation of clouds
- c. Ripening of fruits
- d. rusting of iron

5. An example of both physical and chemical change is
- a. freezing of water
  - b. burning of a candle
  - c. glowing of a bulb
  - d. burning of paper

6. In which of the following changes a new substance is formed?

- a. Dissolution of sugar
- b. burning of fuel
- c. Stretching of rubber band
- d. melting of wax

7. Which of the following changes is not correctly matched?

- a. Formation of manure from waste- Desirable change
- b. Growth of a baby into an adult- Slow change
- c. Earthquake-Periodic change
- d. Burning of wood- Chemical change

## **B. FILL IN THE BLANKS:**

1. In a chemical change, new substances are formed.
2. Eruption of volcano is a non-periodic or undesirable change.
3. Burning of fuel is a chemical or irreversible change.
4. Rotation of the earth on its axis is a periodic change.
5. Moulding of glass is a physical change.

## **C. WRITE TRUE OR FALSE:**

1. Distillation of water is a physical change. (**TRUE**)
2. Formation of water vapour from water is a chemical change. (**FALSE**)
3. Beating of heart is a periodic change. (**TRUE**)
4. Ripening of fruits is a desirable change. (**TRUE**)
5. Melting of ice to water is an irreversible change. (**FALSE**)

**D. MATCH THE FOLLOWING :(DIRECT ANSWERS)**

- |                                   |                       |
|-----------------------------------|-----------------------|
| 1. Phases of the moon             | - Periodic change     |
| 2. Change in season               | - Natural change      |
| 3. Photosynthesis in green plants | - chemical change     |
| 4. Coughing                       | - Non-periodic change |
| 5. Breaking of glass              | - Undesirable change  |
| 6. Digestion of food              | - Desirable change    |

**SUBJECTIVE EVALUATION**

**E. ANSWER THE FOLLOWING QUESTIONS :**

**Q1. What do you mean by endothermic and exothermic changes? Give examples.**

**Ans.** A change which proceeds with the absorption of heat energy is known as endothermic change. Eg: Melting of ice, photosynthesis, sublimation.

A change in which heat is liberated is called exothermic change.  
Eg: Freezing of water, ripening of fruits, condensation.

**Q2. Differentiate between exothermic process and exothermic reaction with examples.**

Ans.

| <b>EXOTHERMIC PROCESS</b>                                   | <b>EXOTHERMIC REACTION</b>  |
|---|---|
| 1) It is a physical change.                                 | 1) It is a chemical change.   |
| 2) No new substances are formed.                            | 2) New substances are formed.                                       |
| 3) <u>Eg</u> : Freezing of water, deposition, condensation. | 3) <u>Eg</u> : Burning of fuel, ripening of fruits, burning of LPG. |

**Q3. Give an example of change where both physical and chemical changes take place simultaneously.**

Ans. Burning of a candle is an example of change where both physical and chemical changes take place simultaneously. When a candle is lit, the solid wax melts and changes into liquid state. This liquid wax on cooling turns into solid wax. Therefore this change is a physical change. At the same time, some of the molten wax rises up the wick, changes into vapour and burns with a flame to produce water vapour and carbon dioxide. Since two new substances are formed, it is a chemical change.

**Q4. Give four examples each of physical and chemical changes.**

Ans.\* **Four examples of physical change are :**

1) Melting of butter

2) Conversion of water to steam on boiling

3) Formation of clouds

4) Breaking of glass

\* **Four examples of chemical changes are :**

1) Cooking of food

2) Ripening of fruits

3) Digestion of food in stomach

4) Germination of seeds

**Q5. State the differences between physical and chemical changes.**

Ans.

| <b>PHYSICAL CHANGE</b>  | <b>CHEMICAL CHANGE</b>  |
|---|---|
| 1) No new substances are formed.                                      | 1) New substances are formed.   |
| 2) The change is temporary.   | 2) The change is permanent.   |
| 3) The change is reversible.  | 3) The change is irreversible.  |
| 4) Specific properties of substances do not change.                   | 4) Specific properties of substances change completely.                               |
| 5) During a physical change there may or may not be an energy change. | 5) During a chemical change there is evolution or absorption of heat or light energy. |

**Q6. Into how many types can you classify the change-germination of seed?**

Ans. Slow change, irreversible change, chemical change, natural change and desirable change.

**F. DEFINE THE FOLLOWING:**

- 1) **PHYSICAL CHANGE** : It is a temporary change in which the physical characteristics of matter change but the composition of the substance remains the same and no new substances are formed.
- 2) **CHEMICAL CHANGE** : It is a permanent change in which the composition and properties of the substances change and new substances are formed.
- 3) **PERIODIC CHANGE** : Changes which are repeated at regular interval of time are called periodic changes.
- 4) **DESIRABLE CHANGES** : Changes which are beneficial for us are called desirable changes.
- 5) **UNDESIRABLE CHANGES** : Changes that bring about destruction are called undesirable changes.
- 6) **ENDOTHERMIC CHANGE** : A change which proceeds with the absorption of heat energy is known as endothermic change.
- 7) **EXOTHERMIC CHANGE** : A change in which heat is liberated is called an exothermic change.

**G. DIFFERENTIATE BETWEEN :**

- 1)

| <b>NATURAL CHANGE</b>                                | <b>MAN-MADE CHANGE</b>                           |
|--|--|
| 1) It takes place in nature.                         | 1) It is brought about by the activities of man. |
| 2) <u>Eg</u> : change in season, ripening of fruits. | 2) <u>Eg</u> : cooking of food, burning of fuel. |

2)

| <b>PERIODIC CHANGE</b>                             | <b>NON-PERIODIC CHANGE</b>                            |
|--|---|
| 1) They are repeated at regular interval of time.  | 1) They are not repeated at regular interval of time. |
| 2) <u>Eg</u> : change in season, beating of heart. | 2) <u>Eg</u> : Eruption of volcano, earthquake.       |

3)

| <b>PHYSICAL CHANGE</b>           | <b>CHEMICAL CHANGE</b>        |
|----------------------------------|-------------------------------|
| 1) No new substances are formed. | 1) New substances are formed. |
| 2) It is temporary.              | 2) It is permanent.           |
| 3) It is reversible.             | 3) It is irreversible.        |

4)

| <b>ENDOTHERMIC REACTION</b>                                 | <b>ENDOTHERMIC PROCESS</b>           |
|---|--------------------------------------|
| 1) New substances are formed.                               | 1) No new substances are formed.     |
| 2) It is a chemical change.                                 | 2) It is a physical change.          |
| 3) <u>Eg</u> : photosynthesis, dissolving ammonium chloride | 3) <u>Eg</u> : Melting, sublimation. |

|           |  |
|-----------|--|
| in water. |  |
|-----------|--|

**\* EXTRA OBJECTIVES:**

**NAME THE FOLLOWING:**

1) Name the change that can be reversed by reversing the conditions.

Ans. Reversible change

2) Give two examples of desirable change.

Ans. Cooking of food, ripening of fruits

3) Name the type of change observed in swinging of a pendulum.

Ans. Periodic change

4) Name the change in which heat is liberated.

Ans. Exothermic change

5) Give one example of change in which both physical and chemical changes takes place.

Ans. Burning of candle

6) Name the type of changes which are beneficial for us.

Ans. Desirable changes

7) Give two examples of undesirable changes.

Ans. Floods, earthquake

8) Give two examples of reversible changes.

Ans. Stretching of rubber band, melting of ice to water

9) Give two examples of irreversible changes.

Ans. Burning of paper, cooking of food

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