5 Changes around us Physical and Chemical

Chapter Notes:

Physical Changes

- Only physical properties like shape, size, and state change.
- No new substance is formed.
- Examples: Melting ice, cutting paper, folding cloth.

Chemical Changes

- New substances with different properties are formed.
- Involve chemical reactions.
- Examples: Rusting iron, burning wood, curdling milk.

Some Important Chemical Changes

- Rusting: Iron + Water + Oxygen → Rust (iron oxide)
- Combustion: Magnesium + Oxygen → Magnesium oxide + Heat + Light

Physical and Chemical Change Together

- Example: Burning a candle:
- Melting of wax – Physical change
- Burning of wax vapour – Chemical change

Reversible and Irreversible Changes

- Reversible: Can be undone. (e.g., melting wax)
- Irreversible: Cannot be undone. (e.g., curdling milk)

Desirable and Undesirable Changes

- Desirable: Cooking, digestion, composting.
- Undesirable: Rusting, food spoilage.

Natural Changes

- Weathering: Physical and chemical breakdown of rocks.
- Erosion: Transport of sediments by wind or water.

Fill in the blanks

1. Changes in which no new substance is formed are called _____.
2. Rusting of iron is a _____.
3. The gas formed during vinegar and baking soda reaction is _____.
4. The formation of soil from rocks is called _____.
5. _____ requires fuel, oxygen, and heat.

Multiple Choice Questions (MCQs)

1. Which of the following is a chemical change?

a) Boiling water
b) Melting wax
c) Rusting
d) Freezing water

2. The burning of magnesium ribbon produces:

a) Carbon dioxide
b) Water
c) Magnesium oxide
d) None of these

3. What turns lime water milky?

a) Carbon dioxide
b) Oxygen
c) Hydrogen
d) Nitrogen

True or False

1. Physical changes are always reversible.
2. Cutting paper is a physical change.
3. Burning wood is a chemical change.
4. Ripening of fruit is a physical change.
5. All chemical changes produce heat.

Short Answer Questions

Q1. What is a physical change?

Ans: _____

Q2. What is a chemical change?

Ans: _____

Q3. Define ignition temperature.

Ans: _____

Q4. Name a natural process that includes both physical and chemical changes.

Ans: _____

Q5. Why is burning a candle both physical and chemical?

Ans: _____

More Questions

Q1. What happens to lime water when carbon dioxide is passed through it? Why?

Ans: _____

_____

_____

_____

Q2. Why is curdling of milk considered a chemical change? Give reason.

Ans: _____

_____

_____

Q3. Define combustion.

Ans: _____

_____

_____

Q4. Why is rusting of iron a chemical change?

Ans: _____

_____

_____

Q5. What is meant by weathering?

Ans: _____

_____

_____

Answers

Fill in the Blanks

1. physical changes
2. chemical change
3. carbon dioxide
4. weathering
5. Combustion

Multiple Choice Questions (MCQs)

1. → c) Rusting
2. → c) Magnesium oxide
3. → a) Carbon dioxide

True or False

1. → False
2. → True
3. → True
4. → False
5. → False

Short Answer Questions

Ans 1: A change in which no new substance is formed and only the appearance or state changes.

Ans 2: A change in which one or more new substances are formed with different properties.

Ans 3: The lowest temperature at which a substance catches fire.

Ans 4: Weathering of rocks.

Ans 5: Wax melts (physical), vapour burns (chemical).

Extra Question

Q1. Ans: Lime water turns milky when carbon dioxide is passed through it because calcium carbonate (a white insoluble substance) is formed.

Equation:

Calcium hydroxide (lime water) + CO_2 → Calcium carbonate + Water

Q2. Ans: Curdling of milk is a chemical change because a new substance, curd, is formed with different taste, texture, and properties. The original milk cannot be recovered.

Q3. Ans: Combustion is a chemical reaction in which a substance combines with oxygen to produce heat and/or light. Example: Burning wood or kerosene.

Q4. Ans: Rusting of iron is a chemical change because a new substance, iron oxide (rust), is formed that cannot be converted back into iron.

Q5. Ans: Weathering is the breaking down of rocks into smaller particles due to physical factors (like wind and rain) and chemical reactions (like oxidation).