

CLASS 7

SCIENCE

EXTRA QUESTIONS

Extra Questions for Class 7 Science Chapter 5: Changes Around Us – Physical and Chemical

Fresh practice questions for Class 7 Science Chapter 5 "Changes Around Us: Physical and Chemical", designed to deepen conceptual understanding.

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Q1.

Classify the following as physical or chemical changes: (a) Freezing juice into ice pops (b) Digestion of food (c) Sharpening a pencil (d) Setting of cement.

Answer: (a) Physical (state change only) (b) Chemical (food is broken into new substances) (c) Physical (shape/size change only) (d) Chemical (cement undergoes an irreversible reaction while hardening)

Q2. Assertion-Reason

Assertion (A): Rusting of iron is a chemical change.

Reason (R): Rusting forms a new substance (iron oxide) that cannot easily be converted back to iron.

Answer: Both A and R are true, and R correctly explains A.

Q3.

Why is dissolving salt in water considered a physical change, while burning sugar is considered a chemical change?

Answer: Dissolving salt in water does not change the salt’s chemical composition — it can be recovered unchanged by evaporating the water, so it is physical. Burning sugar breaks it down into completely new substances (like carbon and water vapour), which cannot be converted back into sugar, so it is chemical.

Q4. Spot the error

A student wrote: “All chemical changes are reversible, since we can always convert the new substance back to the original.” Identify and correct the error.

Answer: This is incorrect. Most chemical changes are **irreversible** (e.g., rusting, burning, curdling) — the original substance generally cannot be recovered. Reversibility is not a defining feature of chemical change; the defining feature is that a new substance with different properties is formed.

Q5. HOTS

A campfire needs dry wood, a spark, and open air to keep burning, but goes out if doused with water or smothered with a blanket. Explain using the three requirements of combustion.

Answer: Combustion needs (1) a combustible substance (dry wood), (2) oxygen (from open air), and (3) ignition temperature (from the spark). Water cools the wood below its ignition temperature and also blocks oxygen, while a blanket cuts off the oxygen supply — either action removes one of the three requirements, extinguishing the fire.

Q6.

Design a simple test using lime water to check whether a gas produced in an experiment is carbon dioxide.

Answer: Pass the gas through a delivery tube into a test tube of clear lime water (calcium hydroxide solution). If the gas is carbon dioxide, the lime water turns milky white due to the formation of calcium carbonate, confirming the gas is CO₂.

Q7.

Explain why the formation of soil from rocks is described as involving both physical and chemical changes.

Answer: Physical agents like wind, rain, and temperature changes physically break large rocks into smaller fragments (physical change — only size changes). At the same time, weathering processes chemically alter the minerals within the rock, changing their composition (chemical change). Both processes work together over time to form soil.

Q8.

A shopkeeper says, “Once milk turns into curd, I cannot turn the curd back into milk.” What type of change does this describe, and why?

Answer: This describes a **chemical change**. Curdling produces a new substance (curd) with different properties from milk, through a reaction with acid or bacteria, and this change cannot be reversed.

Q9.

Explain why melting of wax and burning of wax are both important to understand when studying a burning candle, even though they are different types of change.

Answer: Melting of wax (solid to liquid) is a physical change needed to draw liquid wax up the wick. Burning of the wax vapour (reacting with oxygen to form carbon dioxide, water vapour, heat, and light) is a chemical change that produces the flame. Both processes happen together in a burning candle, showing that physical and chemical changes can occur simultaneously in the same everyday process.

Q10.

Classify a matchstick catching fire as a physical or chemical change, and identify which requirement of combustion is met by striking the matchstick against the box.

Answer: A matchstick catching fire is a **chemical change** (new substances like ash, smoke, and gases are formed). Striking the matchstick against the rough surface generates friction, which provides the heat needed to raise the match head to its **ignition temperature**.

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