Worksheet: Nature of Matter: Elements, Compounds, and Mixtures

NIOS · Class 8 · Science · 8 questions · 12 marks

Name: _____ Date: _____ Score: _____ / 12

Q1. Which of these is a pure substance? *[1 mark]*

A) Seawater

B) Air

C) Sodium chloride

D) Brass

Q2. In Activity 8.3, a burning candle is brought to the mouth of a test tube and the flame glows brighter. Which gas is in the tube? *[1 mark]*

A) Oxygen

B) Water vapour

C) Hydrogen

D) Carbon dioxide

Q3. Iron filings and sulfur powder are mixed, then half the mixture is heated until a black mass forms. A magnet is moved over both. What is observed? *[1 mark]*

A) The unheated mixture gives up its iron to the magnet; the black mass does not respond at all

B) Only the black mass responds, because heating strengthens magnetism

C) Both respond equally, since both contain iron

D) Neither responds, because sulfur blocks the magnetism

Q4. Assertion (A): Common salt can be recovered from seawater by evaporation, but sodium cannot be recovered from common salt by any physical method. Reason (R): Seawater is a mixture while sodium chloride is a compound. *[1 mark]*

A) A is true but R is false

B) A is false but R is true

C) Both A and R are true, and R is the correct explanation of A

D) Both A and R are true, but R is not the correct explanation of A

Q5. Colourless lime water is left in a petri dish and turns milky after a few hours. What does this show, and why does it look milky? *[1 mark]*

A) The water has become dirty from dust settling on it

B) Oxygen is present in air; the calcium hydroxide has evaporated

C) Carbon dioxide is present in air; the calcium carbonate formed is insoluble

D) Nitrogen has reacted with the lime water to form a white solid

Q6. In Activity 8.4 water droplets appear near the open end of the boiling tube. Explain how you know they came from the sugar rather than from the air, and what follows about sugar. *[3 marks]*

Q7. Which statement about minerals is correct? *[1 mark]*

A) All minerals are compounds, without exception

B) All minerals are mixtures, since they are found in rocks

C) Most minerals are compounds, but a few — the native minerals — are pure elements

D) Minerals are elements, and rocks are the compounds made from them

Q8. A student writes: 'Air is a uniform mixture, so it must be a pure substance.' Identify the error and correct it. *[3 marks]*