Practice Paper

CBSE Class 8 Science (Curiosity) — Chapter 8: Nature of Matter: Elements, Compounds, and Mixtures

Time: 1½ hours	**Maximum Marks:** 40	**Session:** 2026–27
Name: _____	Roll No.: _____	Date: _____

General Instructions: (1) All questions are compulsory. (2) Questions marked **[Fig. N]** are figure-based (Fig. 1 to Fig. 7); study the figure carefully. (3) Write answers in the answer sheet; draw neat labelled diagrams wherever needed. (4) Marks for each question are shown in square brackets.

SECTION A — Multiple Choice Questions (1 mark each)

1. Which of the following is a compound? **[1]**

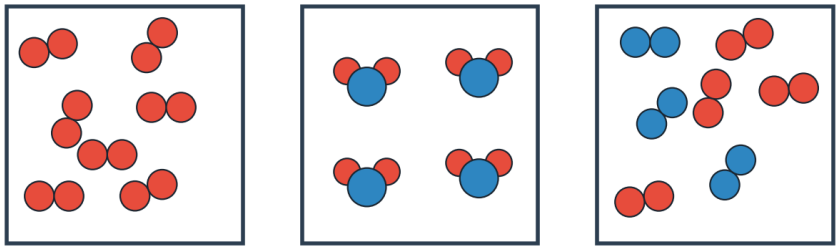
(a) Oxygen

(b) Iron

(c) Water

(d) Air

2. [Fig. 1] Fig. 1 shows the particles in three boxes. In Box P and Box R the red and blue circles are atoms of two different elements. Which box represents a compound? **[1]**



Box P **Box Q** **Box R**

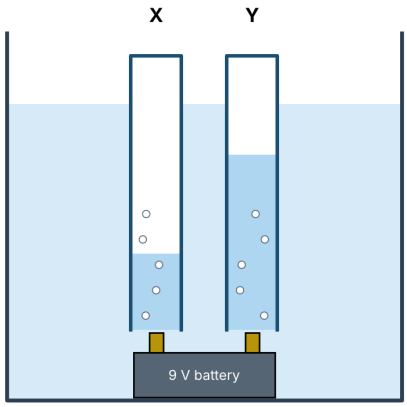
(a) Box P

(b) Box Q

(c) Box R

(d) None of the boxes

3. [Fig. 2] Fig. 2 shows the gases collected in test tubes X and Y when electricity is passed through acidified water. Which statement is correct? **[1]**



(a) X contains oxygen and Y contains hydrogen

(b) X and Y contain the same gas

(c) X contains hydrogen, which burns with a pop sound, and Y contains oxygen, which makes a flame glow brighter

(d) X and Y contain water vapour

4. Which of the following is a uniform mixture? **[1]**

(a) Muddy water

(b) Sprout salad

(c) Oil and water

(d) Air

5. Brass is an alloy of **[1]**

(a) copper and tin

(b) copper and zinc

(c) iron and carbon

(d) iron and sulfur

6. When a mixture of iron filings and sulfur powder is heated strongly, the black mass formed **[1]**

(a) is a compound with properties different from iron and sulfur

(b) is attracted by a magnet

(c) is a mixture of iron and sulfur

(d) can be separated into iron and sulfur by a magnet

Questions 7 and 8 consist of two statements – Assertion (A) and Reason (R). Answer these questions by selecting the appropriate option given below:

7. Assertion (A): The black mass obtained on heating iron filings with sulfur is not attracted by a magnet.
Reason (R): A new substance, iron sulfide, with properties different from those of iron, is formed. **[1]**

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

(B) Both A and R are true, and R is not the correct explanation of A.

(C) A is true but R is false.

(D) A is false but R is true.

8. Assertion (A): Dust particles in the air are considered pollutants.
Reason (R): Dust particles are an integral part of air. **[1]**

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

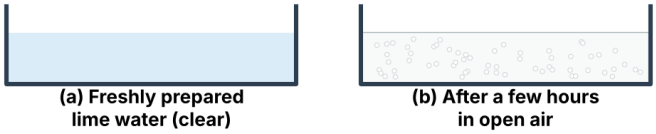
(B) Both A and R are true, and R is not the correct explanation of A.

(C) A is true but R is false.

(D) A is false but R is true.

SECTION B — Short Answer Questions (2 marks each)

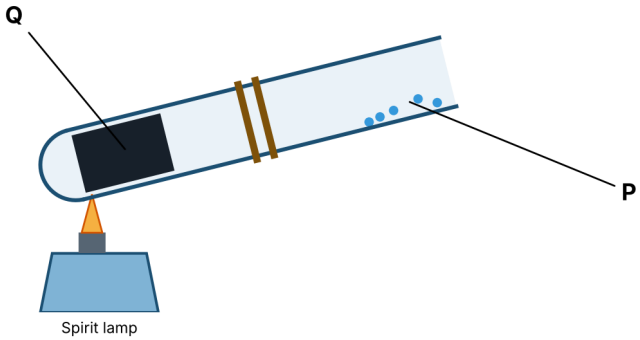
9. [Fig. 3] Fig. 3 shows lime water freshly prepared in a petri dish (a), and the same lime water left in the open air for a few hours (b). **[2]**



(a) Why does the lime water turn milky? Name the gas of the air that is responsible.

(b) Write the word equation for the reaction.

10. [Fig. 4] Fig. 4 shows dry sugar being heated in a boiling tube. After some time, a black residue Q is left at the bottom and droplets P appear near the open end. **[2]**



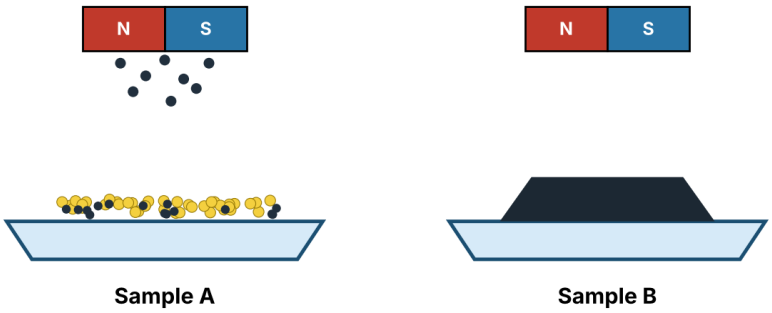
(a) Name the black residue Q and the liquid P.

(b) What does this show about sugar: is it an element or a compound?

11. Classify each of the following as an element, a compound or a mixture: gold, carbon dioxide, brass, sulfur. **[2]**

SECTION C — Long Answer Questions (4 marks each)

12. [Fig. 5] Sample A is a mixture of iron filings and sulfur powder. Sample B is the black mass obtained by heating Sample A. A magnet is moved over each sample, as shown in Fig. 5. **[4]**



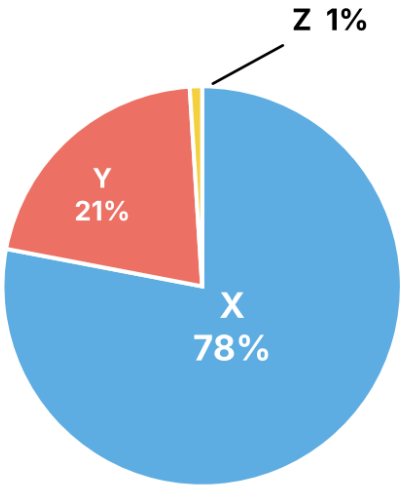
(i) Which sample is attracted by the magnet? Give a reason. [1]

(ii) Name Sample B and state whether it is a mixture or a compound. [1]

(iii) A little dilute hydrochloric acid is added to Sample A. Name the gas evolved and give the test for it. [1]

(iv) Dilute hydrochloric acid is added to Sample B. Name the gas evolved and describe its smell. [1]

13. [Fig. 6] Fig. 6 shows the composition of air by volume. X, Y and Z are its parts. **[4]**



(i) Name the gases X and Y. [1]

(ii) Which of the two, X or Y, supports combustion? [1]

(iii) Name any two substances present in part Z. [1]

(iv) Why is air called a uniform mixture and not a compound? [1]

14. Differentiate between a mixture and a compound on the basis of: (i) how they are formed [1] (ii) their composition [1] (iii) properties of the components in them [1] (iv) method of separating the components [1] **[4]**

15. Give scientific reasons: **[4]**

(i) Stainless steel is considered a mixture. [1]

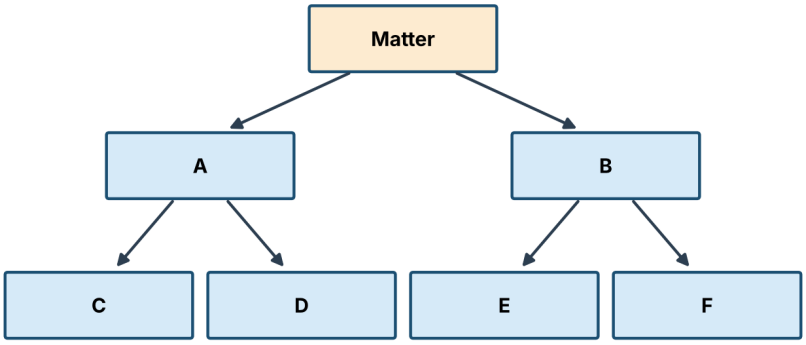
(ii) Hydrogen and oxygen in water cannot be separated by physical methods. [1]

(iii) Salt can be recovered from salt solution by evaporation, but sodium and chlorine cannot be obtained from salt in this way. [1]

(iv) A packet of milk marked ‘pure’ is not a pure substance according to science. [1]

SECTION D — Case-Based / Practical Questions (5 marks each)

16. [Fig. 7] Case: Fig. 7 shows a chart in which all matter is classified. The boxes A, B, C, D, E and F have been left unnamed. A and B are the two main classes of matter; C and D are the two kinds of A; E and F are the two kinds of B. **[5]**



(i) Name A (the class with only one type of particle) and B. [1]

(ii) Name C and D (C: the simplest substances that cannot be broken down further). [1]

(iii) Give one example each of C and D. [1]

(iv) Name E and F (E: components evenly distributed; F: components visible and unevenly distributed). [1]

(v) In which box, E or F, would you place (a) seawater and (b) muddy water? [1]

17. Case: Rani dissolved common salt in water and then heated the solution until all the water had evaporated; white salt was left behind. She next heated a spoonful of sugar strongly in a boiling tube. The sugar turned brown, then black, and droplets of water collected near the open end of the tube. **[5]**

(i) Is the salt solution a uniform or a non-uniform mixture? [1]

(ii) Name the physical process by which Rani recovered the salt. [1]

(iii) Name the black substance left behind when sugar was heated. [1]

(iv) What do the products show about sugar: is it an element or a compound? Give a reason. [1]

(v) Is sodium chloride an element or a compound? Give a reason. [1]

— End of Question Paper —