Practice Paper

CBSE Class 8 Science (Curiosity) — Chapter 9: The Amazing World of Solutes, Solvents, and Solutions

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. When common salt is dissolved in water, water is the **[1]**

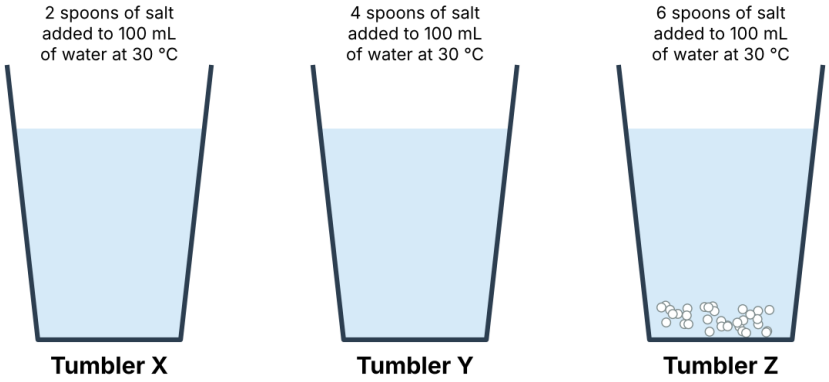
(a) solute

(b) solvent

(c) precipitate

(d) solubility

2. [Fig. 1] In Fig. 1, 2, 4 and 6 spoons of salt were stirred into 100 mL of water at 30 °C in tumblers X, Y and Z respectively. Which solution is certainly saturated? **[1]**



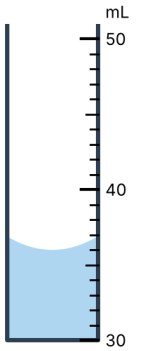
(a) Tumbler X

(b) Tumbler Y

(c) Tumbler Z

(d) Tumblers X and Y

3. [Fig. 2] Fig. 2 shows water in a measuring cylinder. What is the reading? (Read the bottom of the meniscus.) **[1]**



Partial view of a measuring cylinder (each small division = 1 mL)

(a) 34 mL

(b) 36 mL

(c) 38 mL

(d) 40 mL

4. The SI unit of density is **[1]**

(a) m^3/kg

(b) $kg \cdot m^3$

(c) N/m^2

(d) kg/m^3

5. A block has a mass of 54 g and a volume of 20 cm^3. Its density is **[1]**

(a) 2.7 g/cm^3

(b) 3.4 g/cm^3

(c) 1.08 g/cm^3

(d) 74 g/cm^3

6. On heating, the density of a substance generally **[1]**

(a) increases

(b) decreases

(c) does not change

(d) becomes zero

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): Fish find it harder to get enough oxygen in warm water than in cold water.
Reason (R): The solubility of oxygen in water decreases as the temperature increases. **[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): The density of a substance depends on the shape of the object.
Reason (R): Density is the mass of a unit volume of a substance. **[1]**

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

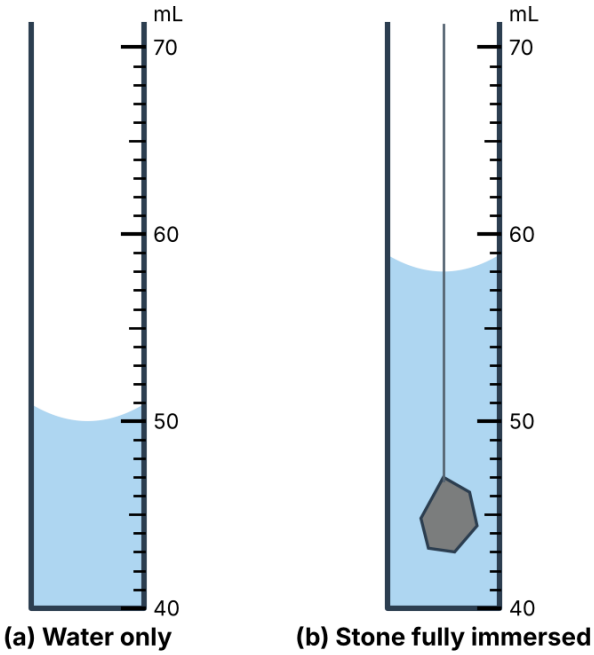
(B) Both A and R are true, and R is not the correct explanation of A.

(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 the level of water in a measuring cylinder before (a) and after (b) a stone tied to a thread is lowered into it. Each small division is 1 mL. **[2]**

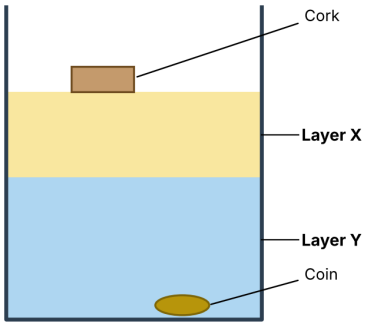


(a) Water only **(b) Stone fully immersed**

(a) Find the volume of the stone.

(b) If the mass of the stone is 24 g, find its density.

10. [Fig. 4] In Fig. 4, two liquids that do not mix are in a beaker. Layer X is oil and layer Y is water. A cork floats on layer X and a coin lies at the bottom. **[2]**



Two liquids that do not mix

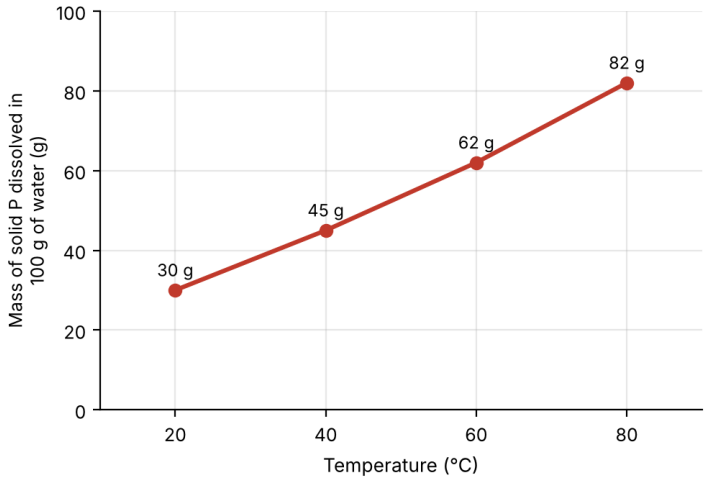
(a) Which is denser, oil or water? Give a reason from the figure.

(b) Why does the coin sink?

11. (a) Define solubility. [1] (b) How does the solubility of most solids in water change when the temperature is increased? [1] **[2]**

SECTION C — Long Answer Questions (4 marks each)

12. [Fig. 5] Fig. 5 shows how many grams of a solid P dissolve in 100 g of water at different temperatures. **[4]**



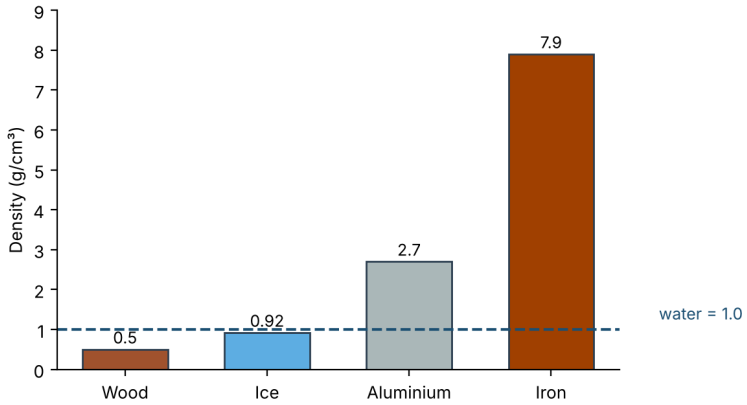
(i) How much of P dissolves in 100 g of water at 40 °C? [1]

(ii) How much P is needed to make a saturated solution in 200 g of water at 60 °C? [1]

(iii) A saturated solution of P in 100 g of water at 80 °C is cooled to 40 °C. How much solid P settles out? [1]

(iv) State the effect of temperature on the solubility of P. [1]

13. [Fig. 6] Fig. 6 shows the densities of four materials. The dashed line shows the density of water. **[4]**



(i) Which of these materials will float on water? [1]

(ii) What is the relative density of aluminium with respect to water? [1]

(iii) Find the mass of 50 cm^3 of iron. [1]

(iv) Ice and water are the same substance. Why does ice float on water? [1]

14. A metal block measures 10 cm × 5 cm × 4 cm and has a mass of 540 g. (i) Find its volume. [1] (ii) Find its density. [1] (iii) Find its relative density with respect to water. [1] (iv) Will it float or sink in water? Give a reason. [1] **[4]**

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

(i) Every sip of home-made ORS tastes the same. [1]

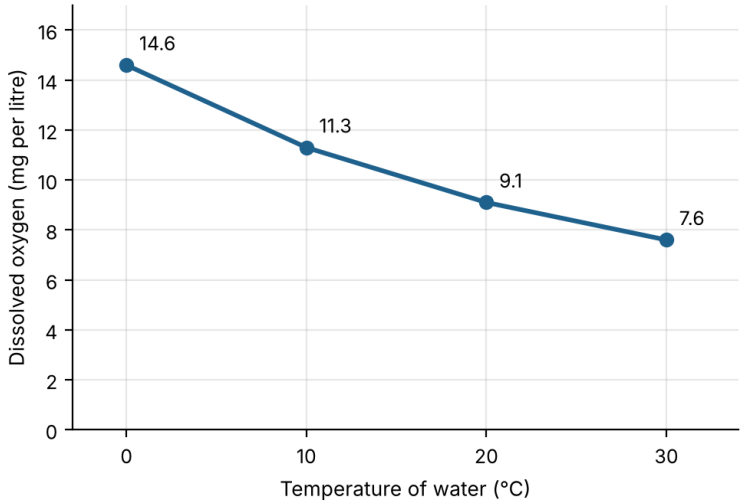
(ii) A hot air balloon rises in the air. [1]

(iii) Undissolved solute in a saturated solution dissolves on heating the solution. [1]

(iv) In some non-uniform mixtures, such as sawdust and water, the sawdust floats while sand sinks. [1]

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

16. [Fig. 7] Case: A student measured the oxygen dissolved in pond water at different temperatures and drew the graph in Fig. 7. **[5]**



(i) How much oxygen is dissolved in water at 10 °C? [1]

(ii) How does the solubility of oxygen change as the temperature increases? [1]

(iii) Name the type of mixture formed when a gas dissolves in water. [1]

(iv) Why do fish and other aquatic animals find it harder to survive in warm water? [1]

(v) How does this trend differ from that of most solids dissolved in water? [1]

17. Case: Meera bought a 1-litre pack of oil. The label says the net weight is 910 g. She wants to measure out exactly 70 mL of the oil for cooking. She has measuring cylinders of 50 mL, 100 mL and 250 mL capacity. The 100 mL cylinder reads to 1 mL and the 250 mL cylinder reads to 2 mL. **[5]**

(i) Find the density of the oil in g/mL (1 L = 1000 mL). [1]

(ii) Will the oil float or sink in water? Give a reason. [1]

(iii) Find the relative density of the oil with respect to water. [1]

(iv) What will happen to the density of the oil if it is heated? [1]

(v) Which of the three cylinders is the best for measuring 70 mL? Give a reason. [1]

— End of Question Paper —