Practice Paper

CBSE Class 8 Science (Curiosity) — Chapter 7: Particulate Nature of Matter

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. In the solid state, the constituent particles **[1]**

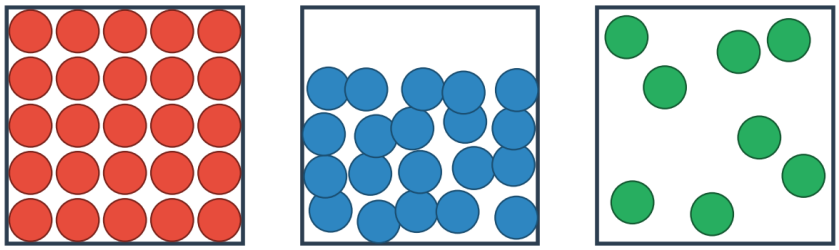
(a) move freely in all directions

(b) are held in fixed positions and can only vibrate

(c) are very far apart from each other

(d) have negligible forces of attraction between them

2. [Fig. 1] Fig. 1 shows the arrangement of particles in three boxes P, Q and R. Which box represents a substance that has a fixed volume but no fixed shape? **[1]**



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

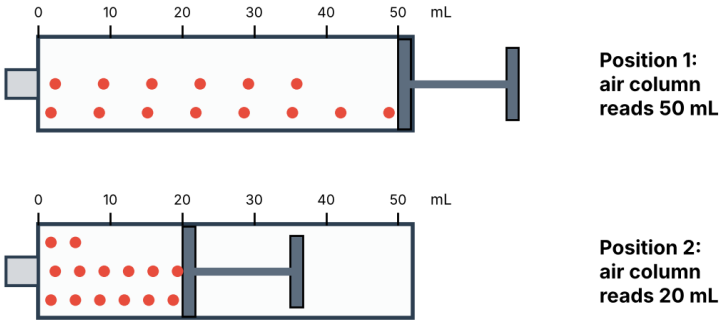
(a) Box P

(b) Box Q

(c) Box R

(d) Both Box P and Box Q

3. [Fig. 2] In Fig. 2, a syringe with its nozzle closed holds some air. When the plunger is pushed from position 1 to position 2, the volume of air falls from 50 mL to 20 mL. This shows that **[1]**



(a) the air particles are destroyed

(b) the air particles become smaller

(c) there are large spaces between the air particles, which get reduced

(d) the air particles stop moving

4. The minimum temperature at which a solid melts to become a liquid at atmospheric pressure is called its **[1]**

(a) melting point

(b) boiling point

(c) freezing point

(d) evaporation point

5. Fluids are substances that flow and do not retain a fixed shape. Which of the following are fluids? **[1]**

(a) Solids and liquids

(b) Solids and gases

(c) Only gases

(d) Liquids and gases

6. The fragrance of an incense stick burning in one corner reaches the whole room because **[1]**

(a) the fragrance particles are heavier than air

(b) air particles do not move

(c) the particles of air are constantly moving and spread the fragrance particles

(d) the particles of the fragrance stop moving after some time

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): Water takes the shape of the container in which it is poured, but its volume remains the same.
Reason (R): The particles of a liquid can move within a limited space, but the attractions between them keep them close together. **[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): When sugar dissolves in water, the sugar particles are destroyed.
Reason (R): The sugar particles occupy the spaces between the water particles. **[1]**

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

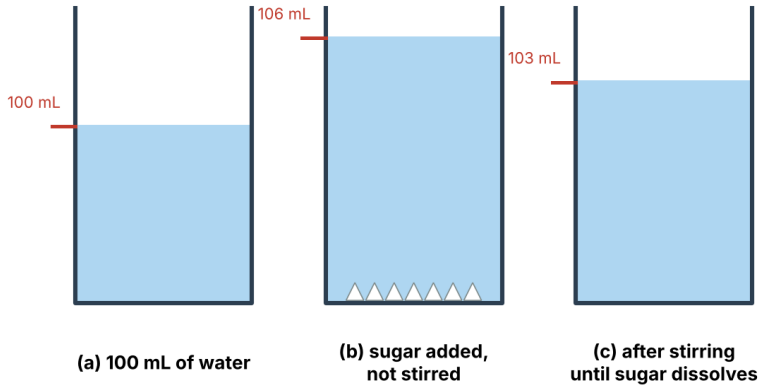
(B) Both A and R are true, and R is not the correct explanation of A.

(C) A is true but R is false.

(D) A is false but R is true.

SECTION B — Short Answer Questions (2 marks each)

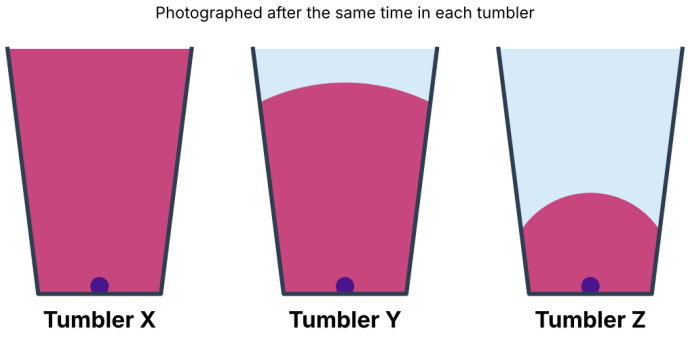
9. [Fig. 3] Fig. 3 shows the level of 100 mL of water in a beaker (a), after sugar is added (b), and after the sugar has been stirred until it dissolves (c). **[2]**



(a) Why does the water level fall from 106 mL in (b) to 103 mL in (c)?

(b) What does this show about the particles of water?

10. [Fig. 4] A small grain of potassium permanganate is dropped into three tumblers X, Y and Z, one containing hot water, one at room temperature and one with ice-cold water. Fig. 4 shows the pink colour in each tumbler after the same time. **[2]**



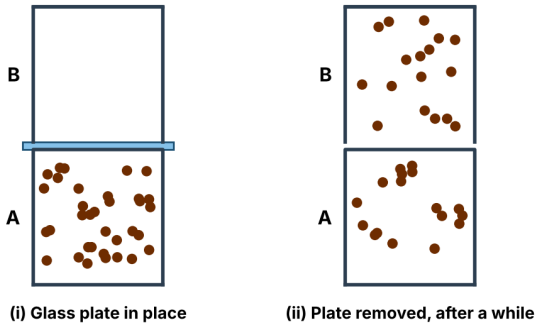
(a) Which tumbler contains the hot water?

(b) Give a reason for your answer.

11. Why do solids have a fixed shape and a fixed volume? **[2]**

SECTION C — Long Answer Questions (4 marks each)

12. [Fig. 5] Fig. 5(i) shows brown smoke trapped in gas jar A, with an empty gas jar B placed over it and separated by a glass plate. Fig. 5(ii) shows the jars a little while after the plate was removed. **[4]**



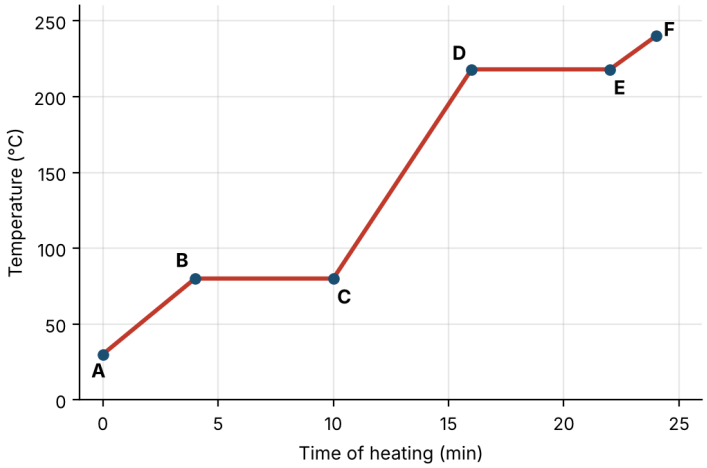
(i) What do you observe in Fig. 5(ii)? [1]

(ii) What does it show about the movement of the particles of a gas? [1]

(iii) Which two properties of gases does this activity illustrate? [1]

(iv) Would a solid placed in jar A spread into jar B in the same way? Give a reason. [1]

13. [Fig. 6] Fig. 6 shows the melting points of four solids. **[4]**



(i) Which solid has the strongest interparticle attractions? Give a reason. [1]

(ii) Which solid has the weakest interparticle attractions? [1]

(iii) Define melting point. [1]

(iv) What happens to the particles of a solid when it is heated to its melting point? [1]

14. Compare solids, liquids and gases on the basis of: (i) interparticle spacing [1] (ii) interparticle attraction [1] (iii) movement of particles [1] (iv) shape and volume [1] **[4]**

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

(i) We cannot see the sugar after it dissolves in water, yet the water tastes sweet. [1]

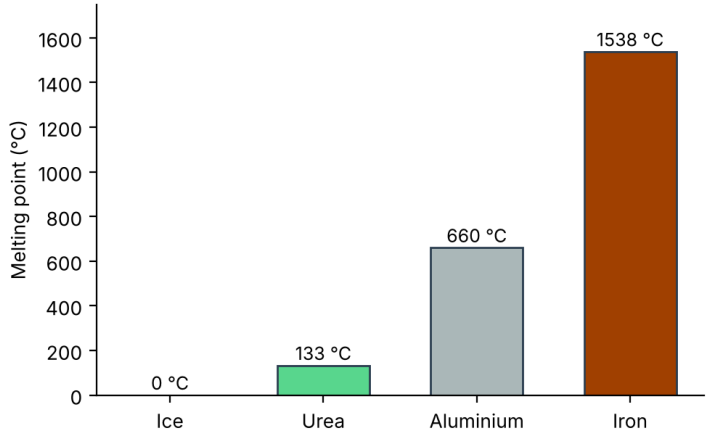
(ii) Sea water tastes salty although the salt is not visible. [1]

(iii) Milk spilled on a table spreads out, but the glass tumbler keeps its shape. [1]

(iv) Gases mix with each other easily, but solids do not. [1]

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

16. [Fig. 7] Case: A solid substance S was heated steadily and its temperature was noted every minute. The graph of temperature against time is shown in Fig. 7. **[5]**



(i) What is the melting point of S? [1]

(ii) What is the boiling point of S? [1]

(iii) In which state(s) is S between points B and C? [1]

(iv) The temperature stays constant between B and C even though heat is supplied. What happens to the heat energy during this time? [1]

(v) Describe the movement of the particles of S between C and D. [1]

17. Case: Meera lit a candle. Near the flame, the solid wax melted into liquid wax, which rose through the wick and changed into wax vapour. After a while the flame was put out, and the liquid wax around the wick turned back into solid wax. **[5]**

(i) Name the three states of wax mentioned in the passage. [1]

(ii) In which state are the interparticle attractions the strongest? [1]

(iii) In which state do the particles move freely in all directions? [1]

(iv) What happens to the vibrations of the particles of solid wax when it is heated? [1]

(v) Is the melting of wax a physical or a chemical change? Give a reason. [1]

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