CLASS 8 · SCIENCE

Particulate Nature of Matter

Sample paper · 15 questions · 22 marks

10 objective questions × 1 mark. Five written-response questions: 12 marks. Write your working where needed. Suggested time: 45 minutes. Answers and marking guidance follow the questions.

Original Evater practice material aligned with these school topics. Not an official NCERT paper or marking scheme. No automatic grading is implied.

Section A · Objective questions (10 marks)

1. The particle model says that all matter is made of:

A. Only visible grains

B. Pure light

C. One continuous sheet

D. Extremely small particles with spaces between them

2. Grinding a piece of jaggery into a fine powder changes:

A. Jaggery into a new element

B. Only the size of each piece; every speck is still jaggery

C. Sweetness into saltiness

D. The substance itself

3. A metal spoon keeps its shape no matter which container it is placed in, because:

A. Metal has no particles

B. Spoons dislike bowls

C. Its particles fly freely

D. Its particles are strongly held in fixed positions

4. Honey poured into a jar slowly takes the jar's shape because:

A. Honey is a gas

B. Its particles stay close but can move past each other

C. Honey has no particles

D. Jars attract honey

EVATER

5. A syringe filled with air, its tip closed, can be pushed in a little. This shows that:

A. Air is a solid

B. Gas particles have large spaces between them that can be squeezed smaller

C. Syringes are soft

D. Air has no particles

6. An agarbatti lit in one corner soon smells across the whole room because:

A. The room shrinks

B. Gas particles are in constant motion and spread through the air, mixing with it

C. Fragrance travels by wires

D. Smoke is heavy

7. Sugar mixes faster in hot milk than in cold milk because:

A. At higher temperatures the particles move faster, so mixing and dissolving happen more quickly

B. Cold milk has no particles

C. Sugar is afraid of cold

D. Hot milk is sweeter

8. A spoonful of salt stirred into a pot of dal makes the whole pot taste salty because:

A. The dissolved salt particles spread uniformly among the particles of the liquid

B. Stirring creates salt

C. Dal has no taste of its own

D. Salt multiplies

9. A wet handkerchief dries faster on a sunny railing than in a closed room because:

A. Sunlight glues water down

B. Closed rooms add water

C. The railing drinks the water

D. Warmth increases the motion of water particles, so evaporation is faster

10. On a hot afternoon, solid ghee in a jar turns liquid. This change is:

A. Rusting

B. A physical change called melting

C. A chemical change

D. Burning

EVATER

Section B · Written responses (12 marks)

Attempt all five. Use a separate sheet if you need more space. The marks for each question are shown.

11. State four main ideas of the particle model of matter. [2 marks]

12. Ice, water and steam are the same substance. Using the particle model, explain why they behave so differently. [2 marks]

13. A particle-model animation shows solid particles completely motionless and liquid particles with no attraction between them. Identify and correct both modelling errors. [2 marks]

14. Two sealed model boxes contain the same number of particles. In A the particles are closely packed and vibrate about fixed positions; in B they are far apart and move freely. Identify the model states, compare compressibility, and explain why the particle count alone does not determine volume. [3 marks]

15. A wet pavement dries after the rain stops. Explain where the water goes, and why the pavement dries sooner on a windy day. [3 marks]

EVATER

Answers & marking guidance

Use these after attempting the paper. Accept equivalent correct reasoning and sensible units. These are Evater model answers, not an official marking scheme.

Section A · 1 mark each

1. D — Matter consists of tiny particles; the spaces, motion and attraction between them explain how materials behave.

2. B — Breaking or grinding is a physical change; the tiny grains remain the same substance.

3. D — In solids, strong interparticle attractions hold particles in fixed positions, giving a fixed shape and volume.

4. B — Liquid particles are close together but not fixed, so liquids flow and take the shape of their container.

5. B — Gases are compressible because their particles are far apart with large interparticle spaces.

6. B — Diffusion in gases is fast because their particles move freely and spread into all available space.

7. A — Heating increases particle motion, which speeds up spreading and dissolving.

8. A — On dissolving, the particles of the solute spread evenly throughout the liquid, so every part tastes the same.

9. D — Evaporation speeds up when heating increases particle motion and moving air carries the vapour away.

10. B — Melting is a physical change: the particles gain energy and move more freely, but no new substance forms.

EVATER

Section B · Model answers

11. Any four: matter is made of tiny particles; there are spaces between the particles; particles are in constant motion; particles attract one another; the arrangement and motion of particles differ in solids, liquids and gases; heating increases particle motion while cooling decreases it.

Marking: Half mark per correct idea, up to 2 marks.

12. In ice the particles are tightly packed in fixed positions and only vibrate, so ice is hard with a fixed shape. In water the particles are close but can move past each other, so it flows and takes the container's shape. In steam the particles are far apart and move freely, filling all available space. The substance is the same; the arrangement, spacing and motion of its particles differ.

Marking: 1 mark for solid versus liquid behaviour; 1 mark for gas behaviour, both explained through particle arrangement and motion.

13. Solid particles are not motionless: they vibrate about fixed positions. Liquid particles remain close and attract one another, but can move past one another; the attraction has not vanished.

Marking: 1 mark for solid vibration; 1 mark for liquid attraction with mobility.

14. A models a solid; B models a gas. A is difficult to compress because its particles are already close together, whereas B is readily compressed by reducing the large spaces. Equal particle counts do not require equal volumes because the spacing and arrangement differ.

Marking: 1 mark for solid/gas identification; 1 mark for the compressibility comparison using spacing; 1 mark for explaining why equal counts do not imply equal volume.

15. The water evaporates: its particles, always in motion, escape from the surface into the air as vapour. Wind carries away the vapour-rich air near the surface and brings drier air, so more water particles can leave quickly. On a still day the air near the wet surface stays humid and drying is slower. No new substance is formed, so evaporation is a physical change.

Marking: 1 mark for evaporation as particles escaping into air; 1 for wind removing vapour and speeding drying; 1 for recognising it as a physical change.

Topic references

NCERT Class 8 Science, Curiosity, Chapter 7: Particulate Nature of Matter.

https://ncert.nic.in/textbook/pdf/hecu107.pdf

Concept reference only. Questions and model answers are original Evater practice material, not an official NCERT paper.

Questions, contexts, values, options and model answers in this edition were written for Evater. Source references support the concepts; textbook exercises, illustrations and third-party question-bank wording are not reproduced. Edition: 16 November 2026.

EVATER