CBSE Important Questions Class 9 Science Chapter 1: Here are the important questions for Chapter 1 Matter in Our Surroundings. Practicing these questions will help reinforce your understanding of key concepts such as the states of matter, their properties and the differences between physical and chemical changes.

Solving these questions enhances problem-solving skills and prepares you for exams. Moreover, they provide a solid foundation for more advanced topics in science. Make sure to review and practice regularly for the best results.

CBSE Important Questions Class 9 Science Chapter 1 Overview

These questions for Class 9 Science Chapter 1 Matter in Our Surroundings has been created by subject experts of Physics Wallah.

By focusing on these important questions, learners can strengthen their foundational knowledge and enhance their exam preparation ultimately improving their grasp of scientific principles.

CBSE Important Questions Class 9 Science Chapter 1 PDF

The PDF link for the CBSE Important Questions for Class 9 Science Chapter 1 Matter in Our Surroundings is available below.

By accessing the PDF, learners can effectively review and practice essential topics, ensuring they are well-prepared for their examinations. Make sure to utilize this valuable material to strengthen your grasp of matter and its properties.

CBSE Important Questions Class 9 Science Chapter 1 PDF

CBSE Important Questions Class 9 Science Chapter 1 Matter in Our Surroundings

Here we have provided CBSE Important Questions Class 9 Science Chapter 1 Matter in Our Surroundings-

Q.1. Which of the following matter?

Chair, air, love, smell, hate, almonds, thought, cold, cold drink, the smell of perfume.

Ans: As we can define matter as any 'physical substance', hence almonds, air, chair, the smell of perfume, cold drink and smell can be considered as matter.

Q.2. Convert the following temperature to a Celsius scale:

i) The temperature is 300 K.

Ans: When we use: K = 273 + ^{0}C:

^{0}C = K - 273

= 300 - 273

= 27^{0}C

ii) The temperature is 573 K

Ans: When we use: K = 273 + ^{0}C:

^{0}C = 573 - 273

= 300 ^{0}C

What is the physical state of water at:

(a) A temperature of 250 ^{0}C

Ans: The boiling point of water is 100 ^{0}C, hence the physical state of water at 250^{0}C will be gaseous.

(b) A temperature of 100 ^{0}C

Ans: The boiling point of water is 100 ^{0}C, hence at 100 ^{0}C water is in the gaseous state.

Q.3. For any substance, why does the temperature remain constant during the change of state?

Ans: The reason behind the temperature of substance or matter remaining constant during a change of state is that during the change of state all of the heat or energy provided to particles of matter is utilized to take the particles of matter apart from each other.

Suggest a method to liquefy atmospheric gases.

Ans: One method to liquefy atmospheric gases is to decrease the temperature and increase the pressure.

Q.4. Arrange the following substances in increasing order of forces of attraction between the particles— water, sugar, and oxygen.

Ans: The order of increasing forces of attraction between the particles is as follows:

Oxygen< water< sugar.

Q.5. What is the physical state of water at-

(a) A temperature of 25 ^{0}C?

Ans: The physical state of water at 25 ^{0}C is liquid.

(b) A temperature of ^{0}C?

Ans: The physical state of water at ^{0}C is solid.

(c) A temperature of 100^{0}C?

Ans: The physical state of water at 100^{0}C is gas.

Q.6. If the humidity in the air increase then the rate of evaporation:

(a) decrease

(b) increase

(c) remain same

(d) both (b) and (a) depending upon the temperature

Ans: The correct option is (a) decrease.

Q.7. Which of the following statements is correct?

(a) boiling is a bulk phenomenon and evaporation is a surface phenomenon (b) boiling is a surface phenomenon and evaporation is a bulk phenomenon (c) boiling and evaporation both are a surface phenomenon

(d) boiling and surface both are bulk phenomenon

Ans: The correct option is (a) boiling is a bulk phenomenon and evaporation is a surface phenomenon.

Q.8. If the temperature of a place is increase then evaporation:

(a) decrease

(b) increase

(c) remain same

(d) none of the above

Ans: The correct option is (b) increase.

Q.9. Which of the following has the least inter atomic spacing?

(a) solid

(b) liquid

(c) gases

(d) plasma

Ans: The correct option is (a), solid.

Q.10. If you decrease the surface area and increase the temperature, then the rate of evaporation

(a) increase

(b) decrease

(c) remain same

(d) may increase or decrease depending upon other factors

Ans: The correct option is (c), remain the same.

Q.11. What will be the corresponding temperature in degree centigrade for 300 K:

(a) 30 ^{0}C

(b) 300 ^{0}C

(c) 27 ^{0}C

(d) 673 ^{0}C

Ans: The correct option is (c), 27 ^{o}C.

Q.12. Liquid to gas and gas to liquid changes are called:

(a) vaporization and condensation

(b) condensation and vaporization

(c) sublimation and condensation

(d) condensation and sublimation

Ans: The correct option will be (a), vaporization and condensation.

Q.13. Physical state of water at is respectively

(a) liquid, solid, and gas

(b) solid, liquid, and gas

(c) solid, gas, and liquid

(d) gas, solid, and liquid

Ans: The correct option is (a), liquid, solid and gas.

Q.14. Observation: The smell of hot sizzling food reaches you several meters away, but to get the smell from cold food, you have to go close.

Answer: This happens because when food is hot, the particles are moving faster, which helps the smell spread quickly through the air. In contrast, cold food has slower-moving particles, so its smell doesn't travel as far.

Q.15. Arrange the following in order of increasing density: air, exhaust from chimneys, honey, water, chalk, cotton, and iron.

Answer: The order of increasing density is: air < exhaust from chimneys < cotton < water < honey < chalk < iron.

Q.16. Why does ice float on water?

Answer: Ice floats on water because its structure contains many empty spaces, making it lighter than the water. This is why it can stay on the surface.

Q.17. Why does a desert cooler cool better on a hot dry day?

Answer: A desert cooler works better on hot dry days because the heat makes water evaporate quickly. This rapid evaporation cools the air more effectively compared to days with high humidity.

Q.18. How does water in an earthen pot become cool during summer?

Answer: Water in an earthen pot becomes cool because the pot allows some water to evaporate through tiny holes. This evaporation cools the remaining water inside the pot.

Q.19. Why does our palm feel cold when we put acetone, petrol, or perfume on it?

Answer: When we apply acetone, petrol, or perfume to our palm, these liquids evaporate quickly. This process takes heat away from our skin, making our palm feel cold.

Q.20. Why can we sip hot tea or milk faster from a saucer rather than a cup?

Answer: We can sip hot tea or milk faster from a saucer because it has a larger surface area. This allows more heat to escape quickly through evaporation, cooling the liquid faster.

Q.21. What type of clothes should we wear in summer?

Answer: In summer, we should wear clothes that allow sweat to evaporate easily, which cools us down. Cotton is a good choice because it absorbs sweat well and promotes evaporation.

Q.20. Convert the following temperatures to the Celsius scale.

a) The temperature is 293 K

Answer: When we use: $^{o}C = K - 273$

$= 293 - 273$

$= 20\ ^{o}C$

b) The temperature is 470 K

Ans: When we use: $^{o}C = K - 273$

$= 470 - 273$

$= 197\ ^{o}C$

Q.21. Convert the following temperatures to the Kelvin scale.

a) The temperature is 25 ^{o}C

Answer: When we use: $K = {}^{o}C + 273$

$= 25 + 273$

$= 298\ K$

b)The temperature is 373 ^{o}C

Ans: When we use: $K = {}^{o}C + 273$

$= 373 + 273$

$= 656\ K$

Q.22. A diver is able to cut through water in a swimming pool. Which property of matter does this observation show?

Answer: This observation shows that water particles are held together by weak forces. When the diver applies an external force, the particles can move apart, allowing the diver to cut through the water.

Q.23. What are the characteristics of the particles of matter?

Answer: The characteristics of particles of matter include:
i. Particles are always moving.
ii. There are spaces between the particles.
iii. Particles are attracted to each other, which keeps them together.

Q.24. (a) Tabulate the differences in the characteristics of states of matter.

Answer: Here's a table showing the differences in the characteristics of the three states of matter:

Property	Solid	Liquid	Gas
Shape	Fixed shape	Takes the shape of the container	No definite shape
Volume	Fixed volume	Fixed volume	No fixed volume
Compressibility	Not compressible	Slightly compressible	Highly compressible
Rigidity	Rigid	Not rigid	Not rigid
Fluidity	Not fluid	Fluid	Fluid
Kinetic Energy	Lowest	Moderate	Highest
Density	Highest	Moderate	Lowest

(b) Comment upon the following: rigidity, compressibility, fluidity, filling a gas container, shape, kinetic energy, and density.

Answer:

Rigidity: This is the ability of matter to keep its shape when forces are applied. Solids have rigidity.

Compressibility: This is the ability to be squashed when pressure is applied. Some liquids and all gases can be compressed.

Fluidity: This is the ability to flow and change shape when a force is applied. Liquids and gases exhibit fluidity.

Filling a gas container: Gases can be easily compressed and fill any container they are in, which makes them cost-effective to transport.

Shape: Solids have a definite shape, while liquids take the shape of their container, and gases have no fixed shape.

Kinetic Energy: Particles in matter are always moving. Solids have the least movement and kinetic energy, while gases have the most movement and highest kinetic energy. The order is: solid < liquid < gas.

Density: Density is the mass of a substance per unit volume, calculated as density = mass/volume.

Q.25. Give reasons:

(a) **A gas fills completely the vessel in which it is kept.**

Answer: Gas particles have very weak attraction to each other, allowing them to move freely in all directions and fill the entire container.

(b) **A gas exerts pressure on the walls of the container.**

Answer: Gas particles move around quickly and collide with the walls of the container. These collisions create pressure on the walls.

(c) **A wooden table should be called a solid.**

Answer: A wooden table has tightly packed particles with a definite shape and clear edges, which are characteristics of solids.

(d) **We can easily move our hand in the air, but to do the same through a solid block of wood, we need a karate expert.**

Answer: In air, the particles are far apart with weak attractions, making it easy to move our hand. However, in a solid like wood, the particles are closely packed with strong attractions, requiring a lot of force to separate them, which is why a karate expert is needed.

Benefits of Practicing CBSE Important Questions Class 9 Science Chapter 1

Conceptual Clarity: Working through important questions helps students reinforce their understanding of key concepts related to matter, including its properties and states. This foundational knowledge is important for further studies in science.

Enhanced Problem-Solving Skills: Regular practice improves students ability to analyze and solve different types of problems. It also familiarizes them with various question formats which can boost their confidence during exams.

Exam Preparation: Important questions are based on frequently asked topics, helping students focus their study efforts effectively. This targeted approach can lead to better performance in exams.

Time Management: By practicing important questions students can learn to manage their time more efficiently while solving problems.

Self-Assessment: Working on important questions allows students to evaluate their understanding and identify areas where they may need further revision or assistance. This self-assessment can guide their study plans.