Science for Class 9

1. Matter in Our Surroundings

Q 1 What is the normal room temperature?

Mark (1)

Q 2 Are the melting point of the solid state and the freezing point of the liquid state of a substance different.

Mark (1)

Q 3 A certain substance ‘A’ cannot be compressed but takes up the shape of any container in which it is placed. What is the physical state of 'A'?

Mark (1)

Q 4 A rubber band changes its shape when stretched. Can it be regarded as solid?

Mark (1)

Q 5 What are volatile liquids?

Mark (1)

Q 6 Which scale of measuring the temperature is the best?

Mark (1)

Q 7 Define diffusion.

Mark (1)

Q 8 Is matter continuous or particulate?

Mark (1)

Q 9 What are the factors on which evaporation depends?

Mark (1)

Q 10 Define humidity.

Mark (1)

Q 11 Define evaporation.

Mark (1)

Q 12 Why do the states of matter differ?

Mark (1)

Q 13 Define melting point.

Mark (1)

Q 14 Write the full form of L.P.G. & C.N.G.

Mark (1)

Q 15 Inspite of being solid, a sponge is compressible. Comment.

Mark (1)

Q 16 Define matter.

Mark (1)

Q 17 What produces more severe burns, boiling water or steam?

Mark (1)

Q 18 Arrange the following substances in increasing order of force of attraction between the particles - water, sugar and oxygen.

Mark (1)

Q 19 Suggest a method to liquify atmospheric gases.

Mark (1)

Q 20 What is sublimation?

Mark (1)

Q 21 What are the factors that determine the state of a substance?

Marks (2)

Q 22 Why does our palm feel cold when we put some acetone, petrol or perfume on it?

Marks (2)

Q 23 Liquids generally have lower density as compared to solids. But ice floats on water. Why?

Marks (2)

Q 24 Why do we sweat on a humid day?

Marks (2)

Q 25 Why do solids generally lack the property of diffusion?

Marks (2)

Q 26 How will you demonstrate that air contains water vapours?

Marks (2)

Q 27 We use the terms gas and vapours both to represent the gaseous state of a substance. Are the two terms same or there is some difference in them?

Marks (2)

Q 28 Can matter change its state? State the conditions under which it changes.

Marks (2)

Q 29 Why do we see water droplets on the outer surface of a glass containing ice-cold water?
Marks (2)

Q 30 Explain why there is no rise in temperature of water when it starts boiling although it is still being heated.
Marks (2)

Q 31 What is dry ice? Why it is known so?
Marks (2)

Q 32 What are the different states of matter? Why do matter exist in these different states?
Marks (2)

Q 33 Why is ice at 273k is more effective in cooling than water at same temperature?
Marks (2)

Q 34 Give reasons.
a. Naphthalene balls disappear with time without leaving any residue.

b. We can get the smell of perfume sitting several metres away.

Marks (2)

Q 35 What is the physical state of water at
a)30^{o}C?
b)0^{o}C?
c)100^{o}C?

Marks (2)

Q 36 Convert the following temperatures into the Kelvin scale.
(a) 25^{0}C
(b) 373^{0}C
Marks (2)

Q 37 What type of clothes should we wear in summer?
Marks (2)

Q 38 How does the water kept in an earthen pot (matka) become cool during summer?
Marks (2)

Q 39 Why are we able to sip hot tea or milk faster from a saucer rather than a cup?
Marks (2)

Q 40 Why does a desert cooler cool better on a hot dry day?
Marks (2)

Q 41 For any substance, why does the temperature remain constant during its phase change?
Marks (2)

Q 42 What is the physical state of water at
(a) 25^{o}C ?
(b) 100^{o}C ?

Marks (2)

Q 43 Arrange the following in order of increasing density.
exhaust from chimneys, Air, cotton, Iron, water, honey, chalk.

Marks (2)

Q 44 Give reasons for -
The smell of hot sizzling food reaches you several meters away, but to get the smell from cold food you have to go close.

Marks (2)

Q 45 How does evaporation cause cooling?

Marks (3)

Q 46 Explain giving an activity that the liquids differ in their relative diffusion rates.

Marks (3)

Q 47 Differentiate between evaporation & boiling.

Marks (3)

Q 48 Give two reasons to justify.

(a) Water at room temperature is a liquid

(b) An iron almirah is a solid at room temperature.

Marks (3)

Q 49 Give reasons-

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

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

(C) A wooden table should be called a solid.

Marks (3)

Q 50 What are the characteristics of the particles of matter?

Marks (3)

Q 51 A diver is able to cut through water in a swimming pool. Which property of matter does this observation prove?

Marks (3)

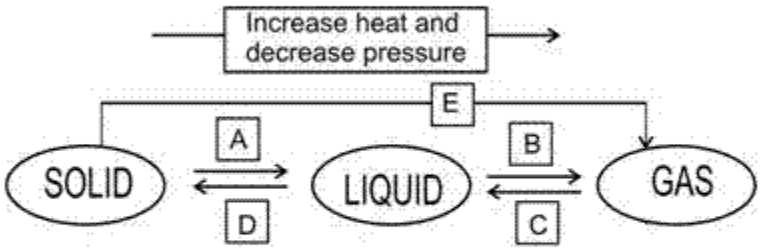
Q 52 What will happen if we put an animal cell or a plant cell into a solution of sugar or salt in water?

Marks (5)

Q 53 Define the following terms.
Fusion, latent heat of fusion, boiling point, latent heat of vaporization and sublimation.

Marks (5)

Q 54 Name A, B, C, D & E in the following diagram.



Marks (5)

Q 55 (a)When common salt is added to water, it dissolves. Name the property which is exhibited by this activity.
(b)The melting points of solids (A), (B), (C) and (D) are 50°C, 250°C, 110°C and 160°C respectively. Name the solid which has strongest inter particle forces of attraction.
(c)Suppose you are going out on a hot summer day. Should you wear a cotton T-shirt or nylon T-shirt? Give reason also.
(d)Which is more volatile: Liquid A (Boiling point 85°C) or water (Boiling point 100°C)?

Marks (5)

Q 56 (a)A diver can cut through water while swimming. Name the property of matter shown by this activity.
(b) We sprinkle water on rooftop in summer. Why?
(c)Write three methods that can be used to dry up a wet dress quickly.

Marks (5)

Q 57 (a)We can smell an incense stick lightened at the other end of the room. Name three properties of matter responsible for this.
(b)When you heat water, you see that the particles of water starts moving and their motion increases on increasing the temperature. Why?
(c)We observe water drops on the outer surface of a glass tumbler filled with ice- cold water. Why?

Marks (5)

Q 58 (a)If we break a piece of chalk, a wooden block, and an iron nail, we will observe that it is very difficult to break an iron nail, wooden block requires lesser force, while chalk can be broken easily. What can be concluded from these observations?
(b)Though sponges can be compressed yet they are considered as solid. Give reasons.
(c)Give an example of diffusion of solid in liquid.

Marks (5)

Q 59 (a)Can we consider water a fluid? Give suitable explanation also.
(b)Which one out of water and wood can be compressed easily and why?
(c)Give an example of diffusion of liquid in liquid.

Marks (5)

Q 60 (a)Name the process in which there is movement of particles from the region of their high concentration to the region of low concentration.
(b)The smell of which of the following can be detected quickly and why?
(i) Spicy hot food cooking in kitchen.
(ii) Ice cream kept at room temperature.
(c) Write two factors that affect the rate of diffusion.

Marks (5)

Q 61 (a)Why is it possible to compress oxygen?
(b)Why gases have fluidity?
(c)Density of gases is low. Give reason.
(d)You have copper, water and oxygen. Which will have highest density and why?
(e)Name two fuels which are based on the property of compressibility of gases?

Marks (5)

Q 62 (a)Which out of wood, sugar, water and hydrogen will exert highest pressure on the walls of container?
(b)Freezing point of water is 0°C, what will be its melting point?
(c)What do you understand by liquefaction?
(d)Why clothes dry up quickly on a windy day?

Marks (5)

Most Important Questions

Q 1 Which of the following is not matter
(a)Plants (b) smell of food (c) Stars (d) Particles of sand

Q 2 From the given list prepare two separate lists one comprising of matter and other comprising of things which are not categorised as matter
Iodine, heat, bunch of rose, sound, electricity, rock, feeling of happiness, river Ganga

Q 3 Name the *Panch Tatva* as described by ancient Indian philosophers.

Q 4 Why cold is not a matter but cold drink is?

Q 5 What property of gases makes them used as convenient domestic fuel?

Q 6 Which of the following will have strongest forces of attraction between its particles?
Air, Water, Oxygen, Iron

Q 7 When we add few crystals of copper sulphate to water, after sometime the solution turns blue. Name the process involved in it.

Q 8 Which of the following has fixed shape and fixed volume both
(a)1kg Milk (b)1kg of Copper (c)1kg Nitrogen (d)1 kg Water

Q 9 Which of the following objects can be most compressed and why?

Coal powder, Chlorine, Ice cream, Milk

Q 10 Particles of copper does not diffuse. Why?

Q 11 Convert the following temperature to Kelvin

(i)57˚C (ii)13˚C (iii)100 ˚C

Q 12 Convert the following temperature to degree Celsius

(i)773K (ii) 333K

Q 13 A substance has definite volume but its shape is not definite. State if the substance is solid, liquid or gas?

Q 14 In which of the following rate of diffusion is fastest
(i)Oxygen is passed in water. (ii) Water is added to acetic acid
(iii)Oxygen is passed in hydrogen (iv) Air is passed in molten iron

Q 15 Name a gas which is used as domestic fuel.

Q 16 Write the name of process when following change takes place
(i) Molten iron is allowed to cool.
(ii) Ethyl alcohol is heated over 76 ˚C.
(iii) Wet clothes are spread out

Q 17 Melting point of a solid (X) is 300^0 C and that of other solid (B) is 550^0 C. Which of them is expected to have stronger forces of attraction between its constituent particles?

Q 18 Why does the temperature in thermometer not rise till acetone is completely changed into vapours?

Q 19 Why latent heat is given this name?

Q 20 Water kept in earthen pots become cool in summer. Explain.

Q 21 Explain why camphor disappears without leaving any residue?

Q 22 Which of the following causes more severe burns caused by steam or boiling water?

Q 23 Bottle of nail polish remover must be closed tightly after use. Why?

Q 24 Boiling point of a liquid is 443 K. Find its condensation point.

Q 25 Explain why ice is more effective in cooling than water at the same temperature.

Q 26 Fusion is the process of conversion of
(a) liquid into gas (b) solid into gas (c) solid into liquid (d) liquid into solid

Q 27 Which of the following has more amount of energy and why
(i) Water at 0˚C (ii) Ice at 0˚C

Q 28 Boiling point is the temperature at which
(a)vapour pressure < atmospheric pressure (b) vapour pressure = atmospheric pressure (c) (a)vapour pressure > atmospheric pressure
(d) (a)vapour pressure =2 atmospheric pressure

Q 29 On hot humid day we feel comfortable while sitting under fan. Why?

Q 30 Suggest a method to liquefy oxygen