Class 6th chemistry Lesson 3 Matter

Answer the following question in short.

1. Name the temperature at which:

a) A liquid change into a gas.

b) A solid change into a liquid.

Ans.a)100 degree Celsius.

b)0 degree celsius.

2. Name one common substance which can be easily changed from one state to another by heating or cooling.

Ans. Water is one common substance which can be easily changed from one state to another by heating or cooling.

3. A liquid can change into gas, either by evaporation or boiling explain the difference between two process.

Ans. A liquid can be changed into gas either by evaporation or boiling. The difference between the two process are.

Boiling : The process in which a liquid substance changes into a gas rapidly on heating is called boiling.

Evaporation: evaporation is a slow process that it involves the change of liquid into Gas state from the surface.

4. Why do gases show maximum compression?

Ans. A gas show maximum compression because its particles are far apart and there are large spaces between them . which can be reduced by compression.

5. What is Brownian movement?

Ans. The zigzag movement of particles of matter is called Brownian movement.

6. Write some characteristics properties of liquid.

Ans. Some characteristic properties of liquid are:

1. Liquids have a fixed volume but they have no fixed shape.
2. Liquid take the shape of the vessel.
3. Liquid have moderate to high densities.

7. Liquid generally flow easily. give reason.

Ans. Liquid generally flow easily because its particles are able to slide over one another due to slightly weaker interparticle force of attraction.

8. Why do solids have fixed volume?

Ans. In solids the particles are closely packed. There is a strong force of attraction between the particles of a solid which holds them together in fixed positions.

9. Why do gases compress easily?

Ans. A gas can be compressed easily because it particles are far apart and there are large space between them.

10. What are the effects of heat on matter?

Ans. The effects of heat on matter are:

1. Interconversion of States of matter.
2. Expansion in matter.
3. Chemical changes in matter.

11. Why does matter expand on heating?

Ans. On heating the particles gain energy and move rapidly .The particles of matter starts moving a part with a gain of energy.

12. What is a chemical change? Also give example .

Ans. Those changes in which new substance are formed are called chemical changes .Examples : burning of wood or paper.

13. Give an example of Brownian motion in gases from your daily life.

Ans. Sometimes, when a beam of Sunlight enters the room we can see Tiny dust particles suspended in air which are moving rapidly this is an example of Brownian Movement in gases.

Class 6th chemistry lesson 3 Matter

Answer the following questions in detail.

Question 1. Define the following terms:

a) Matter: anything that occupies space and has mass is called matter.

b) Cohesion: the attraction force between the particles of matter is called Cohesion.

c) Melting: the process of change of a solid into liquid on heating is called melting.

d) Freezing: the process of change of a liquid into solid on cooling is called freezing.

e) Condensation: the process of change of a gas into liquid on cooling is called condensation.

f) Boiling: the process of change of a liquid into gas at a fixed temperature is called boiling.

g) Evaporation: the process of change of a liquid into gas at any temperature is called evaporation.

h) sublimation: the process of conversion of a solid directly into gas on heating is called sublimation.

Question 2. Differentiate between the following:

a) Solid , liquid and gas.

b) Expansion and contraction

Answer 2.solid:1. Solids have a fixed shape and a fixed volume.

2. Solids cannot be compressed much.

3. Solids have high densities. They are heavy.

4. Solids do not take the shape of the container.

5. Solids do not flow.

Liquid : 1. Liquids have a fixed volume but they have no fixed shape.

2. Liquids take the shape of the vessel in which they are placed.

3. Liquids have moderate to high densities.

4. Like solids liquids cannot be compressed much.

5. Liquids generally flow easily.

Gas: 1. Gases have neither a fixed shape nor a fixed volume.

2. Gases acquire the shape and volume of the vessel in which they are kept.

3. Cases can be compressed easily.

4. Gases have very low densities.

5. Gases flow easily.

Answer 2.b)Expansion: property of matter to increase volume and decrease density on heating is known as expansion.

Contraction: the process of becoming or of making something become smaller or shorter is known as contraction.

Question 3. Why do solids liquids and gases have different properties? Explain giving example.

Answer 3. The following properties of particles decide whether a given substance will exist as a solid ,a liquid or a gas :

1. The spaces between the particles: the spaces between the particles are the minimum in solids, a little more liquids

and the maximum in gases.

2. The force of attraction between particles: the force of attraction between the particles are the strongest in solids, lesser strong in liquids and negligible in gases.

3. The amount of movement of particles: the movement of particles is the minimum in solid, more in liquids and the maximum gases

Question 4. Explain how heat bring about chemical change in a matter ? Explain giving examples.

Answer 4. Chemical change is also one of the effect on matter on heating. During chemical change if substance undergoes a change in its chemical composition. Burning of candle is one of the example of chemical change. When we light the candle then the wax present in its start burning to produce heat and light. The burning of wax also produces carbon dioxide water vapour and soot which all go into air. We cannot combine all the products of burning of wax to get back the original candle. Hands burning of candle wax is an example of chemical change.

Question 5. Explain giving example that particles of matter has interparticle space between them.

Answer 5.Aim: to show the presence of space between the particles of matter.

Material required: a beaker ,pebbles and 75 grams of sugar.

Procedure: 1. Take a beaker and add pebbles in it.

2. 75 grams of sugar into the beginning mix.

3. Observe the level of the content in the beaker.

Observations:1. The level of contents in the beaker remains same.

2. The sugar particles get fit into the spaces between the pebbles.

Inference: the smaller particles of matter occupy spaces between the bigger particles.Here smaller particles are sugar particles and bigger particles are pebbles.(draw figure 3.5 given on page number 52 with this answer)

Choose the correct option.

1. A few substances are arranged in the increasing order of 'force of attraction' between their particles. Which one of the following represent the correct arrangement.

Ans.d) salt ,juice, air

2. Which of the following statement is incorrect?

Ans.a) the particles of matter are very , very small

3. Which one of the following statements is not true?

Ans.b) the particles in liquid are arranged in a regular pattern.

4. When we dissolve salt in a glass of water the level of water does not increase. Which of the following statement is correctly explain this statement?

Ans.b) the particles of matter has interparticle space.

5. Which of the following is not correct for solids?

Ans.c) the interparticle space is maximum in case of solids

6. Given below are some characteristics of a certain type of matter.

1. It's particles can move freely and flight passed over one another.
2. Its particles are held Together by moderately strong intermolecular force of attraction .

Its particle do not have definite position.

Which of the following matter show the given properties?

Ans.c)air

7. If there is an increase in temperature, what will be its effect on the rate of evaporation?

Ans.a) increases

8. When a gas is transferred from a small container to a big container, it occupies all the available space to stop choose the correct reason for this.

Ans.a) the particles of gas are free to move anywhere

9. Which of the following is correct during melting of solid substance?

Ans.b) molecules of solid move farther apart

10. Which of the following statement is correct?

Ans.d) all of these

11. Which of the following happens when we cool a liquid?

Ans.d) both a and c

12. When the burning candle

Ans.d) all of these

13. In which process solid changes into gas?

Ans.a) sublimation

14. One of the following does not undergo sublimation. This one is:

Ans.a) Iodine

Fill in the blanks.

1. The temperature at which liquid changes into vapour is its atmospheric pressure.
2. The molecules are at a far distance in gases in comparison to liquid.
3. The zigzag movement of particles suspended in liquids and gases is called Brownian motion, named after the scientist Robert Brown.
4. The increase in size of an object on heating is called expansion.
5. In a chemical change properties of some new substance formed as different from the original one.
6. The process of changing gas to liquid by cooling is called condensation.
7. The movement of particles is minimum in solid.
8. Solid have high densities

Write T for true and F for false statements.

1. Matter occupies space and has mass.T
2. Atoms and molecules are the particles which make up matter.T
3. As the distance between the particles of matter increases force of attraction between them also increases. F
4. Liquid are less dense than solid. T
5. In liquid the position of particles is not fixed. T
6. When a liquid is heated comedy the heat energy makes its particles move even faster. T
7. Gases expand maximum and solids contract minimum. T
8. Burning of a paper is not a chemical change.T

Name the following

1. The process in which particles of matter gain energy and rapidly on heating. Expansion
2. The process of conversion of gas into liquid on cooling. Condensation
3. The process of conversion of liquid into gas on heating at any temperature. Boiling
4. The temperature at which a liquid changes into a gas at atmospheric pressure. 100 degree Celsius
5. The process of conversion of solid into liquid on heating. Melting

6. State of matter which have neither a fixed shape not a fixed volume. Gas
7. A solid substance that undergoes sublimation. Camphor