



# CHEMISTRY

**BOOKS - BHARATI BHAWAN**

**CHEMISTRY (HINGLISH)**

**MATTER IN OUR SURROUNDINGS**

**Example**

1. Convert  $30^{\circ} C$  to kelvin scale.



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2. Convert 575 K to Celsius scale.



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## Objective Questions

1. This process for the change of a solid directly into its vapour is called

A. evaporation

B. ebullition

C. condensation

D. sublimation

**Answer: D**



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**2. The process of evaporation causes**

A. heating

B. cooling

C. temperature to rise

D. none of these

**Answer: B**



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**3.** As the pressure of air decreases, the boiling point of a liquid

A. increases

B. decreases

C. remains fixed

D. none of these

**Answer: B**



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**4.** The conversion of a gas into liquid is called

A. gasification

B. sublimation

C. condensation

D. freezing

**Answer: C**



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5. The temperature at which a solid changes into liquid is called

A. melting point

B. boiling point

C. eutectic point

D. critical point

**Answer: A**



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**6.** The force that binds the particles of matter together is known as

A. intermolecular space

B. bond

C. intermolecular force

D. nuclear force

**Answer: C**



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7. The smell of perfume spreads out by a process known as

A. evaporation

B. diffusion

C. condensation

D. fusion

**Answer: B**



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**8.** Ice floats on the surface of water because

A. it is heavier than water

B. the density of water is same as that of  
ice

C. ice is lighter than water

D. none of these

**Answer: C**



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**9.** Which of the following statements do not express the properties of a solid?

(i) The particles of a solid have high energy.

(ii) The interparticle forces of attraction in a solid are very weak.

(iii) A solid melts at a fixed temperature.

(iv) The fluidity of a solid is very high.

A. (i) and (ii) only

B. (i), (ii) and (iv)

C. (ii) and (iii) only

D. (iii) and (iv) only

**Answer: B**



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1. A substance is a form of matter that has a ..... composition.



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2. Matter is made up of very small ..... .



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3. The matter in our surroundings exists in three states, ..... in liquids and ..... in gases.



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4. Intermolecular forces of attraction are ..... in solids, ..... in liquids and ..... in gases.



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5. The change of a solid into liquid is called

.....



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6. The change of a liquid into vapour is called

.....



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7. The change of a solid into gas is called ..... .



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8. The change of a solid directly into gas is called .....



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9. Evaporation takes place from the ..... of the liquid, while boiling takes place from the ..... of the liquid.



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10. Rapid evaporation depends on the .....  
area exposed to atmosphere.



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11. Density is measured in ..... .



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**True T Or False F**

1. Matter has no mass.



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2. A substance has a definite composition.



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3. All the material substances contain small particles.



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4. The intermolecular forces in the liquid state of a substance are stronger than those in its solid state.



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5. The space between the particles of a solid is called intermolecular space.



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6. The volume of a gas expands on heating.



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7. Two gases cannot diffuse into each other.



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8. The conversion of a gas directly into solid is called condensation.



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## Very Short Answer Questions

1. What does occupy some space, has mass and offer resistance ?



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2. States of Matter



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3. What is the space occupied by matter called ?



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4. What is intermolecular force of attraction?



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5. A substance has a definite shape and volume . What is it called?





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6. Can a solid flow ?



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7. Is the boiling point of water on a mountaintop the same as that on the ground ?



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8. Water is cooled to  $0^{\circ}C$ . What do you expect to happen ?



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9. What happens when a gas is cooled?



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10. What happens when ammonium chloride is heated ?



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**11.** 25 mL each of water and alcohol are taken in two separate dishes and left exposed to air. What do you expect to observe ?



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**12.** What is the fourth state of matter called ?



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## Short Answer Questions

1. (a) Define matter. Give four examples of matter.

(b) What are the characteristics of matter ?



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2. What is a substance?



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3. What is the difference between solid and liquid states ?



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4. What is sublimation? Give three examples of substances which sublime on heating.



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5. What is freezing point of a liquid?



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**6.** Define latent heat of fusion.



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**7.** What is specific latent heat of vaporization ?



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**8.** How can you show that evaporation causes cooling ?



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9. What is condensation? How is the condensation of a gas carried out ?



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10. Give reasons for the following observation:  
The smell of hot sizzling food reaches you several metres away. But to get the smell from cold food you have to go close.



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11. Give reason of camphor disappears without leaving any residue



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12. A gas exerts pressure on the wall of the container. Assign reason.



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**13.** Give reason of sponge is compressible, through it is a solid.



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**14.** Why does the temperature of a substance remain constant during its melting point or boiling point ?



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15. Give reason of boiling water and steam both have the same temperature ( $100^{\circ}C$ ), but steam causes much severe burns than boiling water.



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## Long Answer Questions

1. What is the difference between solid and liquid states ?



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2. Mention the characteristic properties of a gas.



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3. Can air be compressed?



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4. Explain evaporation and boiling. What is the main difference between the two?



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5. Give reason of you feel cool when you touch a piece of ice.



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6. Give reason of you prefer to wear cotton clothes during summer.



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7. Give reason of water stored in an earthen vessel becomes cool.



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[A Objective Questions I Match](#)

1. Match the names gives in column A with the properties given in column B .



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## li Fill In The Blanks

1. .... of water is very slow on a humid day .

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2. .... occurs throughout the body of a liquid



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3. The conversion of a liquid into its vapour at its boiling point is called .....



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4. The rate of evaporation of a liquid .....  
with increase in humidity .



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5. Evaporation of a liquid at its boiling point does not lead to .....



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6. Fill in the blanks

(a) Evaporation of a liquid at room temperature leads to a ..... effect .

(b) At room temperature the forces of

attraction between the particles of solid substances are .... Than those which exist in the gaseous state.

(c) The arrangement of particles is less ordered in the ... state. However, there is no order in the .... state.

(d)..... is the change of gaseous state directly to solid state without going through the ..... state.

(e) The phenomenon of changes of a liquid into the gaseous state at any temperature below its boiling point is called .....



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7. Solid carbon dioxide is called .....



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8. The kinetic energy of particles in the .....  
state of a substance is maximum



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**iii Write Yes Or No**

1. Does a book offer resistance ?



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2. Do particles of matter attract each other ?



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3. Is it correct to say that particles of a solid are less ordered ?



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4. Is evaporation of water an exothermic process ?



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5. Are the shape and volume of a gas indefinite ?



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**iv Mark The Statements True T Or False F**

1. Matter does not exist without mass .



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2. The gaseous state of a substance has the maximum fluidity .



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3. A substance is said to be a solid when its melting point lies below the room temperature at the normal pressure .



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4. Liquids with low boiling points have greater tendency to evaporate .



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5. Cooling takes place when a boiling liquid evaporate .



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6. Calcium carbonate cannot exist in the liquid or the gaseous state .



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7. Hydrogen gas kept in a vessel spreads throughout the space of the vessel .



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8. Temperature has no effect upon the rate of diffusion .



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**V Multiple Choice Questions Pick The Correct Options S**

1.  $25^{\circ}C$  temperature is equal to

A.  $298.15K$

B.  $25K$

C.  $77^{\circ}F$

D.  $300K$

**Answer: A::C**



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2. Which of the following conditions will accelerate the rate of evaporation of a liquid ?

A. Decrease in temperature

B. Increase in temperature

C. Increase in surface area of the liquid

D. Decrease in surface area of the liquid .

**Answer: B::C**



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3. Which of the following shows the correct order of increasing intermolecular forces of attractions ?

A. water < Air < Petrol < Kerosene

B. Petrol > Water > Kerosene > Air

C. Water > Petrol > Air > Kerosene

D. Air < Petrol < Kerosene < Water

**Answer: D**



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4. In the laboratory, ammonia is collected in a gas jar by the downward displacement of air. Which of the following is correct about it?

A. Ammonia is heavier than air.

B. Ammonia is lighter than air.

C. The density of ammonia is equal to that of air.

D. None of the above.

**Answer: B**



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5. Which of the following statements is (are) incorrect ?

A. Matter is made up of discrete particles.

B. The particles of matter always move along straight paths .

C. At room temperature , the rate of evaporation of alcohol is greater than that of ether .

D. Fluidity of a liquid is its tendency to spread .

**Answer: B::C**



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6. A piece of ice is heated and the temperature is monitored as a function of time .Which of the following figures will justify the observation ?

A. 

B. 

C. 

D. 

**Answer: A**



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7. Which of the following statements is (are) correct ?

A. The processes of evaporation and boiling are the same .

B. Evaporation occurs at the surface of the liquid .

C. Boiling water and its vapour have the same temperature .

D. The temperature of boiling water is more than that of its vapour .

**Answer: B::C**



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8. Dry ice is

A. solid carbon dioxide .

B. solid carbon monoxide

C. liquid ammonia

D. ordinary ice

**Answer: A**



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## B Very Short Answer Questions

1. A substance is incompressible even when it is subjected to very high pressure . What is the physical state of the substance ?



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2. A substance has neither a definite shape nor a definite volume . Name the physical state of the substance .



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3. Name the process that occurs when a pallet of camphor left exposed to air slowly disappears .



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4. A drop of water when spilled on floor spreads out . What is this due to ?



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5. A liquid is converted into vapour below its boiling point . What is the process called ?



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6. What is the space between the particles of a matter called ?



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7. The temperature of a liquid at its boiling point does not change. What is this due to ?



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8. Identify the physical state of matter in which layers of particles slip over each other .



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9. Two solids A and B melt at  $120^{\circ}\text{C}$  and  $150^{\circ}\text{C}$  respectively . Which one of them has more intermolecular forces of attraction?



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10. The temperature of sample of water is found to be  $314\text{K}$  . What is the temperature on the Celsius scale ?



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**11.** Look at the following figures , A and B.



What do you expect to observe when the dishes are exposed to air ?

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**12.** The rate of evaporation of a liquid decreases on a rainy day . Give reason.

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**13.** Name the property which is shown by ammonium chloride but not by sodium chloride .



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**14.** Name the process that occurs when oxygen dissolves in water.



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**15.** What is the process called in which a gas is transformed into a liquid ?



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**16.** Name the term used to denote the conversion of vapour into solid .



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**17.** Is it correct to say that that the melting point of a solid and the freezing point of the molten solid ( i.e., liquid state of the same substance ) are the same ?



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**18.** Can we call the vapour of an alcohol a gas ?



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**19.** Does the evaporation of a liquid occur at the room temperature only ?



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## **C Short Answer Questions**

**1.** Why do we say that stone is a solid ?



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2. Why is carbon dioxide called a gas and not a vapour ?



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3. Give two reasons to justify-

(a) Water at room temperature is a liquid

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



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4. A solid expands upon heating because



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5. How do some animals survive in sea water ?



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6. Which of the following is more easily compressible : Carbon dioxide or methane ?

Give reasons.





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7. Why does the temperature of a substance remain constant during its melting point or boiling point ?



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8. Identify the physical state of the following .

(i) A substance in which the arrangement of particles is fixed .

(ii) A substance having large space between the particles



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9. Explain why does food get quickly cooked in a pressure cooker .



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



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11. " A stone piece sinks in water , whereas a wooden cork floats over it." Explain .



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12. Can a solid diffuse into another solid ? Give an example .



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**13.** What is the difference between gas and vapour ?



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**14.** " The arrangement of particles in the solid state of a substance is more ordered than in its gaseous state ." Explain.



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**15.** "Both boiling water and steam have the same temperature , but water in the form of steam causes more severe burns than boiling water ."Give reasons for this .



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**16.** Describe an activity to show that a liquid when left exposed to air disappears after some time .



**Watch Video Solution**

**17.** Describe an activity to show that different liquids evaporate at different rates .



**Watch Video Solution**

**18.** What is latent heat of fusion? State its units.



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**19.** The following materials are supplied to you: (i) Glass (ii) Ice pieces

Suggest an activity to show that water vapour present in air can be condensed on a cold surface .



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**20.** What will you observe when cotton wool is taken in place of a gas or liquid in the cylinder

of the syringe for conducting experiments on the compressibility of gases ?



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21. What are the characteristics of a liquid ?



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22. Why are gases lighter than solids and liquids ?



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23. What type of clothes should we wear in summer?



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24. Explain the role of temperature and pressure during the liquefaction of a gas . Do both of them play the same role ?



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**25.** Describe an activity to show that the rate of diffusion in a liquid increase with rise in temperature .



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**26.** Rana was in a haste to go to attend a marriage party , but he found that his shirt was yet wet . Suggest some ways by which he may dry his shirt faster .



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**27.** Why does the temperature of a substance remain constant during its melting point or boiling point ?



**Watch Video Solution**

**28.** Give reasons for the

People prefer to wear cotton clothes during summer .



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**29.** Why does our palm feel cold when we put some acetone or petrol or perfume on it?



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**30.** Why are we able to sip hot tea or milk faster from a saucer rather than a cup?



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31. Why is ice at 273k more effective in cooling than water at the same temperature?



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## D Long Answer Questions

1. How does the evaporation of water at ordinary temperature differ from that of boiling water ?



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2. Describe any two factors which bring about change in the physical state of a substance .



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3. Describe an activity to show that particles of matter attract each other .



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4. Tabulate the differences among the solid , liquid and gaseous states of a substance .



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5. What do you mean by evaporation ?  
Describe the factors which determine the rate of evaporation of a liquid .



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6. Describe an activity to demonstrate that a black object absorbs more heat than a white object .



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7. Explain giving reasons that the three states of matter , i.e., solid, liquid and gaseous , are interconvertible .



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**8.** What is latent heat of fusion of ice ?

Describe the changes in temperature when ice taken in a beaker is heated .



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**9.** Give reason for

Liquid have lesser density than solids.



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**10.** Give reason for

Evaporation occurs from the surface of the liquid .



**Watch Video Solution**

**11.** Give reason for

The rate of evaporation of ether is more than that of ethanol .



**Watch Video Solution**

**12.** Give reason for

Though sponge is a solid , it is compressible .



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**13.** Define the gaseous state of a substance .

Mention the important characteristics of the gaseous state.



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**14.** What is sublimation ? How would you purify an impure sample by the process of sublimation ?



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## **15.** Cross word Puzzle

Solve the crossword puzzle using the names of the following processes and the instructions given in the table.





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