

SANJEEVANI PUBLIC SCHOOL
CH : 1
MATTER IN OUR SURROUNDINGS
CLASS : IX
IMPORTANT QUESTIONS

Q1. Give Reasons:

- (a) A gas fills completely the vessel in which it is kept.
- (b) A gas exerts pressure on the wall of the container.
- (c) A wooden table should be called a solid.

Ans:

- a) As we know that gas has neither fixed shape nor fixed volume. Particles of gases move freely at random manner and get the shape and volume of the vessel in which it is kept.
- b) As we know that the particles of gases move freely at random manner so they collided to the walls of the container and this collision is responsible for exert pressure on the wall of the container.
- c) A wooden table should be called solid as wooden table has fixed shape and volume .

Q2. Liquids generally have lower density as compared to solids, but you must have observed that ice floats on water. Find out why?

Ans: Liquid generally have lower density as compared to solids but we must have observed that ice floats on water because liquid water and ice form hydrogen bonds, but ice exist in cage like structure. Due to cage like structure, the molecules of water are not closely packed in the ice but have vacant space between them. Due to this, ice has smaller density than water ice floats on water.

Q3. Convert the following temperature to Celsius scale:

- a) 300K
- b) 573 K

Ans:

a) 300K

$$\begin{aligned} ^\circ\text{C} &= 300\text{K} - 273 \\ &= 27^\circ\text{C} \end{aligned}$$

b) 573 K

$$^\circ\text{C} = 573\text{K} - 273$$

Q4. Convert the following temperature to Celsius scale:

- a) 27^oC
- b) 225^oC

Ans:

a) 27°C

$$K = ^\circ\text{C} + 273 = 27^\circ\text{C} + 273 = 300 \text{ K}$$

b) 225°C

$$K = ^\circ\text{C} + 273 = 225^\circ\text{C} + 273 = 498 \text{ K}$$

Q5. For any substance, why does the temperature remain constant during the change of state?

Ans: During the change of state the temperature remain constant because the heat supplied for the change of state is used up to break up the force of attraction between the particles.

Q6. Why does a desert cooler cool better on hot dry day?

Ans: As we know that humidity is inversely proportional to the evaporation. On hot dry day the humidity is low so the rate of evaporation will be high therefore desert cooler cool better on hot dry day.

Q7. How does the water kept in an earthen pot (matka) become cool during summer?

Ans: The water kept in an earthen pot (matka) become cool during summer because there are numerous fine holes in the earthen pot and the water evaporates by taking the heat from surroundings and as we know that evaporation causes cooling, the water becomes cool.

Q8. Why is ice at 273 K more effective in cooling than water at the same temperature?

Ans: As we know that to become a ice from water, ice loses more heat than water at the same temperature to ice at 273 K more effective in cooling than water.

Q9. What produces more severe burns, boiling water or steam?

Ans: We know that a water to become a steam has to get more heat than boiling water at same temperature due to latent heat of vaporisation. Hence, steam will produce more severe burns than boiling water.

Q10. A sample of water under study found to boil at 102°C at normal atmospheric pressure. Is the water pure? Will this water freeze at 0°C? Comments.

Ans: We know that pure substance always have fix boiling point and melting point at normal atmospheric pressure. In case of water it always boils at 100°C at normal atmospheric pressure. Since, this water boils at 102°C, it is not pure. It contains non – volatile impurity. Therefore this water will freeze below 0°C.

Q11. Boiling point of water on hill station like Simla is lower than Delhi. Why?

Ans: The atmospheric pressure on hill station like Simla is less than Delhi. Hence, the vapour pressure of water becomes equal to atmospheric pressure at a lower temperature on a hill station than in Delhi. Thus the boiling point of water is lower on mountain than in Delhi.

Q12. Doctor's advice to put strips of wet cloth on the forehead of a person having high temperature. Explain.

Ans: When we put strip of wet cloth on the forehead of person having high temperature. The water takes heat from the forehead of the person and evaporate and we know that evaporation causes coolness and relief to the person.

Q13. Write the difference between boiling and Evaporation.

Ans: Difference between boiling and evaporation.

Boiling	Evaporation
Boiling point take place at particular temperature where vapour pressure become equal to atmosphereic pressure.	Evaporation place spontaneously at all temperature
Boiling involved in formation of bubble of the vapour below the surface of the liquid	Evaporation takes place only from the surface of liquid
It is a bulk phenomenon	It is a surface phenomenon
It does not cause cooling effect	It causes cooling effect.

CONFIDENTIAL