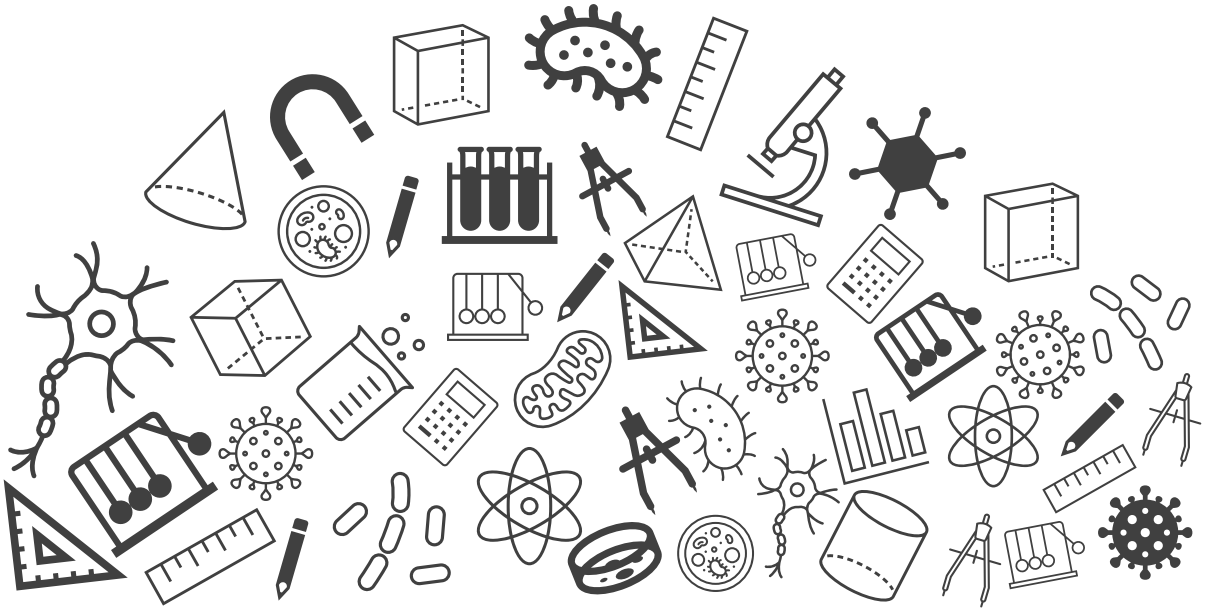
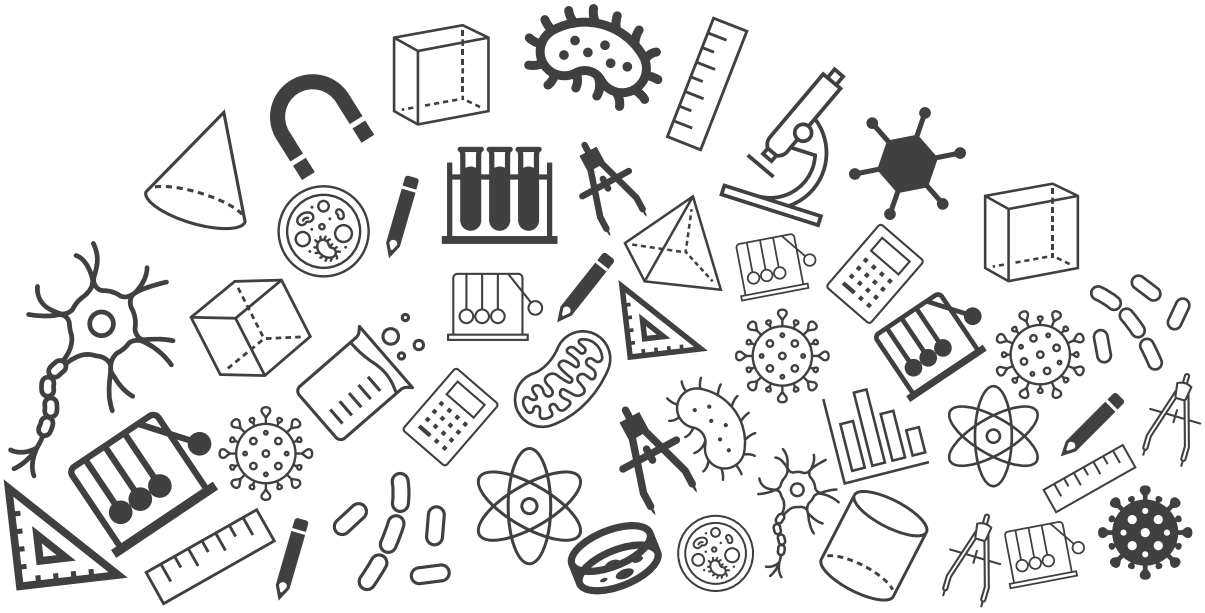
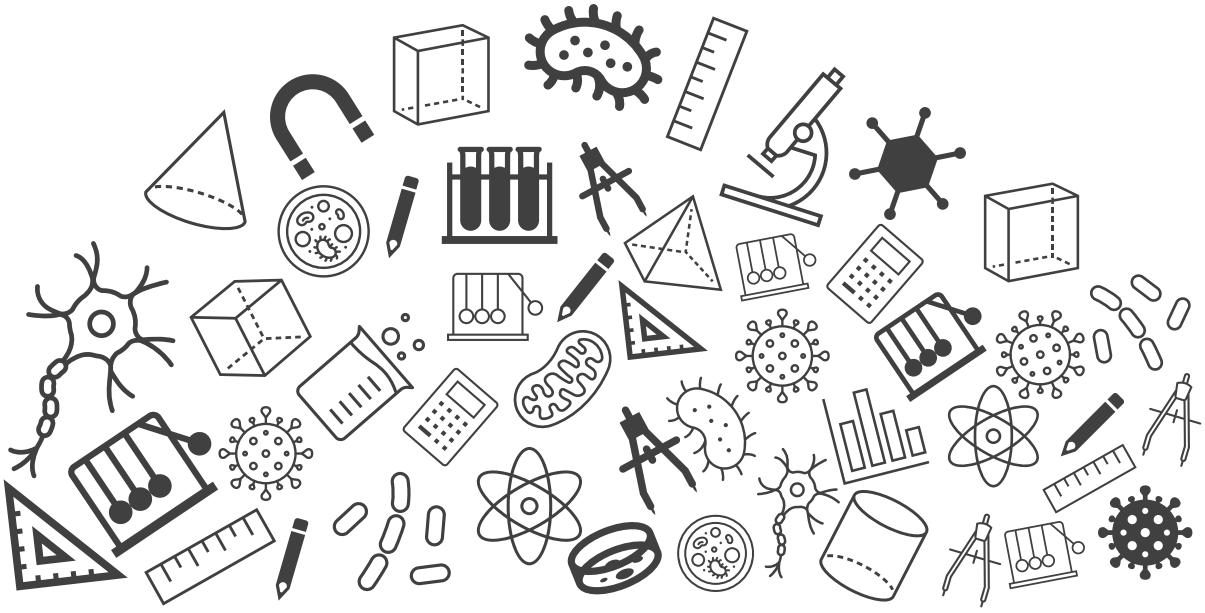
Grade 09
Science Chapter Notes



Chemistry



Matter in Our Surroundings



Topic : Exam Important Questions

1. Explain the consequence of the following condition:
   Perfume is sprayed in one corner of the room.

   [1 Mark]

   Solution:

   When we spray a perfume, the particles of perfume intermix with the particles of air, and reach several metres away. This happens due to diffusion of the particles. Diffusion is the intermixing of particles of two different types of matter on their own.

   [1 Mark]
   [Diffusion, DPS - 2022]

2. How is the interparticle force of attraction related to interparticle spaces?

   [1 Mark]

   Solution:

   The interparticle force of attraction in matter is inversely proportional to the interparticle spaces. As the spaces between the particles increases, particles move apart from each other and the force of attraction between them decreases.

   [0.5 Marks]

   Similarly, if the interparticle space decreases, the interparticle force of attraction increases.

   [0.5 Marks]
   [Interparticle spaces, NCERT]

3. 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.

[2 Marks]

Particles of hot sizzling food possess high kinetic energy and diffuse in air rapidly. Therefore, they reach several metres away and we get the smell of hot food from a distance.

[1 Mark]

Whereas, the particles of cold food possess less kinetic energy. Therefore, the diffusion is less in this case, and they do not reach several metres away. So, we have to go close to get the smell of cold food.

[1 Mark]

4. Name the three states of matter. Give one example of each.

[2 Marks]

Solution:
The three states of matter are solids, liquids, and gases. [0.5 Marks]

An example of each of them are:
a) Solids: Ice [0.5 Marks]
b) Liquids: Cooking oil [0.5 Marks]
c) Gases: Air [0.5 Marks]

[Lakhmir Singh and Manjot Kaur]

5. Name the physical state of matter which can be easily compressed.

[1 Mark]

Solution:
Gases are highly compressible as compared to solids and liquids as they have very weak intermolecular forces of attraction as a result of which they can be compressed easily under pressure. [1 Mark]

[Lakhmir Singh and Manjot Kaur]

6. Explain any three factors affecting evaporation.

[3 Marks]

Solution:

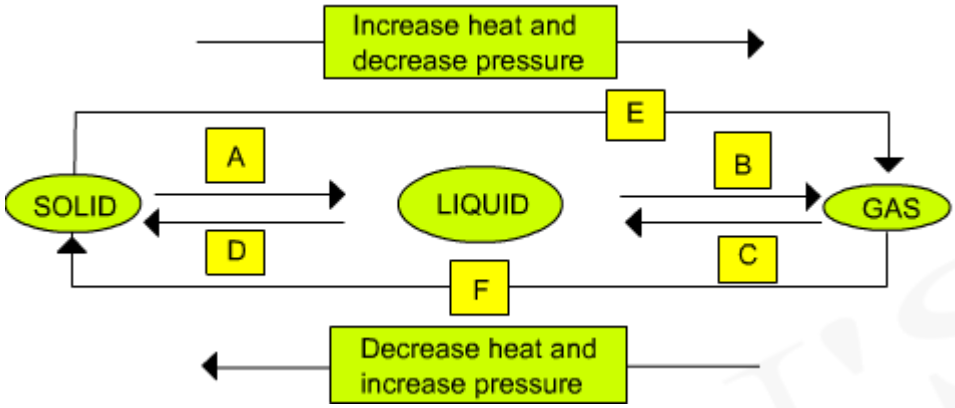
Factors affecting evaporation are given below:

(i) Surface area of the liquid :–
The evaporation depends upon the surface area. If the surface area is increased, the rate of evaporation increases because the high energy particles from the liquid can go into gas phase only through a surface.
[1 Mark]

(ii) Temperature:–
Rate of evaporation increases with increase in temperature. This is because with the increase in temperature, more number of particles get enough kinetic energy to go into the vapour state (or gaseous state).
[1 Mark]

(iii) Humidity in the air:–
The air around us contains water vapour or moisture. The amount of water present in the air is referred to as humidity. The air cannot hold more than a definite amount of water vapour at a given temperature. If the humidity is more, the rate of vaporisation decreases. The rate of evaporation is more if the air is dry.
[1 Mark]

7. Name A, B, C, D, E, and F in the following diagram showing the change of states.
[3 Marks]



In the given flowchart, names for the various processes are as follows:

A: Melting

[0.5 Marks]

B: Vaporisation

[0.5 Marks]

C: Condensation

[0.5 Marks]

D: Freezing

[0.5 Marks]

E: Sublimation

[0.5 Marks]

F: Deposition

[0.5 Marks]

8. Neha by mistake spilled a glass of water on the floor. She mopped the floor but it remained wet. Her mother suggested her to switch on the fan, and after a few minutes she found that all the water disappeared. Based on this, answer the following questions:
(i) What phenomenon was associated with the disappearance of water?
(ii) Why did Neha's mother suggest Neha to switch on the fan?

[2 Marks]

Solution:

(i) Evaporation is the phenomenon which is associated with the disappearance of water on the floor. It is the phenomenon by which a liquid converts into its vapours below its boiling point.

[1 Mark]

(ii) Neha's mother suggested Neha to switch on the fan because the rate of evaporation increases with the increase in wind speed. Hence, the floor will dry faster if the fan is switched on.

[1 Mark]