Science

(Chapter – 1) (Matter in our Surroundings)

(Class – IX)

Exercises

Question 1:

Convert the following temperatures into the Celsius scale.

(a) 300 K **(b)** 573 K

Answer 1:

(a) 300 K = 300 – 273 = 27 ^{0}C

(b) 573 K = 573 – 273 = 300 ^{0}C

Question 2:

Convert the following temperatures into the Kelvin scale.

(a) 25OC **(b)** 373OC

Answer 2:

(a) 25OC = 25 + 273 = 298 K

(b) 373OC = 373 + 273 = 646 K

Question 3:

Give reasons for the following observations.

(a) Naphthalene balls disappear with time without leaving any solid.

(b) We can get the smell of perfume sitting several meters away.

Answer 3:

(a) Naphthalene shows the property of sublimation. Evaporation of naphthalene takes place easily and so it disappears during course of time without leaving a solid.

(b) Perfumes vaporize very fast and its vapours diffuse into air easily. That is why we can smell perfume sitting several meters away.

Question 4:

Arrange the following in increasing order of forces of attraction between the particles – water, sugar, oxygen.

Answer 4:

Oxygen < Water < Sugar.

Question 5:

What is the physical state of water at —

(a) 25°C **(b)** 0°C **(c)** 100°C?

Answer 5:

(a) Liquid

(b) Solid and Liquid

(c) Liquid and Vapours

Question 6:

Give two reasons to justify:

(a) Water at room temperature is a liquid.

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

Answer 6:

(a) Water at room temperature is a liquid because it has fluidity and has definite volume but no definite shape.

(b) An iron almirah is a solid at room temperature because it is rigid and has a definite shape.

Question 7:

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

Answer 7:

Ice at 273 K is less energetic than water. It is because of the difference in the latent heat of fusion which is present in water at the same temperature in the form of extra energy.

Question 8:

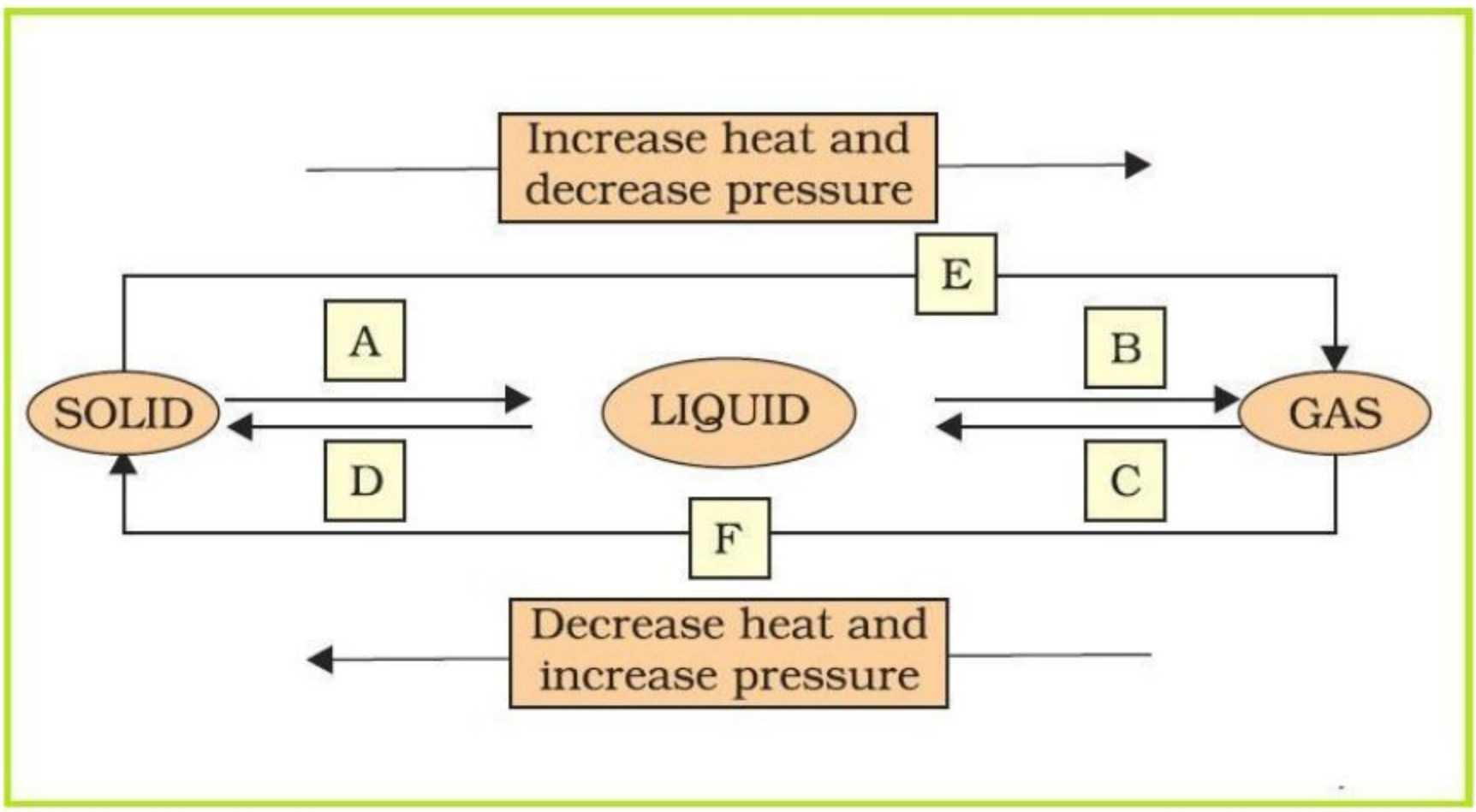
What produces more severe burns, boiling water or steam?

Answer 8:

Steam produces more severe burns than boiling water. This is because steam has more energy than boiling water, present in it in the form of latent heat of vaporization.

Question 9:

Name A, B, C, D, E and F in the following diagram showing change in its state:



Answer 9:

A → Melting

B → Boiling

C → Condensation

D → Solidification

E → Sublimation

F → Sublimation