CASE-STUDY BASED QUESTIONS CHEMISTRY CH-1 MATTER

Answer the questions on the basis of your understanding of the following paragraph and the related studied concept.

4.1. On a hot summer day, Rahul, a student of Class IX went for jogging with his younger brother MEHUL. After a run of about 3 Km both the brothers were sweating profusely. MEHUL was more uncomfortable than RAHUL as he was feeling very hot. MEHUL then asked RAHUL, why was he not feeling that uncomfortable. RAHUL then explained the reason.

1-The rate of evaporation:

(a) is inversely proportional to temperature of liquid.

(b) is directly proportional to temperature of liquid.

(c) is independent of temperature of liquid.

(d) increases with decrease in wind speed.

2- Evaporation causes:

(a) cooling

(b) heating

(c) increase in density

(d) decrease in density

3- What is the effect of the surface area of liquid on evaporation?

(a) Greater the surface area, lower is the evaporation.

(b) Lower the surface area, greater is the evaporation.

(c) Greater the surface area, greater is the evaporation.

(d) None

4- Choose the correct statement:

(a) Humidity has no effect on evaporation.

(b) With decrease in humidity, rate of evaporation increases.

(c) With decrease in humidity, rate of evaporation increases.

(d) With increase in humidity, rate of evaporation increases.

4.2. When it rained, MEHUL was ecstatic and wanted to go for a long drive. He insisted his father on the same. His dad was initially reluctant but ultimately agreed. MEHUL asked his dad to switch on the A.C. of car. His dad was initially reluctant but ultimately agreed. So, his dad explained the reason behind it.

Now answer the following questions:

(a) What is condensation?

(b) What is vaporization?

(c) What happens when you drive your car in rainy season with all windows closed and A.C. on. What is the phenomenon involved?

(d) What other precautions should be taken while driving your car in a rainy season?

1- Condensation is change from:

(a) solid to liquid phase

(b) liquid to solid phase

(c) liquid to vapor phase

(d) vapor to liquid phase

2- During condensation:

(a) latent heat of vaporization is given out by vapors.

(b) latent heat of vaporization is absorbed by vapors.

(c) latent heat of fusion is given out by vapors.

(d) latent heat of fusion is absorbed by vapors.

3- Boiling point of water:

(a) 32^{o}F

(b) 100^{o}F

(c)212^{o}F

(d)373^{o}F

4- What is the amount of water vapor present in air is called?

(a) Evaporation

(b) Humidity

(c) Precipitation

(d) Condensation

4.3. The heating curve of a substance at one atmosphere is shown. Analyze the curve and answer the following questions:

1- What is the physical state of the substance at 'B'?

2- Which process does RS represent?

3- If the process is reversed, i.e. if heat is removed then the curve will be called cooling curve, and the process would be T→S→R→Q→P→O. In this case which process will QP represent?

4- Which point represents liquid state of the substance during change in temperature?

4.4. Refer the heating curve given in case-based questions 4.3 and answer the following questions:

1- What is the boiling point of the substance in Kelvin?

2- What is the freezing point of the substance in Kelvin?

3- What is the physical state of the substance at point D?

4- Which point represents solid state of the substance while change in temperature?

ANSWER:

4.1. 1.(b) a) 3. (c) 4. (c)

4.2. 1.(d) b) 3. (c) 4. (b)

4.3. 1. Partly solid and partly liquid

2. Boiling 3. Solidification 4. Point 'C'

4.4. 1. Boiling point = 90 + 273 = 363 K

2. Boiling point = 10 + 273 = 383 K

3. Partly liquid, partly gas

4. Point 'a'

CASE-STUDY BASED QUESTIONS CHEMISTRY CH-1 MATTER

WRITTEN BY- SHEELU YADAV

TYPIST- ANSHUMAN

READ MORE