

O Level Combined Chemistry MCQs

Kinetic Particle Theory Test 1.0

Q1

Which changes occur when a liquid at 50 °C becomes a gas at 120 °C?

	Separation of particles	Energy of particles	Attractive force between particles
A	decreases	increases	decreases
B	decreases	decreases	increases
C	increases	increases	decreases
D	increases	decreases	increases

Q2

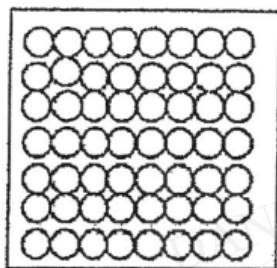
Which statement about the molecules in the gas carbon dioxide is correct?

- A The molecules are close together.
- B The molecules are diatomic.
- C The molecules move randomly.
- D The molecules all move with the same speed.

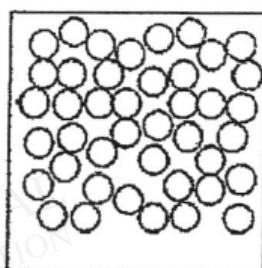
Q3

Substance Y melts at -120 °C and boils at -10 °C.

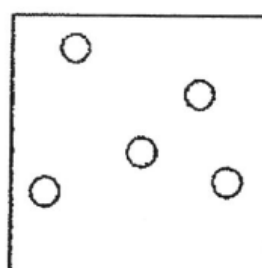
Which diagram represents the arrangement of the particles in substance Y at -30 °C?



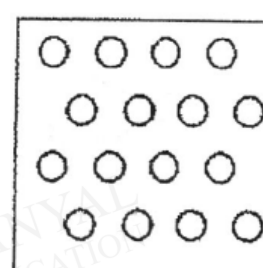
A



B



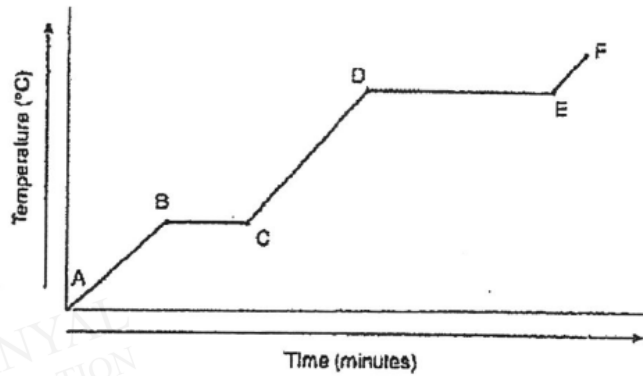
C



D

Q4

The following shows the change of temperature with time when ice was heated.



Which entry in the table shows the correct change taking place between the points?

	points	change
A	A to B	Some water molecules are no longer in fixed positions.
B	B to C	The average kinetic energy of the particles remains constant.
C	C to D	The volume of steam is increasing.
D	E to F	Water is boiling.

Q5

In which substance are the particles vibrating about fixed positions at room temperature?

	melting point/°C	boiling point/°C
A	-189	-155
B	-25	28
C	5	79
D	59	174

Q6

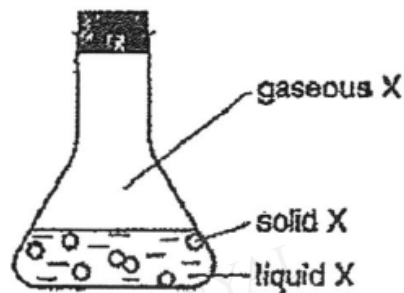
The melting and boiling points of four substances are given.

In which substance are the particles vibrating about their fixed positions at 10 °C?

	melting point / °C	boiling point / °C
A	-110	-50
B	-4	25
C	0	100
D	58	203

Q7

The conical flask contains compound X which is present in the solid, liquid and gaseous states.



Which statement about X is correct?

- A Particles of X become closer when it changes from a gas to a liquid.
- B In solid X, the particles are close together but not orderly arranged.
- C Particles of X lose energy when it changes from a liquid to a gas.
- D In liquid X, the particles move independently of each other.

Q8

The boiling points of some gases are given in the table.

gas	boiling point / °C
helium	-269
nitrogen	-196
ammonia	-35.5
carbon dioxide	-78.5

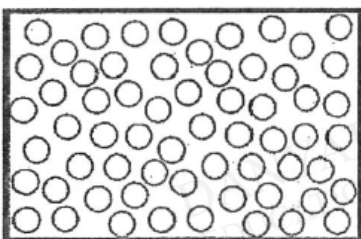
When the mixture is cooled to $-100\text{ }^{\circ}\text{C}$, some of these gases liquefy.

Which gases will liquefy?

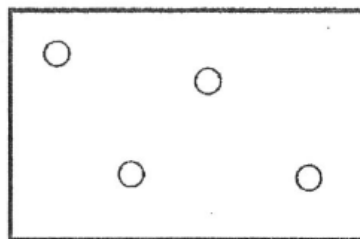
- A ammonia and carbon dioxide
- B ammonia and helium
- C carbon dioxide and nitrogen
- D helium and nitrogen

Q9

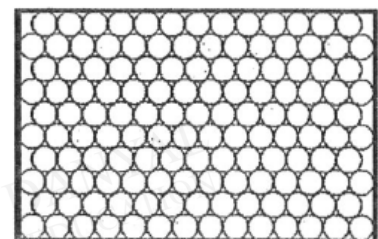
The diagrams show the arrangement of particles in three different physical states of substance X.



state 1



state 2



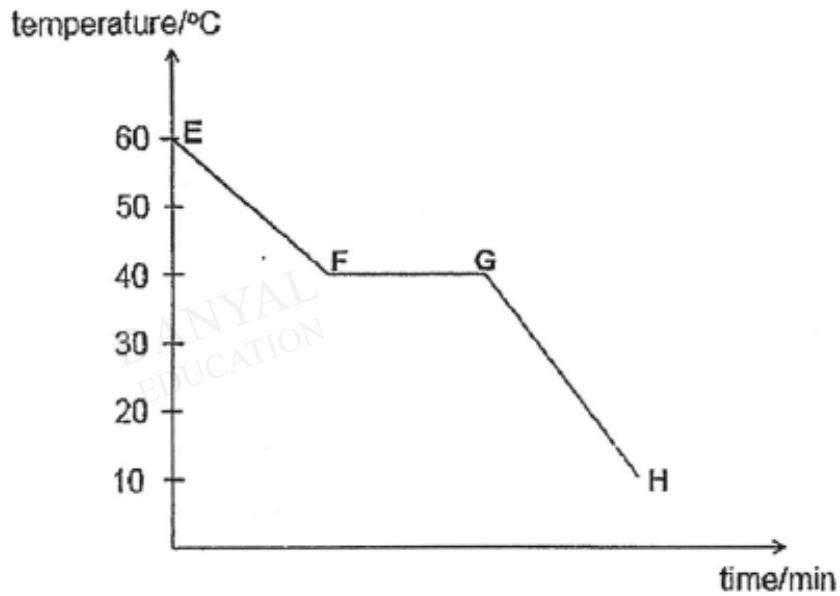
state 3

Which statement about the physical states of substance X is correct?

- A Particles in state 1 vibrate about fixed positions.
- B State 1 changes to state 2 by diffusion.
- C State 2 changes directly to state 3 by sublimation.
- D The substance in state 3 has a fixed volume.

Q10

The graph below shows how temperature changes over time when liquid S was cooled.



Which of the following statements is correct?

- A There is a mixture of liquid and solid particles at region FG.
- B The particles are moving randomly at high speeds at region EF.
- C The particles are arranged closely in a disorderly manner at region GH.
- D Heat energy is absorbed at region FG to strengthen the forces of attraction between particles.

Answers

Kinetic Particle Theory Test 1.0

Q1 C

Q2 C

Q3 B

Q4 B

Q5 D

Q6 D

Q7 A

Q8 A

Q9 D

Q10 A

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