

**O Level Combined Physics MCQs**

**Thermal Properties of Matter Test 1.0**

Q1

Which statement about evaporation is **not** true?

- A Evaporation causes the temperature of a liquid to be lower.
- B Evaporation occurs only at the surface of a liquid.
- C Evaporation takes place only when a liquid has reached certain temperature.
- D Evaporation takes place by absorbing energy from the surroundings.

Q2

Bubbles are seen forming rapidly in water and the temperature of the water remains constant. Which statements best describes what is happening?

- (A) The particles of the water are moving faster.
- (B) The particles of the water are moving further apart.
- (C) The particles of the water are moving faster and further apart.
- (D) The particles of the water are moving slower and closer together.

Q3

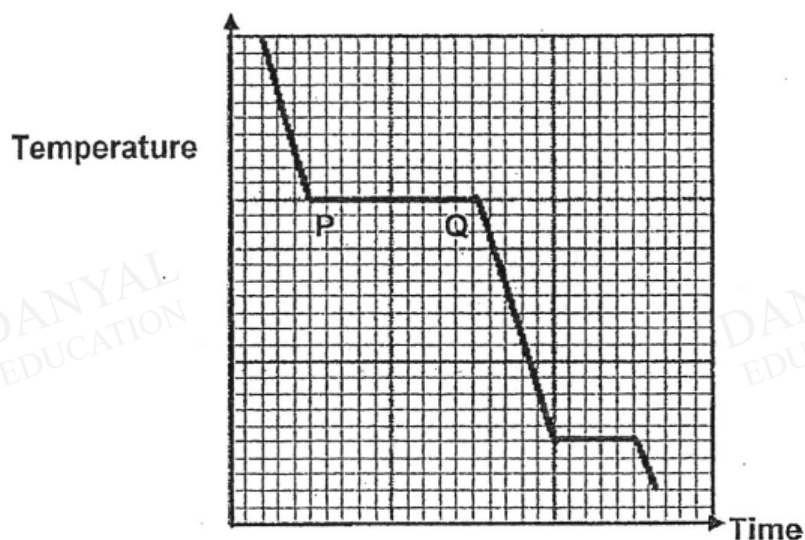
When a metal is heated, which of the following will occur?

- 1 The atoms can move freely.
- 2 The atoms have a larger amplitude of vibration.
- 3 The average kinetic energy of the atoms is increased.

- A 1 and 2 only      B 2 and 3 only      C 1 and 3 only      D 1, 2 and 3

Q4

A substance is heated in an enclosed space until it becomes a gas. After the heater is removed, the temperature is recorded at regular intervals. The graph shows temperature plotted against time.



Which process occurs during the time interval PQ?

- A boiling                      B Melting                      C solidification                      D condensation

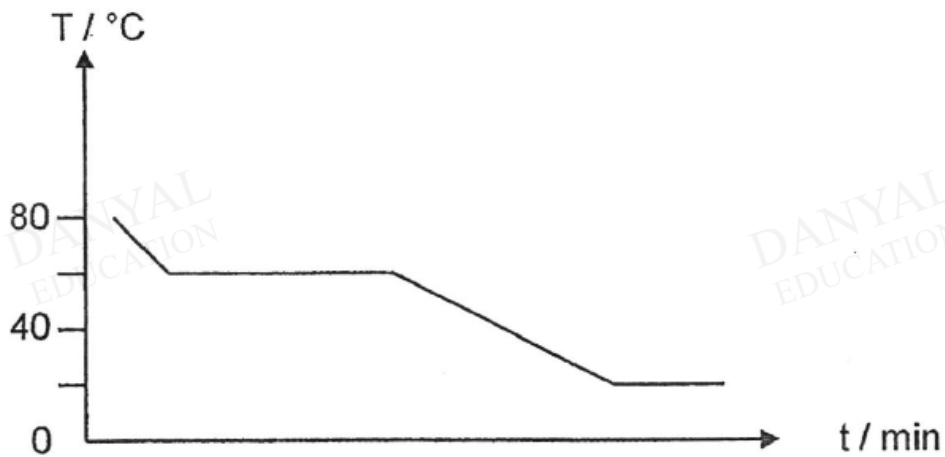
Q5

Which of the following is true during freezing?

- A The intermolecular force weakens and the molecules move slower.  
B The intermolecular force weakens and the speed of molecules remains constant.  
C The intermolecular force becomes stronger and the molecules move faster.  
D The intermolecular force becomes stronger and the speed of molecules remains constant.

Q6

The temperature of molten wax,  $T$ , is recorded at regular intervals in a laboratory of room temperature  $20^{\circ}\text{C}$ . A graph of temperature against time is made. According to the graph, what is the melting point of wax?



- A  $20^{\circ}\text{C}$                       B  $60^{\circ}\text{C}$                       C  $40^{\circ}\text{C}$                       D  $80^{\circ}\text{C}$

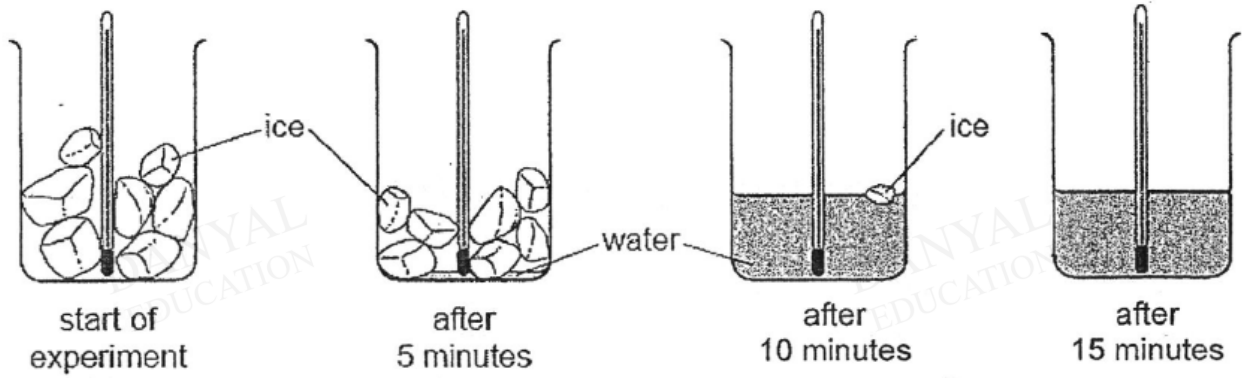
Q7

Which of the following correctly shows the differences between boiling and evaporation?

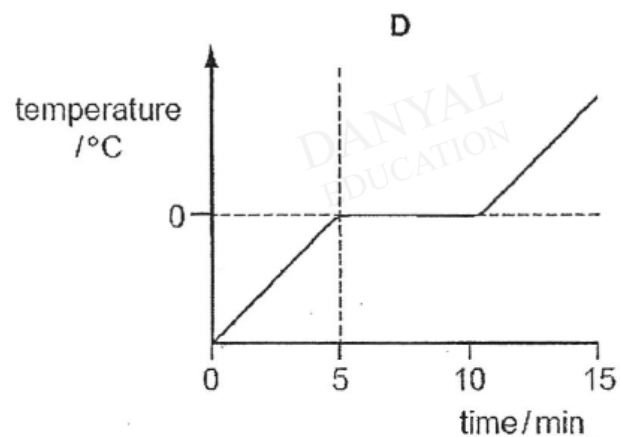
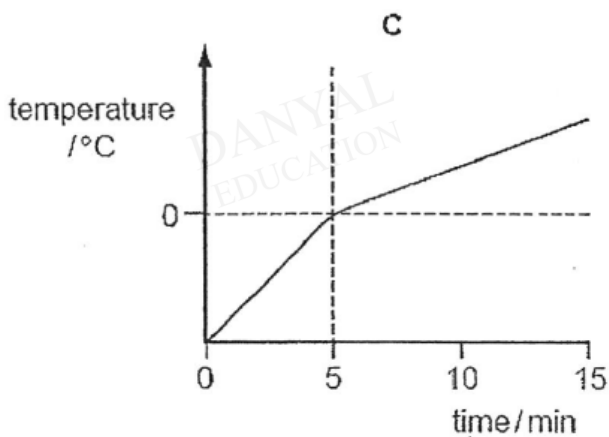
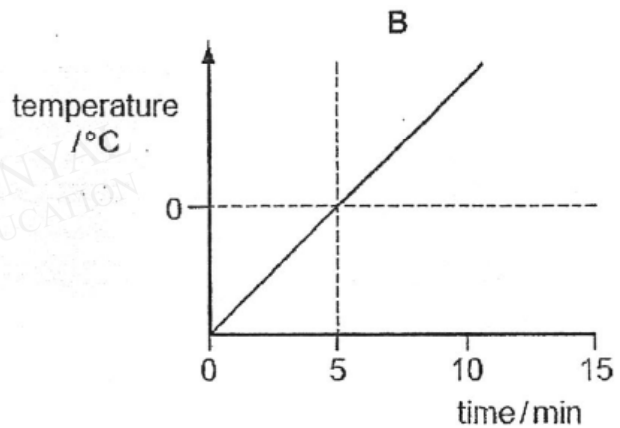
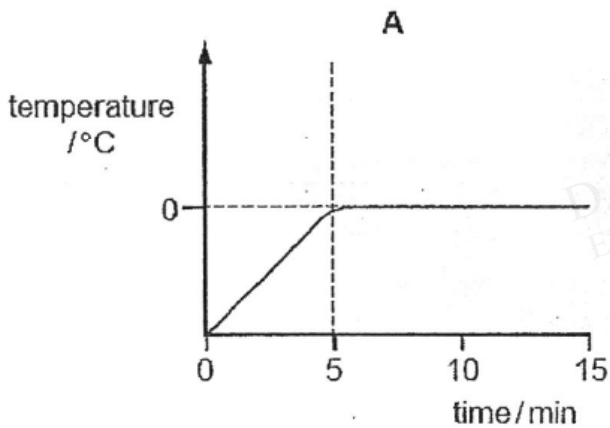
- |          | <b>Boiling</b>              | <b>Evaporation</b>           |
|----------|-----------------------------|------------------------------|
| <b>A</b> | Occurs at any temperature   | Occurs at fixed temperature  |
| <b>B</b> | Bubbles are seen            | No bubbles seen              |
| <b>C</b> | A slow process              | A quick process              |
| <b>D</b> | Occurs at surface of liquid | Occurs throughout the liquid |

Q8

- 10 A beaker containing ice and a thermometer is left in a warm room for 15 minutes. No water is visible in the beaker until 5 minutes has passed. After 10 minutes the last piece of ice just disappeared.



Which graph shows how the thermometer reading changes?



Q9

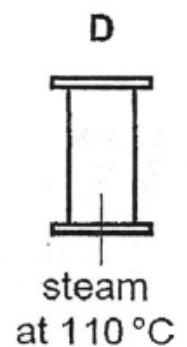
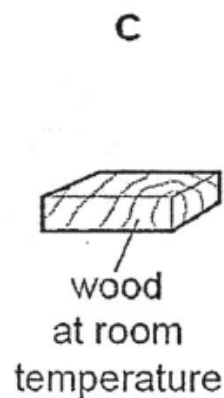
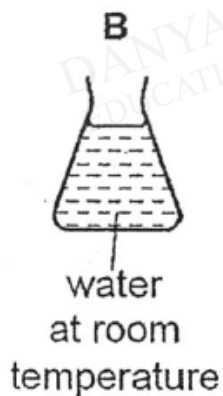
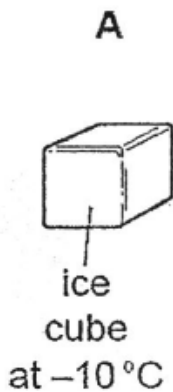
When a liquid evaporates, some of its molecules escape from the surface and the temperature of the liquid changes.

Which of the following describes the escaping molecules and change in temperature of the liquid?

	escaping molecules	temperature of liquid
A	high energy	decreases
B	high energy	increases
C	low energy	decreases
D	low energy	increases

Q10

Which of the following contains molecules with the **least** internal kinetic energy?



**Answers**

**Thermal Properties of Matter Test 1.0**

Q1 C

Q2 B

Q3 B

Q4 D

Q5 D

Q6 B

Q7 B

Q8 D

Q9 A

Q10 A

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