ALEXANDER ROAD HIGH SCHOOL

FEBRUARY 2018 | 45 MIN

PHYSICAL SCIENCE CONTROL TEST

CO, MH | TOTAL = 40

GRADE 10

Instructions

- The question paper consists of 3 questions.
- Answer all the questions.
- Answer section A on the answer sheet provided AND section B on folio sheets.
- A non-programmable calculator may be used.
- Number the answers correctly according to the numbering system.
- Round off to two (2) decimal places where necessary.

SECTION A

- Answer on the answer sheet -

QUESTION 1: Multiple choice

Four possible options are provided as answers to the following questions. Each question has only 1 correct answer. Choose the correct answer and write the letter (A – D) next to the relevant question number (1.1 – 1.10) on the answer sheet.

1.1 Any substance that has a constant composition and cannot be separated into simpler components by physical methods.

A Pure mixture
B Element
C Compound
D Mixture

1.2 A combination of two or more pure substances that are not bonded together.

A Compound
B Mixture
C Elements
D Molecule

1.3 A mixture that is not uniform throughout.

A Compound in reaction

B bonded elements

C heterogeneous mixture

D homogeneous mixture

1.4 During an experiment, a group of learners observe ice melting in a beaker.

Which ONE of the following best explains the learners' observation?

A The ice is releasing heat energy.

B The ice is undergoing a physical change.

C The ice is undergoing a chemical change.

D The ice is decomposing into the elements hydrogen and oxygen.

1.5 Which ONE of the following is a mixture?

A Air

B A diamond

C Distilled water

D Sodium chloride

1.6 According to the kinetic molecular theory the particles of a solid …

A vibrate in their fixed positions and have a fixed shape.

B are free to move and are compressible.

C are free to move and have a fixed shape.

D vibrate in their fixed positions and are compressible.

1.7 Which ONE of the following substances undergoes the process of sublimation?

A Water

B Wood

C Solid carbon dioxide

D Sodium chloride

1.8 Which one of the following terms is used to describe "the spontaneous movement of particles from an area of higher concentration to an area of lower concentration"?

A Diffusion

B Brownian motion

C Kinetic theory

D Temperature

1.9 Which one of the following terms is used to describe “a measure of the average kinetic energy of the particles in matter”?

A Diffusion

B Brownian motion

C Kinetic theory

D Temperature

1.10 Identify the following processes:

(i) the process during which a solid changes to a liquid by the application of heat

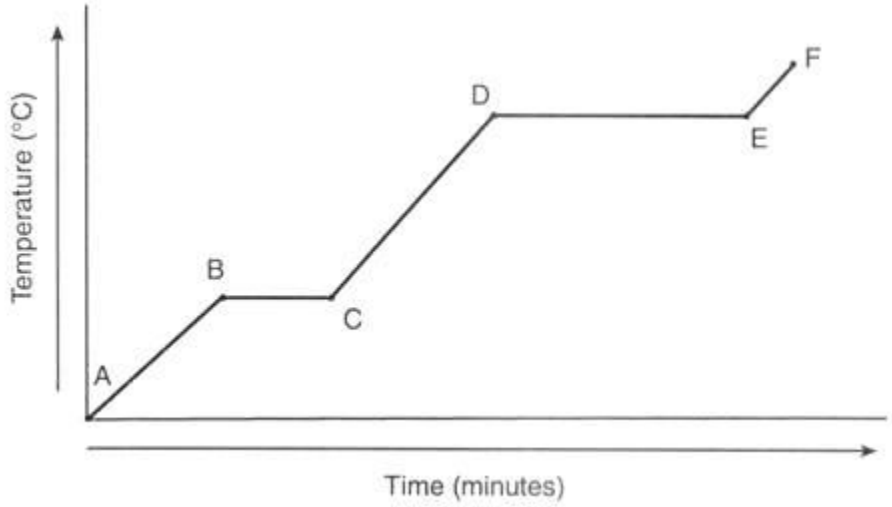
(ii) the process during which a gas (or vapour) changes to a liquid

(iii) the process during which a liquid changes to a gas (or vapour) at any temperature below the boiling point

A	(i)	condensation	(ii)	melting	(iii)	evaporation
B	(i)	melting	(ii)	condensation	(iii)	evaporation
C	(i)	melting	(ii)	evaporation	(iii)	condensation
D	(i)	melting	(ii)	condensation	(iii)	sublimation

Question 2: (Section B: answer on folio paper)

The graph below represents the heating curve of an unknown substance.



2.1 Give the phase of the substance between A and B. (1)

2.2 Name the process taking place from:

2.2.1 B to C

2.2.2 D to E (2)

2.3.1 Did the substance sublimate? Give a reason for you answer by referring to the graph. (2)

2.3.2 Define sublimation. (2)

2.4.1 Define the term BOILING POINT. (2)

2.4.2 If the graph represents the heating curve of water at 1 atm, what is the temperature between D and E? (1)

2.4.3 Explain why water boils at a lower temperature at the summit of a mountain, than at its foot. (3)

2.4.4 What is the 'lost heat' between D and E called? (1)

Question 3

3.1 Give three (3) differences between boiling and evaporation. (3)

3.2 Explain, in terms of the kinetic molecular theory, why evaporation causes cooling. (3)

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