**ALEXANDER ROAD HIGH SCHOOL**

FEBRUARY 2019 45 MIN

**PHYSICAL SCIENCE CONTROL TEST**

MH TOTAL = 40

**GRADE 10**

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Instructions

- The question paper consists of 4 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.

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## 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 Which ONE of the following substances is NOT a PURE substance?

A Iron

B Sugar

C Steel

D Graphite

1.2 Which ONE of the following sets of materials is magnetic?

A Cu, Ni, Fe

B Steel, Ni, Co

C Au, Fe, Ni

D All metals

1.3 An example of a homogenous mixture is

A blood

B copper

C brass

D mud

1.4 The metalloids are good conductors of electricity

A at any temperature.

B at high temperatures.

C at low temperatures.

D Metalloids do not conduct electricity.

1.5 The process in which a solid becomes a gas without passing through the intermediate liquid phase is

A sublimation

B deposition

C evaporation

D vapourisation

1.6 A substance which can be bent and pressed into shape is

A malleable.

B ductile.

C brittle.

D conductive.

1.7 Which ONE of the following statements is CORRECT with regards to the Kinetic Molecular Theory?

A The particles of liquids vibrate about fixed positions whilst gas particles of a gas move about freely.

B Particles in a solid adopt the shape of the container they are in whilst gas particles occupy the volume available to them.

C Particles in a liquid are quite close together whilst gas particles are far apart.

D There are relatively strong forces of attraction between liquid particles and even stronger forces of attraction between gas particles.

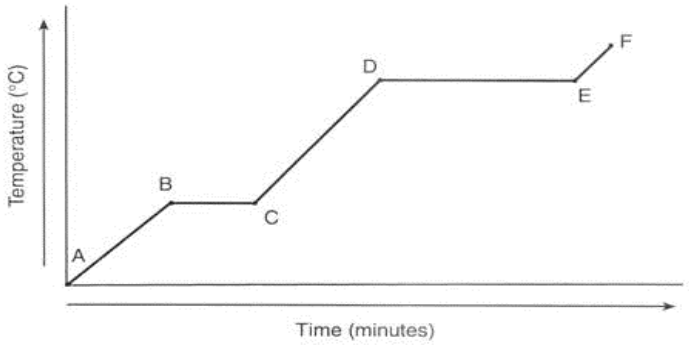
1.8 The graph is the heating curve of an unknown substance. In which part(s) of the graph does the substance gain kinetic energy?

A EF and DE

B BC and DE

C AB, CD and EF

D A to F




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 I have a black marker and would like to know if it contains black ink or whether it is made up by adding different coloured inks until a black colour is obtained. The method I would use to see the different coloured inks are:

A filtration

B distillation

C fractional distillation

D chromatography

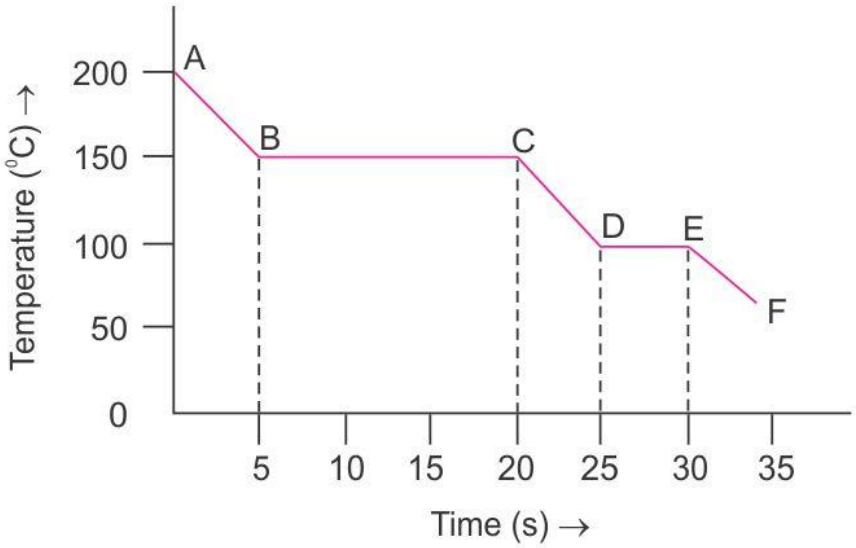
**SECTION B**

-Answer on folio paper-

**QUESTION 2:**

The graph given in the figure represents the cooling curve for a substance being cooled from a higher temperature to a lower temperature.

The gas was collected in a container and cooled over time. Temperature readings were taken throughout the process.




2.1.1 Identify the DEPENDENT variable for the experiment. (1)

2.1.2 Identify the INDEPENDENT variable for the experiment. (1)

2.2.1 Give the phase of the substance between C and D. (1)

2.3 Name the process taking place from:

2.3.1 B to C

2.3.2 D to E (2)

2.4.1 Using the graph, how do we know the substance did not undergo deposition? (2)

2.4.2 Draw a rough cooling curve indicating what the cooling curve would look like if the substance did undergo deposition. Label the axes, but no plotting required. (2)

**[9]**

**QUESTION 3:**

3.1 Give TWO (2) differences between boiling and evaporation. (2)

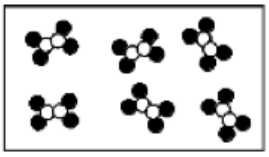
3.2.1 Define BOILING POINT. (2)

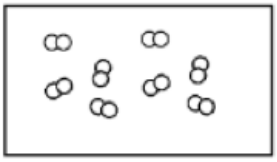
3.2.2 Use the definition in 3.2.1 to explain why the water boils at a lower temperature in Port Elizabeth than in Johannesburg. (3)

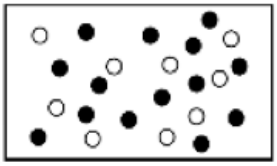
**[7]**

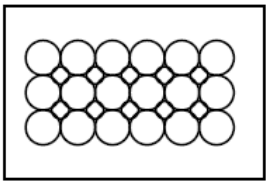
**QUESTION 4:**

Identify each of the following substance(s) in the boxes below as an ELEMENT, COMPOUND or MIXTURE.

4.1 

4.2 

4.3 

4.4 

(4x1)

**[4]**

**TOTAL [40]**