

EKHURULENI NORTH DISTRICT COMMON TEST

JUNE 2023

GRADE 8

NATURAL SCIENCES

NAME OF LEARNER: _____

CLASS: _____ DATE: _____

EDUCATOR: _____

MARKS: 60 TIME: 1 hour 8 pages

OUESTION	Section A		Section B					ΤΟΤΑΙ		
QUESTION	1	2	3	4	5	6	7	8	9	TOTAL
LEARNER'S MARK										
MODERATED MARK										
ALLOCATED MARK	5	5	5	5	9	3	8	7	13	60

EDUCATOR'S SIGNATURE:

MODERATOR'S SIGNATURE:

INSTRUCTIONS AND INFORMATION

- Write your name, surname, class, and Educator's name 1.
- Answer ALL the QUESTIONS in the spaces provided on the QUESTION PAPER. 2.
- The QUESTION PAPER consists of Sections A and B based on the prescribed content framework 3. in the CAPS document
- Allocation of marks: 4.
 - SECTION A [15] SECTION B [45]
- The QUESTION PAPER consists of 10 questions and 10 pages. 5. 6. Present your answers according to the instructions of each question.
- You may use a non-programmable calculator, where necessary. 7.
- You may use appropriate mathematical drawing instruments. 8.
- 9. All diagrams must be in pencil with labels in ink.
- 10. Write neatly and legibly.
- Do not use correction fluid. 11.
- Use the Periodic Table on page 10 to help you. 12.

SECTION A: SHORT QUESTIONS QUESTION 1: MULTIPLE CHOICE

Various possible answers are provided for each of the following questions. Each question has only ONE correct answer. Write only the correct LETTER (A to D) next to the corresponding number (1.1 - 1.5) in the space provided at the bottom of the page, for example, 1.6 D.

- 1.1 What are the horizontal rows on the Periodic Table called?
 - A. Groups
 - B. Columns
 - C. Families
 - D. Periods (1)
- 1.2 If a neutral atom has 12 protons in the nucleus, it must have ...
 - A. 12 neutrons in the nucleus.
 - B. 12 neutrons around the nucleus.
 - C. 12 electrons in the nucleus.
 - D 12 electrons around the nucleus. (1)
- 1.3 Which ONE of the following is a property of a solid?
 - A. It has a defined shape.
 - B. Its particles slide past each other.
 - C. It has large spaces.
 - D. It flows. (1)
- 1.4 Melting is the change of state from a ...
 - A. liquid to a solid.
 - B. liquid to a gas.
 - C. solid to a liquid.
 - D. solid to a gas. (1)

1.5 Which ONE of the following is NOT an assumption of the Particle Model of Matter?

A. Particles attract each other.

B. Particles at higher temperatures move slower than particles at lower temperatures.

- C. Matter is made up of small particles.
- D. Particles are in constant motion. (1)

Answers:

1.1		1.2		1.3		1.4		1.5	
									[5]

(1)

QUESTION 2: TERMINOLOGY

Give the correct term for each of the following descriptions. Write only the answer on the line below the question (2.1 to 2.5), for example, 2.6 atom.

- 2.1 Movement of particles from an area of high concentration to an area of low concentration.
- 2.2 The name given to the region where protons and neutrons are found in an (1) atom.
- 2.3 The negatively charged sub-atomic particle.
 (1)

 2.4 The amount of mass per unit volume
 (1)

 2.5 Elements found on the left-hand side of the Periodic Table.
 (1)

 [5]
 [5]

QUESTION 3: MATCH THE COLUMNS

Pair the description in Column A with the correct term in Column B. Write the correct LETTER in Column C, for example, 3.6 G

COLUMN A	COLUMN B	COLUMN C]
3.1 Element with the atomic number 10.	A. gas	3.1	(1)
3.2 Two or more different elements combined together chemically.	B. compound	3.2	(1)
3.3 Helium in a balloon is an example of	C. fluorine	3.3	(1)
3.4 ONE of the noble gases	D. neon	3.4	(1)
3.5 The size of the spaces between particles gets smaller with cooling.	E. argon	3.5	(1)
	F. contraction		

TOTAL FOR SECTION A: 15

SECTION B: LONG QUESTIONS QUESTION 4

Different substances are shown in the diagrams below, labelled **A** to **E**. Study the diagrams and answer the following questions.

	A ⊖ ∂ ∂	B°°°°° °C°°°	С °°°° °°°		E. ୦° ଚିଁ୦ି
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Give the letter(s) that best describe(s) ...

4.1	an element that consists of single atoms.	(1)
4.2	an element made up of diatomic molecules.	(1)
4.3	a compound.	(1)
4.4	a mixture of elements.	(1)
4.5	a mixture of elements and compounds.	(1)
		[5]

QUESTION 5

5.1 In a paragraph, use your knowledge of the Particle Model of Matter to explain the arrangement and interaction of gas particles. (3)

- 5.2 When you get near to a bakery, you are sometimes able to smell the freshly baked bread. This is possible because of the diffusion of gases.
 - 5.2.1
 Define the process of diffusion.
 (2)

 5.2.2
 How does diffusion in liquids compare with the diffusion of gases?
 (2)

 5.2.3
 Why is it not possible for diffusion to take place in solids?
 (2)

 5.2.3
 [9]

QUESTION 6

A chemical reaction is represented by the diagram below:



[3]

QUESTION 7: CASE STUDY

Four new elements to be added to the periodic table By Lin Taylor, for CNN.

Chemistry textbooks as we know them are officially out of date, as four new elements will soon be added to the periodic table. Elements 113 (nihonium), 115 (moscovium), 117 (tennessine) and 118 (oganesson) have formally been recognized by the International Union of Pure and Applied Chemistry (IUPAC), the U.S.-based world authority on chemistry.

The organisation's announcement on December 30 means the seventh row of the periodic table is finally complete. It's the first time the table has been updated since 2011, when elements 114 (flerovium) and 116 (livermorium) were added. Devised by Russian chemist Dmitri Mendeleev in 1869, the table categorises chemical elements according to their atomic number. "The chemistry community is eager to see its most cherished table finally being completed down to the seventh row," said Jan Reedijk, president of the Inorganic Chemistry Division of IUPAC, in a statement.

A Russian-American team at the Joint Institute for Nuclear Research in Dubna, Oak Ridge National Laboratory in Tennessee and Lawrence Livermore National Laboratory in California discovered elements 115, 117 and 118, while Japanese researchers were credited for discovering element 113. All four elements are not found in nature and were artificially created in laboratories.

2013: Researchers confirm creation of element 01:16

- 7.1 Give the NAMES of the four new elements that have been added to the periodic table.
- 7.2 Give the NUMBER of the row of the Periodic Table to which the new elements have been added.
- 7.3 Who was the Russian Scientist that devised the Periodic Table?
- 7.4 Give the SYMBOL of TWO other elements found in the same group as element 113.

(2)

[8]

(4)

(1)

(1)

QUESTION 8: Density, Mass and Volume

8.1 Look at the diagram below. All spheres have the same volume.



8.1.1	Arrange the spheres in order of increasing density.	(3)
8.1.2	Explain why the metal sphere drops to the bottom.	(1)
8.1.3	A metal sphere has a mass of 10,5g and is placed in a beaker having a volume of 4,2cm ³ . Calculate the density of the metal sphere.	(3)
		[7]

QUESTION 9: SKILLS

Joseph did a Science Fair project comparing the rate of growth of cheese mould on processed Gouda cheese and unprocessed Gouda cheese. He used a grid to measure the areas covered by the mould in cm². This was done at 5 pm every Monday for 6 weeks. Below is a table of his results.

Time (week)	Mould growth (cm ²)				
Time (week)	Processed Gouda	Unprocessed Gouda			
1	0	0			
2	0	0			
3	0	1			
4	0	2,5			
5	0,5	3,2			
6	0,5	4,5			

9.1 Provide an aim for this investigation.

9.2 Name the dependent variable.

- 9.3 Provide a conclusion for this experiment.
- 9.4 Use the data in the table to draw a comparative line graph in the space provided. (9)

[13]

(2)

(1)

(1)

TOTAL FOR SECTION B: 45

GRAND TOTAL: 60



103 Е 174.97 5 [262] ٩ 259.10 173.06 Å Ρ Ц 168.93 5 258.1 8 Ea 257.10 167.26 Ъ 67 £ **ES**^[254] 164.93 99 2 162.50 251.08 Շ 5 Ч Ч 158.93 247.07 Ŗ S PB 157.25 247.07 ß Am 243.06 151.96 Ξ 2 Sm Pu 150.36 244.06 Pa dN 237.05 144.91 238.03 PZ 144.24 D 65 5 231.04 140.91 Pa ዋ 28 6 e U 140.12 Ч 232.04 Ac 5 227.03 Р 138.91