



GAUTENG PROVINCE

EDUCATION
REPUBLIC OF SOUTH AFRICA

Ekurhuleni North

NATURAL SCIENCES

GRADE 9

CONTROLLED TEST

TERM 2

Sur Surname _____ Name: _____

Educator: _____

Grade: 9

Date: 05 June 2025

Duration: 1,5 Hours

Marks: 80

Instructions

1. Answer all the questions.
2. This paper consists of 8 questions and 11 pages with the periodic table
3. Write neatly and legibly.

Section	A			B					
Question	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	TOTAL
Allocated marks	6	5	5	12	15	10	13	14	80
Obtained marks									
Moderated marks									

SECTION A:**QUESTION 1 (6 marks)****MULTIPLE CHOICE**

Choose the correct answer and write only the letter (A–D) in the appropriate space of the **TABLE BELOW FOR QUESTION 1.1-1.6**.

ANSWERS:

1.1	1.2	1.3	1.4	1.5	1.6

1.1 Which of the following is a compound?

- A. Oxygen
- B. Carbon
- C. Water
- D. Hydrogen

(1)

1.2 Which subatomic particle has a negative charge?

- A. Proton
- B. Electron
- C. Neutron
- D. Atom

(1)

1.3 What is the atomic number of Oxygen?

- A. 6
- B. 8
- C. 10
- D. 12

(1)

1.4 What do elements in the same group of the Periodic Table have in common?

- A. Same atomic number
- B. Same number of protons
- C. Same chemical properties
- D. Same mass number

(1)

1.5 What is formed when a metal reacts with oxygen?

- A. Salt
- B. Metal hydroxide
- C. Metal oxide
- D. Carbon dioxide

(1)

1.6 Which of the following is a physical change?

- A. Burning of wood
- B. Rusting of iron
- C. Melting of ice
- D. Explosion of hydrogen

(1)

QUESTION 2 (5 marks)

MATCHING ITEMS

Match Column A with Column B. Write only the correct letter next to the number.

COLUMN A	COLUMN B	ANSWERS
2.1 Element with atomic number 1	A. Compound	2.1 _____
2.2 A substance made of two elements	B. Hydrogen	2.2 _____
2.3 Smallest particle of an element	C. Neutron	2.3 _____
2.4 Electrically neutral subatomic particle	D. Mixture	2.4 _____
2.5 Substance physically combined	E. Atom	2.5 _____

Question 3 (5 marks)

Give the correct scientific term for each of the following definitions:

3.1 A chart that organizes elements based on atomic number.	(1)
3.2 Particles that make up atoms.	(1)
3.3 The smallest unit of a compound.	(1)
3.4 A reaction in which a new substance is formed.	(1)
3.5 The number of protons in an atom.	(1)

SECTION: B

QUESTION 4 (12 marks)

Use the Periodic Table provided to answer the following questions:

4.1.1 Write down the symbols for the following elements:

a. Sodium

_____ (1)

b. Aluminium

_____ (1)

c. Potassium

_____ (1)

4.1.2 Write down the name of the following compounds

a) ZnO

_____ (1)

b) MgCl_2

_____ (1)

c) CO_3

_____ (1)

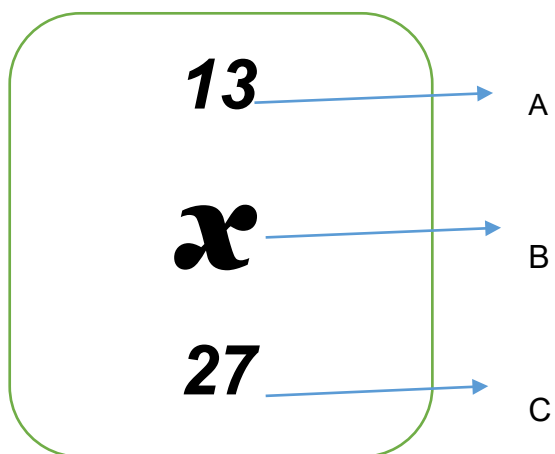
4.1.3 Indicate with a cross(x) whether the following elements are metals, semi-metals, or non-metals.

Element	Metal	Semi-metal	Non-metal
Oxygen			
Copper			
Silicon			
Phosphorous			
Calcium			
Helium			

(6)

QUESTION 5 (15 marks)

Study the symbol and use the periodic table provided to answer the questions below.



5.1.1 Name the element that this symbol represents

_____ (1)

5.1.2 Give the elements mass number

_____ (1)

5.1.3 How many protons does this element have in its nucleus

_____ (1)

5.1.4 is the element a metal or a semi metal

_____ (1)

5.1.5 The element forms an oxide when it reacts with oxygen. What is the name of the oxide that formed?

_____ (1)

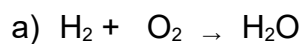
5.1.6 For what is this substance commonly used for

_____ (3)

5.1.7 Give the period number where this element is found

_____ (1)

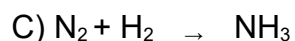
5.2 Balance the following chemical equations.



_____ (2)



_____ (2)



_____ (2)

QUESTION 6 (10 marks)

Read the passage below and answer the questions follows.

EN- GRADE 9 NATURAL SCIENCES JUNE CONTROLLED TEST

Rusting: Understanding the Process and Prevention

Rusting is a common chemical process that affects metals, especially iron and steel.

When iron reacts with oxygen and water from the environment, it forms a reddish-brown substance called rust. This process is a type of corrosion and can weaken structures like bridges, cars, and tools.

Rusting is not only a scientific issue but also

6.1 Define the term rusting

_____ (2)

6.2 Write down the chemical formular (in words) for the process of rusting

_____ (2)

6.3 Explain why rusting is considered a chemical change.

_____ (2)

6.4 Describe two ways you can prevent rust from forming on a bicycle left outside.

_____ (2)

6.5 Why is rusting a problem for cars and bridges?

(2)

Question 7 (13 marks)

Farmers need to know the pH of the soil to determine what crops they should grow. Look at the table showing different pH values at which crop plants will grow.

Ph scale	Crops
8	Beetroot
7.5	Mint
7	Carrot
6.5	Cauliflower
5.5	Potatoes
5	Lettuce
5.5	Sweet potato

7.1 What is the aim of the above investigation.

(2)

7.2 From the table above identify

(2)

Independent variables

Dependent variables

7.3 Use the above table to draw a **BAR GRAPH**

(6)

7.4 In what pH range will potatoes grow well?

_____ (1)

7.5 If a soil had pH range of 7.6 which crop could be grown?

_____ (1)

7.6 What can a farmer do if his soil has Ph of 4?

_____ (1)

Question 8 (14 marks)

Study the following table which shows the pH of three household substances after universal indicator was added:

Substance	Colour Shown	pH Value
Lemon Juice	Red	2
Tap Water	Green	7
Bleach	Purple	13

8.1 Define an acid and a base.	(2)
8.2 What is the pH scale? What does a pH of 7 indicate?	(2)
8.3 Suggest a safety precaution when handling bleach.	(1)
8.4 Complete the general reaction: Acid + Base → _____ + _____	(2)
Acid + Base → _____ + _____	
8.5 What type of reaction occurs between an acid and a base?	(1)
8.6 Complete and balance the following neutralisation reaction:	(2)
HCl + NaOH → _____ + _____	
8.7 Write a word and balanced chemical equation for the reaction of Hydrochloric acid with Magnesium Oxide.	(4)

TOTAL: 80 MARKS

1 H 1.00794	2
3 Li 6.941	4 Be 9.012182
11 Na	12 Mg

Periodic Table

13 5 B 10.811	14 6 C 12.0107	15 7 N 14.00674	16 8 O 15.9994	17 9 F 18.9984032	18 2 He 4.002602
13 Al	14 Si	15 P	16 S	17 Cl	18 Ar

