

CCC HEEP WOH COLLEGE
2024 – 2025 COMMON TEST 2 (Re-test)
Form Three Chemistry
Chapter 3: The Periodic Table
Chapter 4: Compound and Mixture
Time Allowed: 15 minutes

Parent's Signature:	Mark:
	25

Name: _____ ()

Class: 3 _____

1. This paper must be answered in English.
2. Answer ALL the following questions in the spaces provided.

Section A: Multiple Choice - Mark you answer with a "✓" in the space provided:

(10 marks)

	1	2	3	4	5	6	7	8	9	10
A										
B										
C										
D										

1. To which group does the atom ${}_{15}^{31}\text{P}$ belong to?

A. Group V	B. Group VI
C. Group VII	D. Group VIII

2. Which of the following combinations is INCORRECT?

	<u>Element</u>	<u>Description</u>
A.	Beryllium	2 outermost shell electrons
B.	Oxygen	2 outermost shell electrons
C.	Beryllium	2 occupied electron shells
D.	Oxygen	2 occupied electron shells

3. Which of the following statements concerning elements of the same period is correct?
 - A. Their mass number increases across the period.
 - B. They have similar chemical properties.
 - C. They have the same number of outermost shell electrons.
 - D. They become less reactive across the period.

4. Which of the following pairs of atoms show similar chemical properties?

A. ${}_{8}^{16}\text{X}$ and ${}_{4}^{8}\text{Y}$	B. ${}_{10}^{20}\text{X}$ and ${}_{20}^{39}\text{Y}$
C. ${}_{7}^{14}\text{X}$ and ${}_{13}^{30}\text{Y}$	D. ${}_{1}^{2}\text{X}$ and ${}_{2}^{4}\text{Y}$

5. Non-metal elements X and Y are in the same group of the Periodic Table. Element X has a greater atomic number. Which of the following statements are correct?
- (1) Atomic size of X is smaller than that of Y.
 - (2) X is less reactive than Y.
 - (3) X and Y have different physical properties.
- A. (1) and (2) only B. (1) and (3) only
C. (2) and (3) only D. (1), (2) and (3)
6. Which of the following statements about iodine are correct?
- (1) It is a black solid at room conditions.
 - (2) It is denser than chlorine.
 - (3) It is less reactive than bromine.
- A. (1) and (2) only B. (1) and (3) only
C. (2) and (3) only D. (1), (2) and (3)
7. How many elements are there in the first period of the Periodic Table?
- A. 0 B. 2
C. 6 D. 8
8. Which of the following statements are INCORRECT?
- (1) If a metal has 2 outermost shell electrons, it is an alkali metal.
 - (2) All Group VII elements are gases at room temperature.
 - (3) If an element belongs to Group 0, it has 8 outermost shell electrons.
- A. (1) and (2) only B. (1) and (3) only
C. (2) and (3) only D. (1), (2) and (3)
9. Francium is a Group I element below potassium in the Periodic Table. Which of the following statements concerning francium and potassium are correct?
- (1) Francium has more occupied electron shells than potassium.
 - (2) Francium reacts more vigorously with water than potassium.
 - (3) Francium is a silvery metal when freshly cut.
- A. (1) and (2) only B. (1) and (3) only
C. (2) and (3) only D. (1), (2) and (3)
10. Which of the following descriptions about Group I elements is **incorrect**?
- A. All of them are metals.
B. They react with water to give off hydrogen.
C. They form ions by losing one electron.
D. Their reactivity decreases down the group.

Section B: Structural questions - Put the answers in the spaces provided. (15 marks)

1. The elements fluorine, chlorine, bromine and iodine all react with iron to give similar products, but they react at different rates:

Element	Reaction rate
fluorine	reacts instantly and very violently
chlorine	reacts quickly
bromine	reacts moderately
iodine	reacts slowly

- (a) Does the information above describe a physical property or a chemical property? [1]
- (b) (i) How are these elements similar in their positions in the Periodic Table? [1]
- (ii) Based on your answer in (i), describe the trend of reactivity of these elements in the Periodic Table. [1]

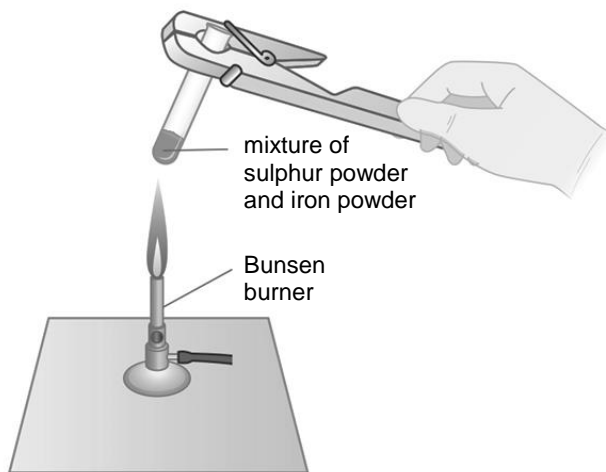
2. The elements in Group I are known as alkali metals.

Metal	Melting point
Li	181 °C
Na	98 °C
K	64 °C
Rb	39 °C
Cs	28 °C
Fr	27 °C

- (a) Alkali metals show similar physical properties. Based on the information above, briefly describe their following physical properties.
- (i) Melting point [1]
- (ii) Physical state at room conditions [1]
- (b) Consider lithium (Li), sodium (Na) and potassium (K).
- (i) Which of them reacts most vigorously with water? [1]

- (ii) Describe what happens when a piece of the metal in (i) is put into a basin of water. [2]

3. Terry heats some sulphur powder and iron powder together.



- (a) Describe the change in colour before and after heating. [2]

Before:

After:

- (b) (i) What new substance is formed? [1]

- (ii) Suggest a convenient test to show this substance is different from iron. [2]

- (c) Does this experiment involve a physical change or a chemical change? Explain your answer. [2]

End of Paper

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Marking Scheme

Section A: Multiple Choice - Mark your answer with a “✓” in the space provided:

(10 marks)

	1	2	3	4	5	6	7	8	9	10
A	✓		✓							
B		✓					✓			
C				✓	✓					
D						✓		✓	✓	✓

Section B: Structural questions - Put the answers in the spaces provided. (15 marks)

1. (a) **Chemical property** **1**
- (b) (i) **They all belong to the same group / Group VII.** **1**
(ii) **The reactivity of these elements decreases down the group.** **1**
2. (a) (i) **Low melting points** **1**
(ii) **Solids** **1**
- (b) (i) **Potassium** **1**
(ii) **The potassium piece moves quickly on the water surface. /
It burns with a flame / sparks. /
It produces a loud hissing sound.
(any TWO)** **1x2**
3. (a) **Before: Mixture of yellow powder and black powder** **1**
After: Some brown / black solids are formed. **1**
- (b) (i) **Iron sulphide** **1**
(ii) **Test it with a magnet.** **1**
Iron is attracted by a magnet, but iron sulphide is not. **1**
- (c) **Chemical change** **1**
A new substance is formed. / Iron sulphide is formed. **1**

End of Paper