



Name _____ Class _____ Roll no. _____ Date _____ Marks _____ / 32

1 Key words**[4]**

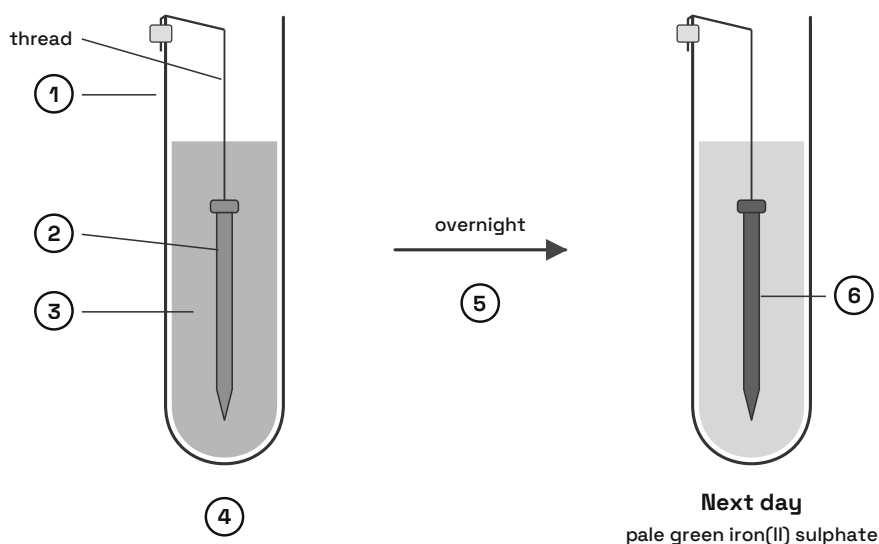
Fill in the blanks with words from the box. Two words in the box are not needed. Each blank carries 0.5 mark.

activation energy atoms catalyst coefficients conservation of mass inhibitor
precipitate products reactants subscripts

In a chemical reaction, the substances we start with are the _____, and the new substances formed are the _____. A balanced equation has the same number of _____ of each element on both sides, as the law of _____ requires. To balance an equation we change only the _____. When two compounds swap partners, an insoluble solid called a _____ often forms. A substance that changes the rate of a reaction without itself being changed is a _____. Particles react only if they collide with at least the _____.

2 Label the diagram**[3]**

An iron nail hangs by a thread in copper sulphate solution, at the start (left) and the next day (right). Write the name of each numbered part and, for the number under the arrow, the balanced equation of the reaction. Each carries 0.5 mark.



1. _____

2. _____

3. _____

4. _____

5. _____

6. _____



[5]

Choose the correct option for each of the following questions.

- i. What type of reaction is $4\text{Na} + \text{O}_2 \rightarrow 2\text{Na}_2\text{O}$? [1]
 - a. addition reaction
 - b. decomposition reaction
 - c. acid–base reaction
 - d. displacement reaction
- ii. What type of reaction is the heating of CaCO_3 ? [1]
 - a. combination reaction
 - b. single displacement reaction
 - c. decomposition reaction
 - d. double displacement reaction
- iii. What type of chemical reaction is the reaction between sodium chloride and silver nitrate? [1]
 - a. combination reaction
 - b. single displacement reaction
 - c. decomposition reaction
 - d. double displacement reaction
- iv. Which substance is X in $\text{HCl} + \text{X} \rightarrow \text{NaCl} + \text{H}_2\text{O}$? [1]
 - a. NaOH
 - b. Na
 - c. NaH
 - d. $\text{Na} + \text{H}_2\text{O}$
- v. A strip of copper is dipped into zinc sulphate solution. What happens? [1]
 - a. copper displaces zinc, and zinc metal appears
 - b. nothing: copper is less reactive than zinc
 - c. hydrogen gas bubbles off
 - d. the copper dissolves and the solution turns blue at once

[3]

Write very short answers to the following questions.

- a. Write the general form of a decomposition reaction. [1]
-
-
- b. Name the catalyst used to make oxygen from potassium chlorate in the laboratory. [1]
-
-
- c. Samir burns a magnesium ribbon, and a white ash forms. Write the balanced equation of the reaction. [1]

[6]

Write short answers to the following questions.

- a. Give a reason: hydrogen peroxide is not stored in a transparent bottle. [2]
-
-
-



b. Give a reason: an acid–base reaction is also called a neutralization reaction. [2]

c. Write any two differences between a single displacement and a double displacement reaction. [2]

6 Long answer [4]

Write a long answer to the following question.

Four students, A, B, C and D, were asked to carry out a decomposition reaction in the laboratory. A burnt magnesium ribbon; B put zinc into ferrous sulphate solution; C heated potassium chlorate (KClO_3) in a hard-glass test tube; D mixed zinc with hydrochloric acid. Which student followed the correct procedure? Write the balanced equation for that process.

7 Balancing equations [5]

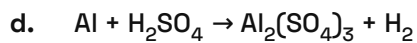
Balance these equations and name the type of each reaction. Show your working.

a. $\text{KClO}_3 \rightarrow \text{KCl} + \text{O}_2$ [1]

b. $\text{Fe} + \text{O}_2 \rightarrow \text{Fe}_2\text{O}_3$ [1]

c. $\text{Zn} + \text{H}_2\text{SO}_4 \rightarrow \text{ZnSO}_4 + \text{H}_2$ [1]





[2]

Count the atoms of each element on both sides in the table, then balance.

Element	Left side	Right side
Al		
H		
S		
O		

Answer: _____

8 Think

[2]

Think, then answer.

A lump of coal burns slowly in a stove, but coal dust in the air of a mine can explode. Why?

9 Activity: Slow the browning

(not marked)

Cut an apple into four slices. Leave one on a plate; squeeze lemon juice over another; put a third in the refrigerator; drop the fourth into a glass of water. Look at them after an hour.

Slice	Color after one hour	Faster or slower than the slice on the plate?	Why?
on a plate			
with lemon juice			
in the refrigerator			
under water			

