



Name _____ Class _____ Roll no. _____ Date _____ Marks _____ / 33

1 Key words**[4]**

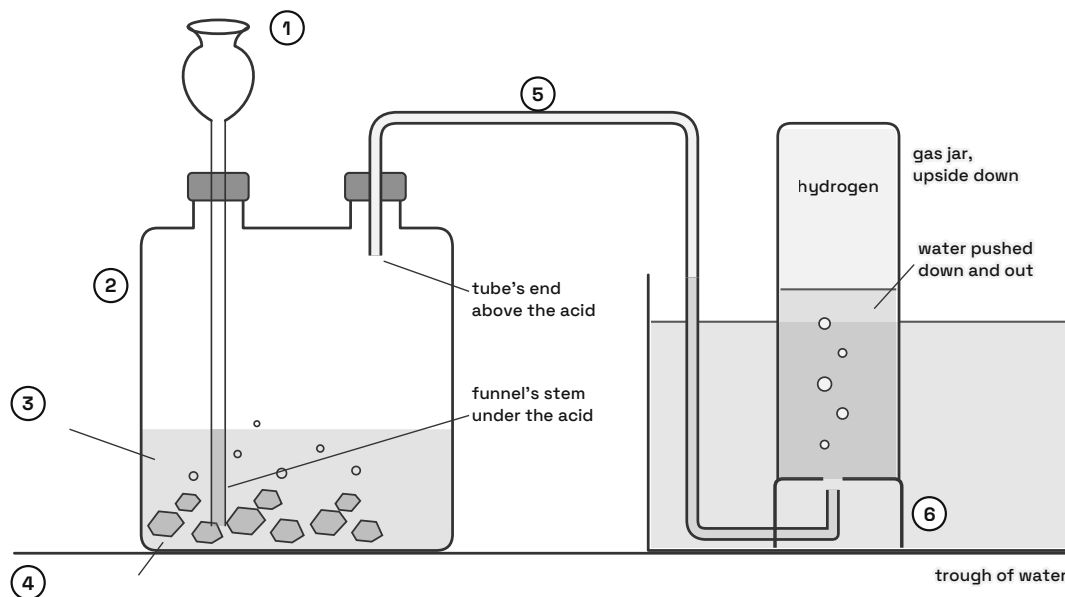
Fill in the blanks with words from the box. Two words in the box are not needed. Each blank carries 0.5 mark.

carbon dioxide downward displacement of water Haber manganese dioxide nitrogen
reduction stratosphere troposphere ultraviolet zinc

About 78% of the air is _____ and 21% is oxygen. Hydrogen is made in the laboratory from granulated _____ and dilute hydrochloric acid. Hydrogen and oxygen are collected by the _____, because they hardly dissolve in water. In the preparation of oxygen, _____ is used as a catalyst. Removing oxygen from a metal oxide is called _____. The ozone layer lies in the _____, and it absorbs the Sun's _____ rays. Ammonia is made from nitrogen and hydrogen by the _____ process.

2 Label the diagram**[3]**

The diagram shows the laboratory preparation of hydrogen. Write the name of the part or substance in place of 1 to 6. Each carries 0.5 mark.



1. _____

2. _____

3. _____

4. _____

5. _____

6. _____



3 Multiple choice

[5]

Choose the correct option for each of the following questions.

- i. Which compound is heated to prepare oxygen gas in the laboratory? [1]
a. CaCO_3 b. H_2O_2
c. Fe_2O_3 d. KClO_3
- ii. Which compound is formed when magnesium burns in oxygen? [1]
a. magnesium nitrate b. magnesium nitrite
c. magnesium oxide d. magnesium nitride
- iii. When dry hydrogen is passed over a hot metal oxide, the metal and water are formed. What is this process called? [1]
a. hydrogenation b. reduction
c. oxidation d. carbonation
- iv. Which is the main gas that depletes the ozone layer? [1]
a. chlorofluorocarbon b. methane
c. carbon dioxide d. sulphur dioxide
- v. Which compound fills the blank? $\text{C}_6\text{H}_{12}\text{O}_6 + 6\text{O}_2 \rightarrow 6 \dots\dots + 6\text{H}_2\text{O} + \text{energy}$ [1]
a. CO b. CO_2
c. CaO d. CaCO_3

4 Very short answers

[3]

Write very short answers to the following questions.

- a. Which scientist named hydrogen “water-former”? [1]

- b. How do you identify the oxygen gas in a gas jar? [1]

- c. Why are packets of crisps filled with nitrogen? [1]

5 Short answers

[8]

Write short answers to the following questions.

- a. How do you identify the hydrogen gas in a gas jar? [2]



b. Give a reason: the ozone layer is called the protective layer. [2]

c. Give a reason: hydrogen and oxygen gases are collected by the displacement of water. [2]

d. In the preparation of oxygen by heating, why is (a) the test tube clamped with its mouth slightly lower than its closed end, and (b) the delivery tube taken out of the water before the heating is stopped? [2]

6 Long answer [4]

Write a long answer to the following question.

What is the ozone layer? How is it formed, and how is it depleted? Write with equations.

7 Complete and balance [4]

Complete and balance these equations.

a. $\text{Na} + \text{H}_2 \rightarrow \dots$ [1]

b. $\dots \rightarrow \text{KCl} + \text{O}_2 \uparrow$ [1]



c. $\text{C}_6\text{H}_{12}\text{O}_6 + \text{O}_2 \rightarrow \dots + \dots + \text{energy}$ [1]

d. $4\text{P} + 5\text{O}_2 \rightarrow \dots$ [1]

8 Think [2]

Think, then answer.

A candle is lit in a jar turned upside down over water. When it goes out, the water has risen only a little way into the jar, and most of the air is still there. What does this tell you about the gas that is left?

9 Activity: Which gas is it? (not marked)

After your teacher shows the experiments for hydrogen, oxygen and nitrogen, fill in the table.

Gas	Made in the laboratory from	Test	What you see
hydrogen			
oxygen			
nitrogen			

