



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

1 Key words**[4]**

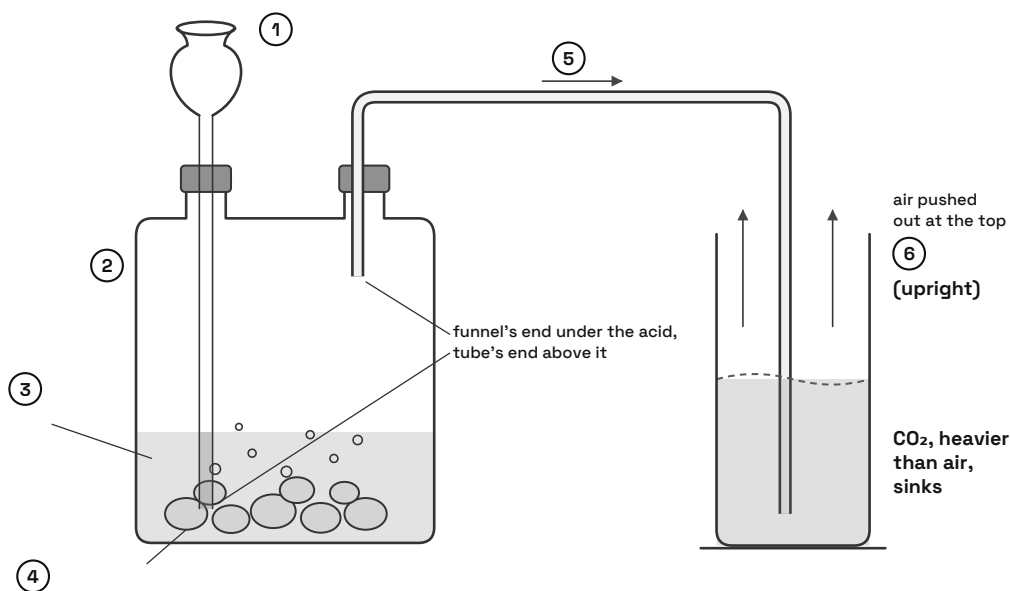
Fill in the blanks with words from the box. Two words in the box are not needed. Each blank carries 0.5 mark.

acid rain calcium hydroxide downward dry ice greenhouse gases hydrochloric
lime tower lime water sulphuric upward

In the laboratory, carbon dioxide is made by the reaction of marble with dilute _____ acid. It is heavier than air, so it is collected by the _____ displacement of air. It turns _____ milky. Solid carbon dioxide, which turns straight into gas without melting, is called _____. Ammonia is made by heating ammonium chloride with _____, and the gas is dried by passing it through a _____. Gases such as carbon dioxide and methane that absorb infrared rays are called _____. Rain with a pH below 5.6 is called _____.

2 Label the diagram**[3]**

The diagram shows the laboratory preparation of carbon dioxide. Name the parts and the substances numbered 1 to 6. Each carries 0.5 mark.



1. _____

2. _____

3. _____

4. _____

5. _____

6. _____



[5]

Choose the correct option for each of the following questions.

- i. In what ratio should ammonium chloride and calcium hydroxide be mixed for the laboratory preparation of ammonia gas? [1]
- a. 3 : 1
b. 2 : 3
c. 1 : 2
d. 2 : 1
- ii. Which compound is formed when carbon dioxide gas is passed through lime water for some time? [1]
- a. calcium bisulphate
b. calcium bicarbonate
c. calcium sulphate
d. calcium carbonate
- iii. What products are formed when limestone is heated to a high temperature using coal? [1]
- a. methane and lime
b. lime and carbon dioxide
c. acetylene and carbon dioxide
d. ammonia and lime
- iv. Why is ammonia collected in a gas jar held upside down? [1]
- a. because it is heavier than air
b. because it is lighter than air, so it rises into the jar and pushes the air down and out
c. so that the lime tower works
d. because it dissolves in water
- v. On a clear winter night in Kathmandu the ground gets much colder than on a cloudy night. Why? [1]
- a. the clouds give off their own heat
b. on a clear night, the infrared from the ground escapes to space; clouds would have absorbed it and sent part of it back down
c. clouds block the Moon's light, which is cold
d. there is more carbon dioxide on clear nights

[3]

Write very short answers to the following questions.

- a. Which is the only common gas that turns damp red litmus blue? [1]
-
-
- b. Write the balanced equation of the reaction of carbon dioxide with lime water. [1]
-
-
- c. Why does a bottle of soda water fizz when it is opened? [1]



5 Short answers

[8]

Write short answers to the following questions.

- a. Give a reason: carbon dioxide can be collected in an open gas jar.

[2]

- b. Give a reason: a bottle of liquor ammonia should be kept in cold water or ice for some time before its lid is opened.

[2]

- c. Give a reason: ammonia is dried with quicklime, not with concentrated sulphuric acid.

[2]

- d. Write any two effects of acid rain.

[2]

6 Long answer

[4]

Write a long answer to the following question.

A gas is prepared by heating a mixture of two solids in a hard-glass test tube that slopes slightly down towards its mouth. The gas passes through a tower of quicklime and is collected in a gas jar held upside down.

- Which gas is being collected? Write the balanced chemical equation for its preparation. (1)
- Why is the test tube sloped slightly downwards? (1)
- Why is the gas collected in a gas jar held upside down, and not over water? (1)
- How can you test that the jar is full of this gas? (1)



[4]

Air behaves as if its molecular mass were about 29. (Atomic masses: C = 12, O = 16, N = 14, H = 1.)

Answer:

[2]

A man climbs down an old well to clean it and collapses at the bottom, although the air at the top of the well was fine. Which gas was most likely waiting at the bottom, and why did it collect there?

(not marked)

Put a thermometer inside a closed box of transparent plastic (or a clear plastic bottle with its cap) and leave it in sunlight. Put another thermometer beside the box in the sun, its bulb shaded with a piece of card. Read both every 15 minutes for an hour.

Time	Temperature inside the box (°C)	Temperature outside the box (°C)	Difference (°C)
at the start			
after 15 minutes			
after 30 minutes			
after 1 hour			
