

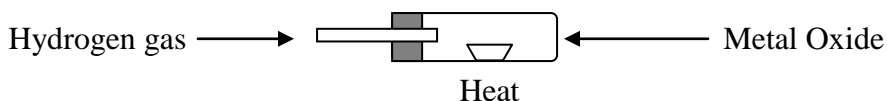
NAME _____ INDEX NUMBER _____

SCHOOL _____ DATE _____

WATER AND HYDROGEN

1. 1990 P1A Q 25

Use the information shown in the diagram below to answer the question that follows?



- (i) Explain why it is important to pass the hydrogen for some time before lighting it at point Z.

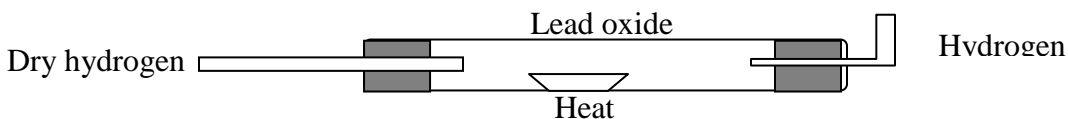
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- (ii) Write an equation for reaction that takes place when hydrogen burns at point Z.

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2. 1991 P1A Q 3

When hydrogen gas is passed over heated lead (II) oxide a reaction occurs. The diagram below shows a set up that could be used for this reaction.



- (a) What observation would be made in the combustion tube? (2 Marks)

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3. 1991 P1A Q 11

A solution of hydrogen chloride gas in water liberates hydrogen when reacted with Zinc metal while a solution of the same gas in methylbenzene does not. Explain (2 Marks)

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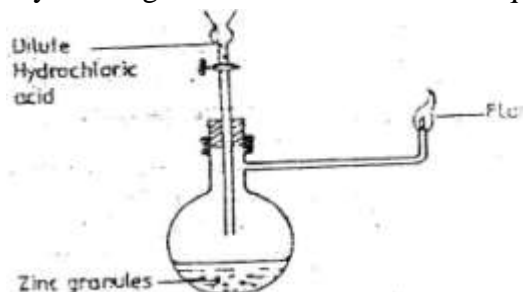
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4. 1995 Q 18

Study the diagram below and answer the questions that follow.



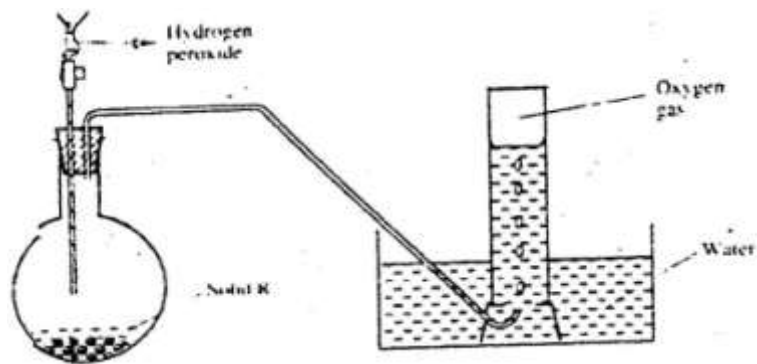
Write an equation for each of the two reactions that take place in the experiment represented by the diagram above (2 marks)

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5. 2002 Q 22

The diagram below is set – up for the laboratory preparation of oxygen gas



(a) Name solid R

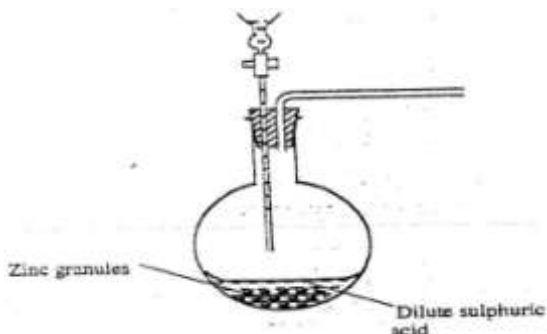
(b) Write an equation for the reaction that takes place in the flask

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(c) Give one commercial use of oxygen

6. 2003 Q 6 P2

The set – up below was used to prepare hydrogen gas



a) Complete the diagram to show how a dry sample of hydrogen gas can be collected

(3 marks)

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b) Write an equation for the reaction, which takes place when hydrogen gas burns in air.

(1 mark)

c) i) 1.2 litres of hydrogen gas produced at room temperature and pressure when 3.27g of zinc was used. Determine the relative atomic mass of zinc. (Molar gas volume is 24 litres)

(4 marks)

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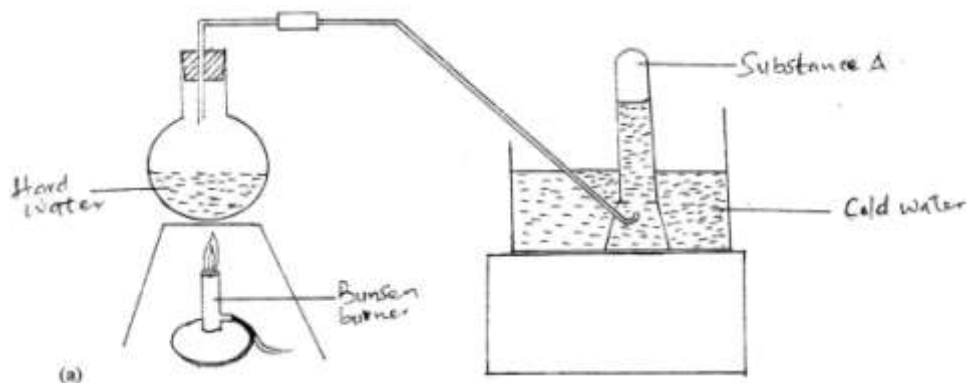
d) State two industrial uses of hydrogen gas.

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7. 2005 Q 3

The set-up below was used to demonstrate the effect of heat on hard water



a) Name substance A. (1 mark)

b) Explain why the heating of hard water produced substance A. (2 marks)

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8. 2006 Q 19

a) Starting from solid magnesium hydroxide, describe how a solid sample of magnesium hydroxide can be prepared (2 marks)

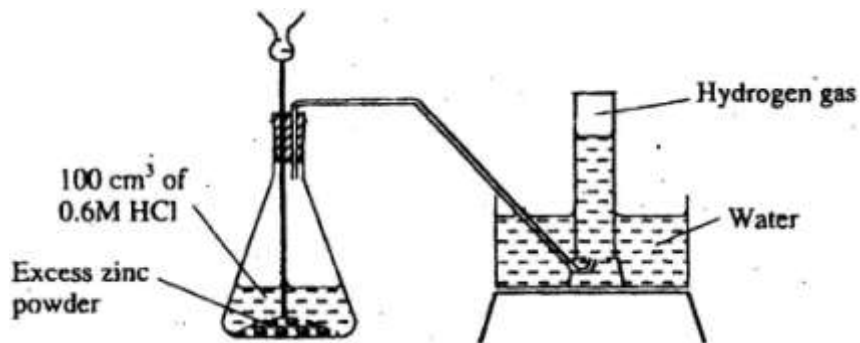
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b) Give one use of magnesium hydroxide. (1 mark)

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9. 2007 Q 25a

The diagram below shows a student's set-up for the preparation and collection of hydrogen gas.



- (a) How would the final volume of hydrogen gas produced be affected if 80cm³ of 0,75 M hydrochloric acid was used? (1 mark)

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10. 2009 Q 5c P2

Coal, oil and natural gas are major sources of energy. They are known as fossil
Hydrogen is also a source of energy.

- (i) State and explain two reasons why hydrogen is a very attractive fuel compared to fossil fuels (3 marks)

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- (ii) State one disadvantage of using hydrogen fuel instead of fossil fuel. (1 mark)

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11. 2011 Q 9

State two reasons why hydrogen is not commonly used as a fuel. (2 marks)

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12. 2011 Q 12

Sodium hydroxide can be prepared by the following methods; I and II.

- I. Sodium metal $\xrightarrow{\text{cold water}}$ Sodium hydroxide + Hydrogen
- II. Concentrated Sodium chloride $\xrightarrow{\text{process A}}$ Sodium hydroxide+chlorine+hydrogen

a) Name one precaution that needs to be taken in method 1. (1 mark)

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b) Give the name of process A. (1 mark)

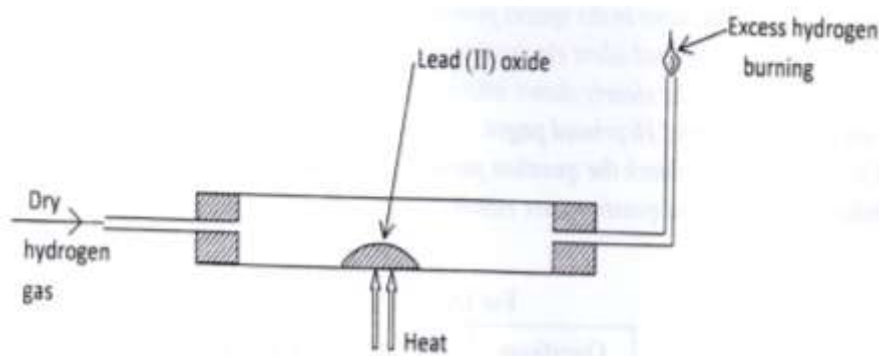
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c) Give one use of sodium hydroxide. (1 mark)

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13. 2012 Q3 P1

In an experiment, dry hydrogen gas was passed over heated Lead (II) Oxide as shown in the diagram below.

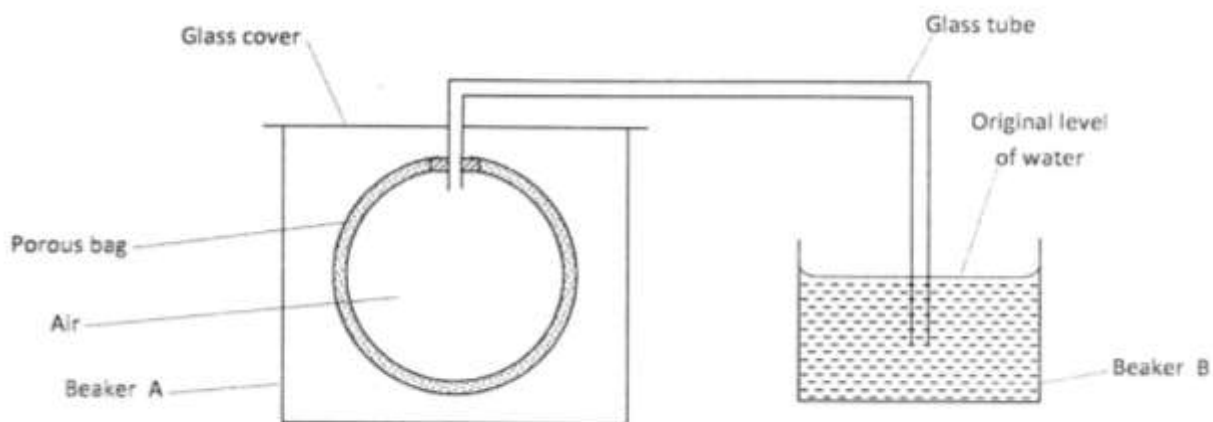


State and explain the observations made in the combustion tube (3 marks)

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14. 2012 Q19 P1

The set up shown below was used to investigate a property of hydrogen gas.



State and explain the observation that would be made in the glass tube if beaker A was filled with hydrogen gas. (3 marks)

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