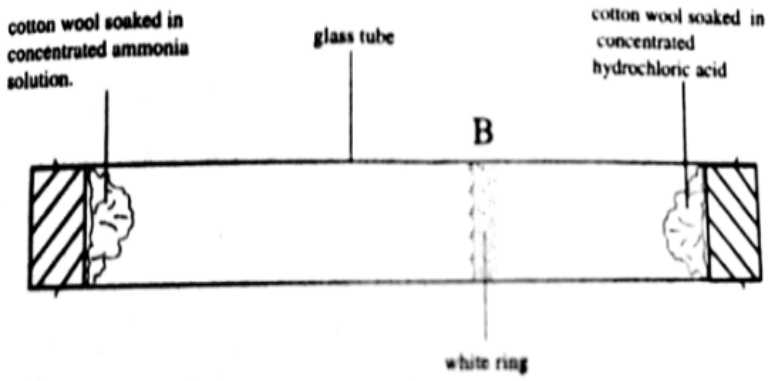
ST.JOSEPH'S SSS NAGGALAMA

S.2 CHEMISTRY WORK FOR COVID BREAK

1. One piece of cotton wool was soaked in concentrated ammonia and another in concentrated hydrochloric acid. The two pieces of cotton wool were placed in the glass tube as shown below.

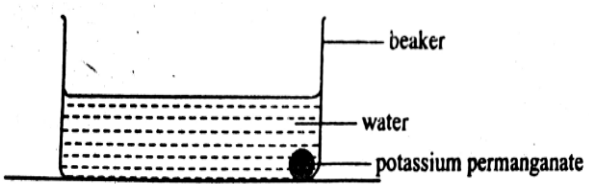


(i) Give the chemical name of the white ring.

(ii) Name the process occurring.

(iii) Explain why the white ring is formed in position B and not in the middle of the glass tube.

2. A crystal of potassium permanganate was placed at the corner in a trough of water as shown in the figure below and the experiment was allowed to stand for about 30 minutes.



(i) State what was observed after 30 minutes.

(ii) Name the process that occurred.

(iii) State the purpose of the experiment

3. (a) State three differences between a physical change and chemical change.

(b) State whether the following processes are physical or chemical changes.

(i) Boiling of water.

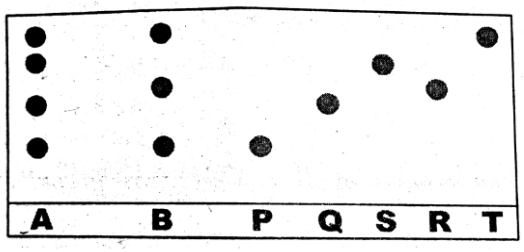
(ii) Rusting of iron.

(iii) Melting of candle wax.

(iv) Sublimation of ammonium chloride.

(v) Sugar dissolving in water.

4. State the method used to separate the following mixtures.
   (i) Soil and water
   (ii) Water and ethanol
   (iii) Oil and water
   (iv) Sodium chloride and ammonium chloride
   (v) Magnesium powder and iron fillings
5. The results of a paper chromatography experiment are shown in the figure below. A and B are different mixtures of pure substances P, Q, R, S and T.



(a) Identify the substances in the
   (i) Mixture A
   (ii) Mixture B

(b) Which substances are present in both mixtures?

(c) Which substances are present in mixture A only?

6. Explain what is meant by the terms
   (i) Immiscible liquids
   (ii) Miscible liquids
7. The table below shows the melting and boiling points of some pure substances at atmospheric pressure. Study it and answer the questions that follow.

Substance	**Melting point (^{0}C)**	**Boiling point (^{0}C)**
A	0	100
B	-117	78
C	115	444
D	-219	-183

(a) Which substance(s) is/are solid(s) at room temperature of 25^0C?

(b) Which substance(s) is/are liquid(s) at room temperature of 25^0C?

(c) Which substance(s) is/are gas(es) at room temperature of 25^0C?

(d) A sample of B was found to boil at a temperature of 85^0C at atmospheric pressure. What deductions do you make?

8. Write the chemical formula of each of the following compounds. **Reminder**; Use formulae of elements, radicals and their valencies.
   (i) Potassium hydroxide
   (ii) Sodium sulphate
   (iii) Calcium hydroxide
   (iv) Calcium oxide
   (v) Aluminium oxide
   (vi) Iron(III) sulphate
   (vii) Ammonium sulphate
   (viii) Copper(II) sulphide
   (ix) Zinc sulphate
   (x) Hydrogen peroxide.
9. State the valency of X in the following compounds. X is not the usual symbol.
   (i) X_2O_3
   (ii) CaX_2
   (iii) XCl_5
   (iv) $X(NO_3)_2$
   (v) $XHSO_4$
   (vi) Fe_3X_2
10. Write **a well-balanced equation** for each of the following reactions.

(i) When copper is heated in oxygen, copper(II) oxide is formed.

(ii) When sodium is dropped on water, sodium hydroxide solution is formed and oxygen gas is given off.

(iii) When burning magnesium ribbon is lowered in a gas jar of carbon dioxide, magnesium oxide and carbon are formed.

(iv) When water is added to sodium peroxide, sodium hydroxide solution is formed and oxygen is given off.

(v) When zinc oxide reacts with carbon monoxide, zinc and carbon dioxide are formed.

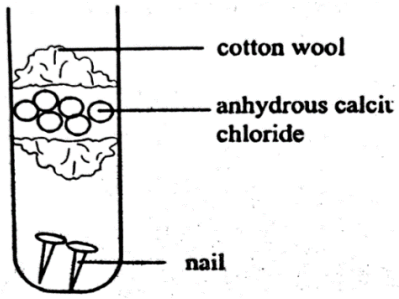
(vi) When carbon is burnt in excess oxygen, carbon dioxide is formed.

11. State what class of oxides each of the following belongs to;

Oxide	**Class of oxide**
Nitrogen dioxide	
Iron(II) oxide	
Carbon monoxide	
Lead(II) oxide	
Triiron tetraoxide	

12. (a) State the conditions necessary for rusting to take place.

    (b) During an investigation to show the conditions under which an iron nail can rust, an experiment was set up as shown in the figure below



    State the condition that was eliminated.

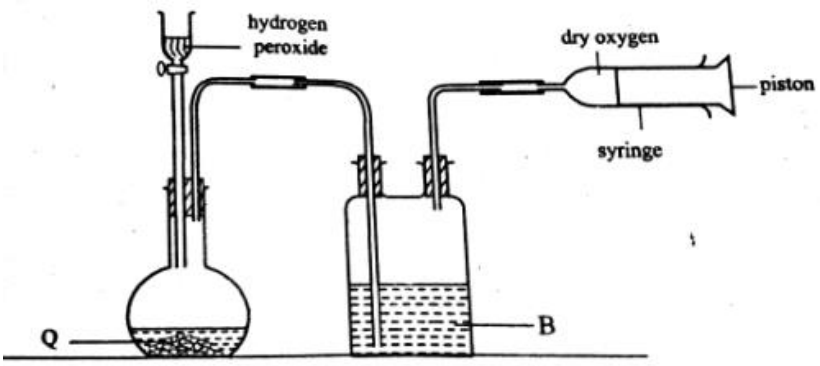
    (c) State two disadvantages of rusting.

    (d) (i) Give the chemical name of rust.

    (ii) Write the chemical formula of rust.

    (iii) Name four methods used to prevent rusting.

13. The figure below shows the setup of an apparatus used to prepare dry oxygen.



    (a) Name substance

    (i) Q

    (ii) B

(b) State the role played by

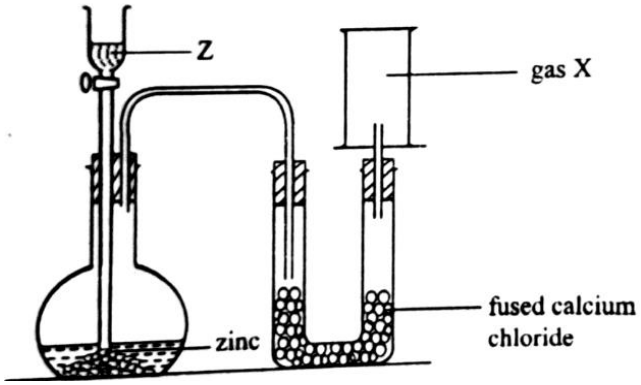
(i) Q

(ii) B

(c) Which other compound could play the same role as B.

(d) Write the equation for the reaction that takes place in the flask.

14. Study the figure below and answer the following questions.



(a) Identify

(i) Gas X.

(ii) Z.

(b) Write the equation for the reaction taking place in the flask.

(c) What is the purpose of anhydrous calcium chloride in the U-tube?

(d) Name another compound that could serve the same purpose as anhydrous calcium chloride.

(e) Give another metal that can be used instead of zinc.

(f) Name the method used to collect the gas and give a reason why the gas is collected using the mentioned method.

(g) Explain why sodium cannot be used instead of zinc granules.

END

You are requested to do this work please and return with the solutions as you report back to school.

#Stay home Stay safe