S.2 CHEMISTRY HOLIDAY WORK, JANUARY-2016

(READ, RESEARCH AND REMEMBER)

1. (a) (i) Draw a labelled diagram to show how a sample of oxygen can be prepared in a laboratory from Hydrogen peroxide.

(ii) Write the word equation for the reaction that takes place.

(b) State what is observed and write the word equations of reactions that occur when each of the following substances is lowered in a gas jar of oxygen.

(i) burning sodium,

(ii) ignited magnesium,

(iii) hot iron.

(c) Name one natural process by which oxygen can be obtained.

(d) Describe the chemical test for oxygen gas

(e) State how oxygen gas is obtained on a large scale

(f) State two uses of oxygen to society.

2 (a) (i) State how you would separate a mixture of sulphur and iron filings using a physical method.

(ii) Explain the principle behind the method you have given in your answer in (i) above.

(b) A mixture of sulphur and iron filings was strongly heated.

(i) State what was observed.

(ii) Write the word equation for the reaction.

3. (a) (i) What is an alloy ?

(ii) Give an example of an alloy that contains magnesium.

(iii) State the composition of the alloy you named in (a) (ii).

(b) State two uses of the alloy in a (ii).

4 (a) Give the names of the common oxides of:

(i) sulphur

(ii) aluminium

(iii) Iron

(iv) Copper

(v) Lead

(vi) Zinc

(b) State the physical state and colour(s) of each of the oxides given in (a) above.

(c) State the class to which each of the oxides given in (a) above belongs.

5. Against each mixture write down suitable methods of separation.
   (a) Coloured extracts of grass dissolved in ethanol.
   (b) Kerosene from Crude oil.
   (c) Paraffin from water.
   (d) Iron filings from Sulphur powder.
   (e) Ammonium chloride from Sodium chloride.
   (f) Seawater to obtain salt.
   (g) Blue Copper Sulphate crystals from aqueous copper sulphate.

6. Explain why fractional distillation is suitable for separating crude oil constituents?

7. Cynthia a form two student decides to separate powdered calcium carbonate from crystalline magnesium chloride by shaking the mixture with water and then filtering. Would this procedure succeed? Explain your answer.

8. What is the meaning of distillation and what is its importance in chemistry.

9. What do you understand by a saturated solution?

10. Explain the effect of impurities to both Boiling points and melting points of substances?

11. What do you understand by solvent extraction in separation of mixtures?

12. Describe one practical application of chromatography.

13. When fine chalk is suspended in water and viewed through a microscope the chalk particles appear to move in a random fashion. Explain this observation.

14.Describe briefly how filtration is applied industrially.

15 .A local brewer at Katanga slum accidentally added water to ethanol and this is all what he had left for his customers. Briefly describe an experiment that you would carry out to help this brewer.

16. When magnesium metal was burned in air, there was an increase in mass. Explain why there is an increase when a metal like magnesium is burned in air?

17. (i) What is rust?
(ii) State the conditions necessary for rusting to occur.
(iii) List seven methods used to prevent rusting.
(iv) On what basis are the methods used above designed?

18. Fill the table below stating what happens in each column when elements are burnt in oxygen.

Element	Colour of the flame	Colour of the product	Name of the product
Sodium			
Sulphur			
Phosphorus			
Carbon			
Iron			
Magnesium			
Copper			
Calcium			

END