

## S.2 Chemistry holiday work.

Attempt ALL questions.

1. State four properties that qualify air to be regarded as a mixture and not a compound.
2. Describe one experiment that can be performed to determine the percentage composition of oxygen in air.
3.
  - a) What is rust?
  - b) Give the chemical name of rust and its chemical formula.
  - c) State the conditions that are necessary for iron to rust.
  - d) State any four methods of preventing rusting that can be used at home.
  - e) How would one show that rust is hydrated.
4. Oxygen can be prepared in the laboratory by dropping hydrogen peroxide onto substance L.
  - a) Name substance L and give its formula.
  - b) What role does substance L play?
  - c) Give the conditions that are required for the reaction to occur.
  - d) Write the word equation for the reaction.
  - e) Name one possible drying agent for oxygen gas
  - f) How will the gas be collected after being dried?
  - g) Describe the test for oxygen gas.
  - h) Give any three uses of oxygen gas.
5.
  - (a) Draw a neat, well labeled diagram of how oxygen can be prepared in the laboratory from potassium chlorate.
  - (b) Write the word equation for the reaction that takes place in (a) above.
  - (c) State what would be observed and write the word equations that would take place when the following substances are burnt in oxygen.
    - (i) Magnesium
    - (ii) Phosphorus
    - (iii) Iron
    - (iv) Carbon

(v) Sodium

(vi) Sulphur

(d) Copy and complete the following table that shows the products formed when the following elements are burnt in excess air.

<b>Element</b>	<b>Name of oxide</b>	<b>Type of oxide</b>
Carbon		
Sodium		
Aluminium		
Copper		
Zinc		
Iron		
Nitrogen		