 <p>Y 3 G C L Bassaleg S C H O O L</p>	<p>Chemistry 1 Topic 3 Assessed homework</p> <p><u>Metals</u> <u>Metelau</u></p>	<p>Name.....</p> <p>Teacher.....</p> <p>Mark /44.....</p>
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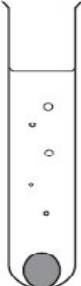
1) Four metals, iron, zinc, copper and magnesium, were placed in hydrochloric acid of equal concentration at room temperature. The diagrams below show what happened. Place the metals in order of reactivity, with the **most reactive first**. [1]f

Most

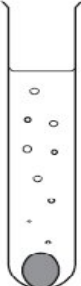
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Least.....



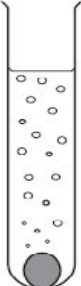
Iron



Zinc



Copper



Magnesium

2) a) Magnesium is more reactive than copper. When a mixture of powdered magnesium and copper oxide is heated, a violent reaction takes place. In the reaction, the magnesium is **oxidised** to magnesium oxide. Complete the **word** equation below for the reaction between magnesium and copper oxide.

magnesium + copper oxide → + [1]f/h

b) Explain the meaning of the term **oxidised**. [1]f/h

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c) Tin does not react with iron oxide but it **reduces** lead oxide. Explain the meaning of the term **reduce**. [1]f/h

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d) A pupil had four metals **A, B, C** and **D**. She placed each metal in turn into separate solutions of the nitrate of the other three. Use the results below to place the metals in order of reactivity. [2]f/

A displaced D	most reactive.....
B displaced A
B displaced D
C displaced A, B and D	least reactive

3) a) Steel is the most recycled metal in Britain. In Britain we use 13 billion steel cans every year. Which of the symbols below would you expect to see on a household container showing that it is suitable for recycling? [1]f



A



B



C

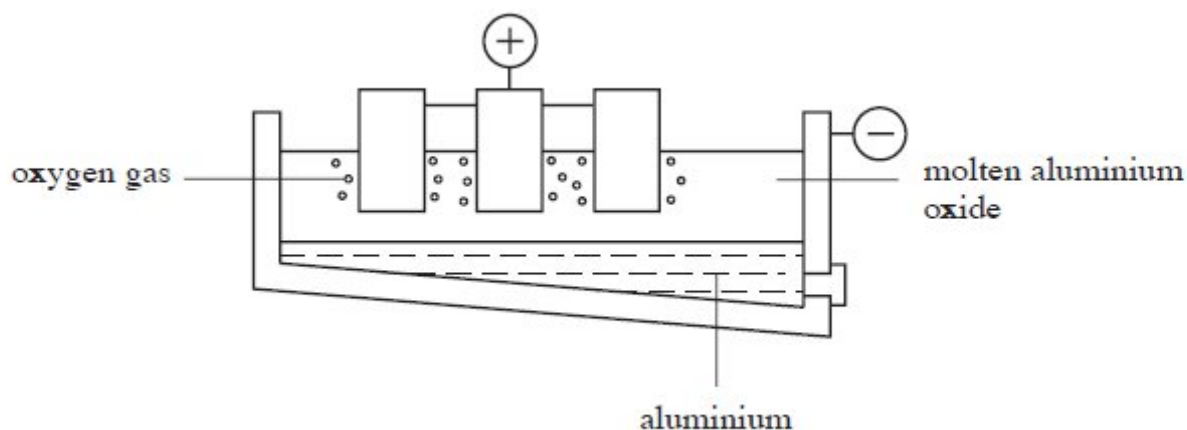


D

6) Some properties and uses of aluminium are given below. Draw a line from each property to the box with a use which relies on this property. [4]f

<u>Property</u>	<u>Use</u>
low density	overhead power cables
thermal conductor	aircraft
corrosion resistant	saucepans
electrical conductor	greenhouse frames

7) The process of electrolysis can be used to extract reactive metals, such as aluminium, from their ores.



Give the name of the

a) **process** used to break down a compound using an electric current.....[1]

b) **electrolyte** used in the process.....[1]

c) **term** used for the removal of oxygen from a metal oxide.....[1]

d) **product** formed at the anode.....[1]

e) **negative electrode**.....[1]

f) Choose the two most important factors to consider when siting an aluminium extraction plant in Britain [2]f

- Close to a power station
- Close to a coal mine
- Close to a bauxite mine
- Close to the coast because aluminium ore is imported.
- Close to limestone quarries

g) Write the **word** equation for the overall reaction that takes place during the electrolysis of aluminium oxide. [2]f/h

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h) Give **one** reason for this process being expensive. [1]h

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i) Give **two** ways in which the cost of **this process** is reduced. [2]h

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j) Give **one** way in which **this process** causes harm to the environment. [1]h

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8) Nanoscience involves the study of particles with sizes in the range 1-100nm. One new use of nano-sized silver particles is in deodorants. These deodorants are used to prevent body odour caused by bacteria.

a) State the property of nano-sized silver particles that enables them to be used in this way. [1]f

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b) Give another use of nano-sized silver particles that depends on this property. [1]f

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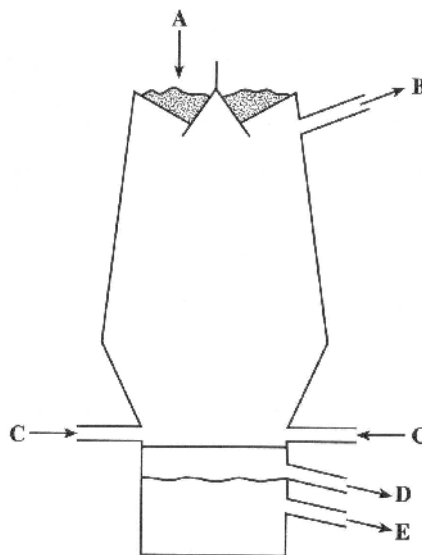
c) Some people are concerned that nanoparticles, being so small, could be absorbed into the body. Give **one** reason why this may be a cause for concern. [1]f

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9) The diagram to the right shows where materials enter and leave the blast furnace during the extraction of iron.

Use the words below to answer the following questions

- coke
- hot air
- iron
- iron ore
- limestone
- slag
- waste gases



a) Name the three materials which enter the furnace at A

[3]f

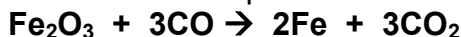
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b) Name the material which enters at C.....[1]f

c) Name the material which leaves at E.....[1]f

d) Name the material which leaves at D.....[1]f

e) The following symbol equation shows one reaction that takes place in the blast furnace. Write the **word** equation for this reaction [3]f/h



..... + → +