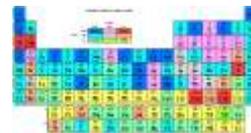


## Forensics 1 Homework Exercise 6



1. The Periodic Table contains 3 important Groups: The Alkali Metals, The Halogens and The Noble Gases. State an important **property** associated with each of these 3 Groups.

2. A pupil wanted to test the electrical conductivity of some of the elements.

a) Draw a labelled diagram of the apparatus you would use to carry this out.

b) Correctly place the following elements into a table with 2 columns headed **conductors** and **non-conductors**.

oxygen	bromine	copper	iron
gold	helium	mercury	xenon

c) What general rule can be made about conductors and non conductors in the Periodic Table?

3. A pupil carried out an experiment where she added universal indicator to some chemicals. Write down the missing words in her conclusion:

When a substance is acidic, the universal indicator changes colour to \_\_\_\_\_.

When a substance is \_\_\_\_\_, the universal indicator changes colour to blue.

If you have a \_\_\_\_\_ substance the universal indicator appears green.

4. You have to be aware of the hazards of using acids and alkalis in the laboratory. They can be very harmful.

a) Explain why lemon juice is only an irritant yet phosphoric acid is corrosive.

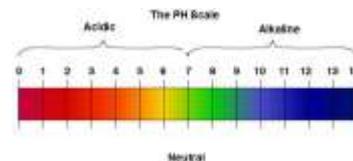
b) Explain why it is possible to use bicarbonate of soda with your bare hands, yet you should wear gloves when using oven cleaner such as sodium hydroxide.

5. When some metals are added to acid, fizzing is observed. This proves that a gas is given off.

a) Which gas is produced when a metal is added to an acid?

b) How can we prove this?

## Forensics 2 Homework Exercise 2



1. Next to each statement below, write "true" or "false":

- All metals fizz when added to acids
- Vinegar is an example of a weak acid.
- Acids turn Universal Indicator purple
- Soap is an acid

2. A pupil does some research for her homework. She reads about a lake in the USA called 'Little Echo' that has a pH of 4.5.

Why would it not be a good idea to travel across this lake in an iron boat?

3. A pupil was researching his family history and went to find one of his ancestor's gravestones. When he found it, he struggled to read the writing. The gravestone was made out of the rock limestone, which contains the mineral calcium carbonate.

- The rainwater in the area where the grave is has a pH of 6.5. What does this tell you about it?
- Use this information to explain what happened to the writing on the gravestone.

4. Present each of the statements below as a word equation:

- When lithium hydroxide was reacted with sulphuric acid, a chemical reaction occurred and lithium sulphate, along with water was produced.
- Potassium nitrate and hydrogen are both produced when lumps of potassium metal are added to nitric acid.

5. Fertilisers are substances that provide plants with nutrients and help them to grow.

- Explain why the use of fertilisers is constantly increasing.
- Fertilisers must contain at least one of three essential elements. Name these 3 essential elements.
- Fertilisers can sometimes have negative effects on the environment. Give an example of one of these effects.
- Why are artificial fertilisers not used in the forests?