**YEAR 10 SCIENCE**

**Chemistry Test - 2011**

**Name: Teacher: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Mark: /41**

Part 1: Multiple Choice – Write your correct answer in the table.

|  |  |
| --- | --- |
| **MULTIPLE CHOICE ANSWERS** | |
| **1** |  |
| **2** |  |
| **3** |  |
| **4** |  |
| **5** |  |
| **Marks** | **/5** |

1. Which of the following are all ***transition metals***?

(a) Li, Mn, Ca

(b) Mn, Fe, Cu

(c) F, Cl, Br

(d) Na, K, Fe

2. Which of the following are all ***alkali metals***?

(a) Li, Na, K

(b) Mg, Ca, Na (c) He, Ne, Ar

(d) Cu, F, Mn

3. Which of the following are ***noble gases***?

(a) Ne, Ar, He

(b) He, N, H

(c) O, H, Ar

(d) O, He, Ne

4. The ***valence electrons*** are:

(a) the number of total electrons an atom has.

(b) the number of electrons in the atom's outer shell.

(c) the number of electrons an atom has after it reacts.

(d) the number of electrons an atom has before it reacts.

5. The mass number of an element is how many \_\_\_\_\_\_\_\_\_\_\_\_ there are one atom.

(a) protons

(b) electrons

(c) neutrons

(d) protons + neutrons

**Part 2: Short Answer**

1. Explain how covalent bonding works.

(1 mark)

2. Explain how ionic bonding works.

(1 mark)

3. Write the chemical formulae for the following.

(a) aluminium sulphate (b) potassium carbonate

(c) sodium chloride (d) ammonium chloride

(e) magnesium oxide (f) iron (II) phosphate

(g) calcium iodide (h) copper (II) bromide

(8 marks)

4. Fill in the missing words.

|  |  |
| --- | --- |
| Metal properties | Non-metal properties |
| They are m\_\_\_\_\_\_\_\_\_\_\_\_\_\_, this means they can be hammered into sheets. They are also d\_\_\_\_\_\_\_\_\_\_\_\_, which means they can be stretched into wires. | They are b\_\_\_\_\_\_\_\_\_\_\_\_. This means that they will shatter when hammered. |
| Are s\_\_\_\_\_\_\_\_\_ at room temperature.  M\_\_\_\_\_\_\_\_\_\_\_\_ is the only metal to be a liquid at room temperature. | Some are liquids, some are g\_\_\_\_\_\_\_ and some are solids at room temperature. |
| Can conduct e\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. | Cannot conduct e\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.  (except for carbon) |
| Are found on the \_\_\_\_\_\_\_\_\_\_ hand side of the periodic table. | Are found on the \_\_\_\_\_\_\_\_\_\_\_ hand side of the periodic table. |

(5 marks)

5. Fill in the table below. (12 marks)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Name of element | Symbol | Atomic number | Mass number | Number of protons | Number of electrons | Number of neutrons | Electron configuration diagram |
| Neon |  |  |  |  |  |  |  |
|  | C |  |  |  |  |  |  |
|  |  | 8 |  |  |  |  |  |

6. Balance the following equations:

a) H2 + O2 🡺 H2O

b) CO + O2 🡺 CO2

c) NaNO3 + PbO 🡺 Pb(NO3)2  + Na20

d) Zn + HCl 🡺 ZnCl2 + H2

e) Al2O3 + H2SO4 🡺 Al2(SO4)3 + H2O

(5 marks)

7. Write **balanced** **chemical equations** for the following reactions.

(a) Iron metal reacts with hydrochloric acid to produce iron(II)chloride and hydrogen gas.

(b) Sodium hydroxide and sulphuric acid react to produce sodium sulphate and water.

(4 marks)