**10 SCIENCE 2016**

### CHEMISTRY TEST TWO

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Mark: /51

**SECTION A: MULTIPLE CHOICE (10 marks)**

**Use a ball point or ink pen to mark an X** on the letter that represents the best answer from the choice of answers . Marks are not deducted for wrong answers.

|  |  |
| --- | --- |
| Question | Answer |
| 1 | A B C D |
| 2 | A B C D |
| 3 | A B C D |
| 4 | A B C D |
| 5 | A B C D |
| 6 | A B C D |
| 7 | A B C D |
| 8 | A B C D |
| 9 | A B C D |
| 10 | A B C D |

**1.** Choose the correct definition for ‘ion’.

1. A charged particle.
2. An element with incomplete outer valence shells.
3. A pure substance made up of only one type of atom.
4. A particle with a neutral charge.

**2.** An atom that loses electrons to become an ion has a:

(a) Negative charge.

(b) Positive charge.

(c) No charge.

(d) Neutral charge.

**3.** AgNO3 has the compound name:

(a) Argon nitrite.

(b) Silver nitrate.

(c) Silver nitrite.

(d) Argon nitrate.

**4.** The chemical formula for boron oxide is:

(a) BO

(b) B2O3

(c) BaO

(d) B3O2

**5.** The general name for the chemicals that take part in a chemical reaction is:

(a) atoms.

(b) molecules.

(c) products.

(d) reactants.

**6.** Choose the equation that **is not** balanced.

(a) C5H12 + 4O2 🡪 CO2 + 6H2O

(b) Mg + 2HCL 🡪 MgCl2 + H2

(c) 4Al + 3O2 🡪 2Al2O3

(d) 2Zn + O2 🡪 2ZnO

7. Which of the following only contains diatomic gasses?

a. Oxygen gas, methane and chlorine gas.

b. Nitrogen gas, chlorine gas, methane and Helium gas.

c. Nitrogen gas, chlorine gas, oxygen gas and hydrogen gas.

d. Methane, helium gas, barium nitrate and hydrogen gas.

8. Which of the following contains only acids?

|  |  |
| --- | --- |
| A | HCl, Ca(OH)2, H2SO4 |
| B | NaOH, HCl, Ca(OH)2 |
| C | HCl, H2SO4 and H3PO4 |
| D | PbCO3, Ca(OH)2, H2SO4 |

9. All acid molecules contain the element:

a. Hydrogen.

b. oxygen.

c. chlorine.

d. Sulphur.

10. A written or formula statement that shows the reactant and products in a chemical reaction is called a:

a. formula

b. equation.

c. production.

d. expression.

SECTION B: SHORT ANSWER (41 marks)

1. Complete the table below.

|  |  |
| --- | --- |
| Word | Definition |
| Molecule |  |
| Compound |  |
| Product |  |

(3 marks)

1. For the formula in the table below state the number and type of elements in one molecule of the compound.

|  |  |
| --- | --- |
| Formula | Number and type of elements present in one molecule |
| C6H12O6 |  |
| PbCO3 |  |
| Al(NO3)3 |  |

(3 marks)

3. Complete the table below

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Positive ion | Negative ion | Formula |
| Sodium chloride |  |  |  |
| Calcium chloride |  |  |  |
| Aluminum oxide |  |  |  |
| Silver oxide |  |  |  |
| Iron(III) oxide |  |  |  |
| Calcium hydroxide |  |  |  |
| Iron(III) carbonate |  |  |  |
| Aluminum sulfate |  |  |  |
|  | 1 mark | 1 mark | 8 marks |

**(10 marks)**

4. Balance the chemical equations below. (7 marks)

**a)** Na + Cl2 🡪 NaCl

**b)** Al + O2 🡪 Al2O3

**c)** S8 + O2 🡪 SO2

**d)** Ca + H20 🡪 Ca(OH)2 + H2

**e)** V2O5 + CaS 🡪 CaO + V2S5

**f)** Fe2O3 + C 🡪 CO2 + Fe

**g)** Al + HCl 🡪 AlCl3 + H2

**5. Complete the table below**

|  |  |
| --- | --- |
| Name | Formula |
|  | CH4 |
| Water |  |
| Carbon dioxide |  |

(3 marks)

6. For the word equations below. Write them out as formula equations and then balance them (if they need to be balanced).

(10 marks)

1. Silver metal + Hydrochloric acid 🡪 Sliver chloride + hydrogen gas
2. Aluminium metal + Hydrochloric acid 🡪 Aluminium chloride + Hydrogen gas
3. Silver sulphate + calcium metal 🡪 calcium sulphate + silver metal
4. Calcium + Nitric acid 🡪 Calcium nitrate + hydrogen gas

1. Sulphuric acid + Sodium hydroxide 🡪 Sodium sulphate + Water

**7.** A chemist is developing a new chemical reaction for converting iron ore into iron metal. She measures the amount of iron metal produced by the chemical reaction every minute for the first 5 minutes. Her data is in the table below.

Draw a graph using the information from the table below. (5 marks)

|  |  |
| --- | --- |
| **Time (minutes)** | **Iron produced (g)** |
| 0 | 0 |
| 1 | 20 |
| 2 | 42 |
| 3 | 53 |
| 4 | 60 |
| 5 | 68 |

[](http://www.google.com.au/url?sa=i&rct=j&q=graph+paper&source=images&cd=&cad=rja&uact=8&docid=bnDyK-WDEHhooM&tbnid=OH_xw5ZTcFEuvM:&ved=0CAUQjRw&url=http://virtualmathtutor.blogspot.com/2010/11/how-to-draw-circle-without-compass.html&ei=RKw4U5fxF8fClQWCrIGoCQ&psig=AFQjCNHahbsWAgdANQM5RZCXw4z48cLLBw&ust=1396309252654415)

**Table of common ions**

|  |  |
| --- | --- |
| **+1 charge** | **- 1 charge** |
| Hydrogen H+  Lithium Li+  Sodium Na+  Potassium K+  Copper (I) Cu+  Silver Ag+  Ammonium NH4+ | Fluoride F-  ChlorideCl-  Bromide Br-  Iodide I-  Hydride H-  Hydroxide OH-  Nitrite NO2-  Nitrate NO3- |
| **+2 charge** | **- 2 charge** |
| Manganese Mn2+  Magnesium Mg2+  Calcium Ca2+  Barium Ba2+  Zinc Zn2+  Copper (II) Cu2+  Mercury (II) Hg2+  Iron (II) Fe2+  Tin (II) Sn2+  Lead (II) Pb2+  Nickel (II) Ni2+  Beryllium Be2+ | Oxide O2-  Sulfide S2-  Carbonate CO32-  Sulfate SO42-  Sulfite SO32- |
| **+3 charge** | **- 3 charge** |
| Aluminum Al3+  Iron (III) Fe3+  Chromium (III) Cr3+  Boron B3+ | Nitride N3-  Phosphate PO43-  Phosphide P3- |

**Common acids**

