City International School

FIRST TERMINAL EXAMINATION – 2015 - 2016

Date : 09/10/2015 **Marks : 80**

Std : VIII **Subject : Chemistry (Paper II)** **Time :** 2hrs

You will not be allowed to write during the first 15 minutes.
This time is to be spent in reading the question paper, the time given at the head of this paper is the time allowed for writing the answer.
Section I is compulsory. Attempt any four questions from section II.
The intended marks for questions or parts of questions are given in brackets ( )

SECTION I [40 MARKS]
Attempt all questions from this section.

Question 1

a. i. Write the chemical formula of the following compounds. **(6)**

1. Aluminium phosphate
2. Plumbous nitrate
3. Arsenic sulphide
4. Sodium bisulphate
5. Sulphurous acid
6. Phophorous pentoxide

ii. State the electronic configuration of the following atoms: **(4)**

1. $^{32}_{16}S^{-2}$ 2. $^{24}_{12}Mg$ 3. $^{40}_{20}Ca^{2+}$ 4. $^{19}_{9}F^{-1}$

b. i. Complete and balance the following chemical equations. **(4)**

1. $AlBr_3 + Cl_2 \longrightarrow$
2. $(NH_4)_2CO_3 \longrightarrow$
3. $CuO + HCl \longrightarrow$
4. $Hg_2CO_3 \longrightarrow$

ii. Draw the orbital diagrams of the following atoms. **(3)**

1. $^{31}_{15}P$ 2. $^{14}_{7}N$ 3. $^{19}_{9}F$

iii. Name the ionic compounds using Roman numerals: **(3)**

1. HgI_2 2. Mn_2O_4 3. Fe_2O_3

c. i. State the term defined: **(3)**

1. The vessel consisting of electrodes and electrolyte in which electrolysis takes place.
2. A single compound is broken down into two or more simpler substances in a chemical reaction.
3. The combining capacity of an element during the course of a chemical reaction.

ii. State what would you observe when: **(3)**

1. Hydrogen and chlorine react in direct sunlight.
2. A piece of sodium comes in contact with cold water.
3. When ammonium dichromate decomposes.

iii. Fill in the boxes. **(4)**

	Element / Ion	Proton	Neutron	Electron
1.	$^{27}_{13}Al^{3+}$	-		
2.	$^{35}_{17}Cl^{1-}$		-	

d. i. Name the following. **(4)**

1. A radioactivity which is an electromagnetic wave.
2. Two radioactive substances.
3. A method by which hydrogen is prepared on a large scale.

ii. $^{32}_{15}X$, $^{40}_{18}Y$, $^{39}_{19}Z$ represents atoms of three different elements:

1. Which atom has the tendency to, **(3)**
   →Lose electrons →Gain electrons
   →Neither lose nor gain electrons

2. Which atom represents: **(3)**
   →Metal →Non – metal →Inert gas

SECTION II [40 MARKS]
Attempt any four questions from this section.

Question 2

a. Give balanced equations for the preparation of Hydrogen gas by two Industrial methods. **(3)**

b. Define. i. Electrolysis ii. Isotopes **(3)**
iii. Displacement reaction

c. Calculate the molecular weight of the following compounds. **(4)**
i. H_2SO_4 ii. P_2O_5 iii. Al_2O_3 iv. $CaCl_2$
(H = 1, Cl = 35.5, O = 16, S = 32, P = 31, Al = 27, Ca = 40)

Question 3

a. State the valency of: **(4)**
i. Nitrite ii. Antimony
iii. Ferrocyanide iv. Cobalt

b. Differentiate between. Strong Electrolyte and Weak Electrolyte. **(2)**

c. Write the balanced molecular equations for the word equation. **(2)**
   i. Copper + Oxygen $\longrightarrow$ Copper (II) oxide
   ii. Zinc + Steam $\longrightarrow$ Zinc oxide + Hydrogen

d. State the properties of hydrogen based on its, **(2)**
   i. Combustibility ii. Conductivity

Question 4

a. Explain why – Electrolytes in their molten state conduct electricity but do not conduct in solid state. **(3)**

b. State the colour of the flame when the following non – metals are burnt in air: **(3)**
   i. Hydrogen ii. Sulphur iii. Carbon

c. Give balanced equations to carry out the following conversion. **(4)**
   i. Iron to Ferric hydroxide ii. Nitrogen to Ammonium hydroxide

Question 5

a. Write the chemical formula of: **(3)**
   i. Caustic soda ii. Slaked lime iii. Quick lime

b. Calculate the weight of the magnesium oxide formed when 86g of magnesium reacts with steam. (Mg = 24, H = 1,O = 16) **(4)**

c. Balance and rewrite the following chemical reactions. **(3)**
   i. $Fe + H_2O \leftrightharpoons Fe_3O_4 + H_2$ ii. $Al_2O_3 \rightarrow Al + O_2$
   iii. $Pb(NO_3)_2 \rightarrow PbO + NO_2\uparrow + O_2\uparrow$

Question 6

a. Identify whether the given reactions are oxidation or reduction reaction. **(3)**
   i. $S^{2-} - 2e \rightarrow S$ ii. $Fe^{2+} - le \rightarrow Fe^{3+}$
   iii. $Cl + le \rightarrow Cl^-$

b. Give a balanced equation for, **(3)**
   i. The action of heat on copper hydroxide.
   ii. The action of cold water on calcium.
   iii. The action of oxygen on mercury.

c. Give reason:
   i. Hydrogen gas is collected by the downward displacement of water not air. **(3)**
   ii. Metals below hydrogen do not displace hydrogen from acids. **(1)**