

City International School

FIRST TERMINAL EXAMINATION – 2013 - 2014

Date : 01/08/2013

Marks : 80

Std : IX

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. Correct the following statements. (2)
1. Volume of a fixed mass of a gas is directly proportional to the temperature, the pressure remaining constant.
 2. The boiling point of water is 273k.
- ii. What is the valency of (5)
- | | |
|---------------------------------------|-----------------------------|
| 1. Fluorine in CaF_2 | 2. Sulphur in SF_6 |
| 3. Phosphorous in PH_3 | 4. Carbon in CH_4 |
| 5. Nitrogen in N_2O_5 | |
- iii. Define. (3)
- | | | |
|-----------------|------------------|------------------|
| 1. Liquefaction | 2. Melting point | 3. Boiling point |
|-----------------|------------------|------------------|
- b. i. A litre of gas at 10°C is heated until both its volume and pressure are tripled. Find the new temperature. (4)
- ii. Write the chemical names of the following compounds. (6)
- | | | |
|--------------------------------|----------------------------|-----------------------------|
| 1. $\text{Ca}_3(\text{PO})_4$ | 2. K_2CO_3 | 3. Ag_2SO_3 |
| 4. $\text{Mg}(\text{HCO}_3)_2$ | 5. KMnO_4 | 6. PbSO_4 |
- c. i. Balance the following equations. (5)
1. $\text{Fe} + \text{H}_2\text{O} \longrightarrow \text{Fe}_3\text{O}_4 + \text{H}_2$
 2. $\text{PbO} + \text{NH}_3 \longrightarrow \text{Pb} + \text{H}_2\text{O} + \text{N}_2$
 3. $\text{NaHCO}_3 \longrightarrow \text{Na}_2\text{CO}_3 + \text{H}_2\text{O} + \text{CO}_2$
 4. $\text{MnO}_2 + \text{HCl} \longrightarrow \text{MnCl}_2 + \text{H}_2\text{O} + \text{Cl}_2$
 5. $\text{S} + \text{HNO}_3 \longrightarrow \text{H}_2\text{SO}_4 + \text{NO}_2 + \text{H}_2\text{O}$
- ii. Write the formula of the following compounds. (3)
- | | |
|---------------------------|--------------------|
| 1. Bismuth nitrate | 2. Calcium bromide |
| 3. Potassium permanganate | |

- iii. Define. 1. Sublimation 2. Sublime (2)
- d. i. State law of conservation of mass. (1)
- ii. State the main postulates of kinetic theory with reference to. (4)
1. Composition of matter
 2. Inter particle space
 3. Inter particle attraction
 4. Energy possessed by particles of matter
- iii. The pressure of a gas at stp is doubled and the temperature is raised to 546k. What is the final volume of the gas. (3)
- iv. Explain on the basis of kinetic model about. (2)
1. Sublimation (any 2 points)

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

Question 2

- a. A gas occupies 3 liters at 0°C. What volume will it occupy at -20°C, the pressure remaining constant? (3)
- b. Give balanced equations by partial equation method. (2)
- i. Magnesium nitride reacts with water forming magnesium hydroxide and ammonia.
 - ii. Sulphur reacts with concentrated nitric acid forming sulphuric acid, nitrogen dioxide and water.
- c. State any five elements with the variable valencies. (5)

Question 3

- a. The formula of the nitride of a metal X is XN , state the formula of its sulphite and carbonate. (2)
- b. Write the formula of the following compounds. (4)
- i. Sodium bisulphate ii. Aluminium carbonate
 - iii. Diamine silver chloride iv. Tetra amine copper [II] sulphate
- c. Give reason. (2)
- i. Gases have high compressibility.
 - ii. Gases exert pressure in all directions.

Question 4

- a. ACl_2 is the chloride of metal X, state the formula of the sulphite and nitride of the metal A. (2)
- b. At what temperature will the volume of a gas at 0°C triple if the pressure remains constant? (4)
- c. Give the names of the following compounds. (4)
- i. K_2ZnO_2 ii. NaHCO_3 iii. NO iv. NaClO

Question 5

- a. Underline the compound in each equation given below, which is incorrectly balanced and write the correct balancing for the same. (3)
- i. $6\text{NaOH} + 3\text{Cl}_2 \longrightarrow 6\text{NaCl} + \text{NaClO}_3 + 3\text{H}_2\text{O}$
- ii. $\text{PbO}_2 + 4\text{HCl} \longrightarrow \text{PbCl}_2 + \text{H}_2\text{O} + \text{Cl}_2$
- iii. $\text{CaC}_2 + \text{N}_2 \longrightarrow 2\text{CaCN}_2 + \text{C}$
- b. Which will have the greater volume when the gases are compared at Stp. (2)
- i. 1.2 l N_2 at 25°C and 748 mm Hg
- ii. 1.25l O_2 at Stp.
- c. Give the formula and valency of (5)
- i. Aluminate ii. Chromate iii. Aluminium
- iv. Cupric v. Carbide

Question 6

- a. Write reference to change of state of matter explain the meaning of the term. (2)
- i. Vaporization ii. Solidification
- b. Give balanced equations for the following. (2)
- i. Ammonia is treated with chlorine giving ammonium chloride and nitrogen.
- ii. Ammonia reacts with copper(II) oxide releasing metallic copper, water and nitrogen gas.
- c. Write the formula of the (4)
- i. Chloride of a trivalent metal X ii. Nitride of a divalent metal Z
- iii. Sulphate of monovalent metal Y iv. Sulphite of a trivalent metal M
- d. How will you prepare. (2)
- i. Carbon dioxide from carbon monoxide.
- ii. Ferric chloride from Iron (II) chloride.