GREENLAWNS SCHOOL, WORLI
TERMINAL EXAMINATION: 2016-17
CHEMISTRY

Std: IX   Marks: 80

Date: 30/9/2016   Time: 2 hrs

Answers to this paper must be written on the paper provided separately. 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 answers. **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) Name the following: [5]
   - i. Temperature measured equal to Celsius temperature plus 273.
   - ii. Decomposition of a compound by the action of heat which on cooling forms the original substance.
   - iii. A salt other than calcium hydroxide, whose solubility decreases with rise in temperature of the solvent water.
   - iv. A metal which reacts with very dilute nitric acid at low temperatures liberating hydrogen.
   - v. Blue rays emitted from the negative plate when an electric discharge is passed through a tube containing a gas at low pressure.

b) Explain the following terms: [5]
   - i. Polar covalent compounds
   - ii. Efflorescent salts
   - iii. Occlusion
   - iv. Charles' Law
   - v. BOD

c) What will you observe when?
   - i. A piece of sodium is dropped into cold water.   [1]
   - ii. Pure hydrogen gas is burnt in air.   [1]
   - iii. Alpha particles are directed towards a metallic sheet.   [3]

d) Give reasons for the following: [5]
   - i. Sodium and potassium are kept immersed in kerosene oil.
   - ii. Lead cannot be used in the preparation of hydrogen using dilute acids.
   - iii. Oil spills are a threat to marine life.
   - iv. $FeCl_3$ turns into liquid state on exposure to atmosphere.
   - v. Rusting of iron is a chemical change.

e) Give balanced equations for the following: [5]
   i.   A chemical reaction which takes place on subjecting the reactants to pressure.
   ii.   Hydrogen as a reducing agent.
   iii. To obtain hydrogen from sodium hydroxide solution other than by electrolysis.
   iv. Combustion of phosphorus.
   v.   Steam is passed over red hot iron.

f) The apparatus below is a set-up to obtain hydrogen gas in the laboratory.
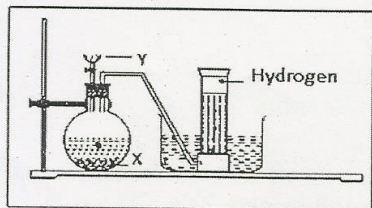
   i.   Name the reactants X and Y. [1]
   ii.   Justify the use of Y in this preparation. [1]
   iii. Give an equation for the reaction. [1]
   iv. Give 2 precautions in the collection of the gas. [2]
   v.   How is the gas collected in this reaction? [1]
   vi. How is the gas tested? [1]
   vii. Give 2 reasons for the method of collection of the gas. [2]
   viii. Chemical X being impure evolves traces of gaseous impurities. How are these impurities removed? [4]

g) Draw the electron dot structure to show the formation of water. [2]

SECTION II (40 Marks)
*Attempt **any four** questions from this Section*

Question 2
a) Give two balanced equations for the industrial method of preparation of hydrogen by Bosch process. [2]
b) Mention any four characteristics of physical change. [2]
c) Carbon dioxide occupies a volume of 336 cm^3 at S.T.P. Find its volume at 20^0C and at a pressure of 700 mm Hg. [3]
d) Write the following equations and balance them: [3]
   i.   Silver (I) oxide + hydrogen peroxide → Silver + Water + Oxygen
   ii.   Aluminium + Hydrochloric acid → Aluminium chloride + Hydrogen
   iii. Ammonium chloride + calcium hydroxide → Calcium chloride + Water + Ammonia

Question 3
a) Metal 'M' has the electronic configuration 2, 8, 3.
   i.   What is the valency of 'M'? [½]
   ii.   Is it oxidizing or reducing in nature? [½]
   iii. Give the formula of metal 'M' in its – sulphate, chloride, oxide, nitrate, carbonate and hydroxide. [3]

b) Some metals combine with alkalis to form hydrogen.

    i.   Name any two such metals. [2]

    ii.   What is the unique nature exhibited by these metals? [1]

    iii.   Name the unique nature. [1]

    iv.   Give an equation in each case. [2]

Question 4

a) A gas at -20^0C occupies the volume of 140 ml, calculate the temperature at which the volume of gas becomes 65 ml, pressure remains constant. [3]

b) With the help of electron dot diagram show the formation of methane. [2]

c) Give balanced equations for the following acids obtained using water as one of the reactants: [5]

    i.   Sulphurous acid

    ii.   Sulphuric acid

    iii.   Carbonic acid

    iv.   Nitrous acid

    v.   Hypochlorous acid

Question 5

a) A gas occupies the volume of one litre under atmospheric pressure. What will be the volume of the same amount of gas under 750 mm of Hg at same temperature? [3]

b) State the postulates of Bohr's atomic theory. [3]

c) State the impact of careless disposal of sewage waste on water pollution. [2]

d) Give the graphical representation of Boyle's law. [2]

Question 6

a) What do you mean by anomalous behaviour of water? How is it useful to aquatic plants and animals? [2]

b) Draw the atomic structure of Magnesium chloride. [2]

c) Give two chemical tests (equations) for water. [2]

d) Write the formula of the following salts: [2]

    i.   Gypsum

    ii.   Epsom salt

    iii.   Green vitriol

    iv.   Glauber's salt

e) How is hydrogen different from halogens? [2]

*****