DELHI PUBLIC SCHOOL NEWTOWN
SESSION: 2020-2021
HALF YEARLY EXAMINATION (ONLINE)

CLASS: IX **FULL MARKS: 40**
SUBJECT: CHEMISTRY **TIME: 1 Hour**

Instructions:

- **All questions are compulsory.**
- **This paper consists of 2 pages.**
- **All working including rough work must be clearly shown on the same sheet as the rest of the answers.**

Question1
Name the following: **[5]**

a. **The chemical name of $PbCrO_4$.**
b. **A metal whose nitrate on decomposition gives a metal, nitrogen dioxide and oxygen.**
c. **The particle that contains 11 protons, 12 neutrons and 10 electrons.**
d. **A divalent metal which displaces hydrogen from cold water.**
e. **The number of electron pairs which an atom shares with one or more atoms of the same or different kind so as to acquire a stable electronic configuration.**

Question 2
Fill in the blanks by choosing the most appropriate word given in brackets: **[5]**

a. **Conversion of sodium atom to its ion is an example of _____ (redox / reduction / oxidation).**
b. **If the formula of an oxide of a metal M is given by MO, then the formula of its sulphate will be_____(M_2SO_4 / $M_2(SO_4)_3$ / MSO_4)**
c. **Protium does not have a/an _____ (proton / electron/ neutron).**
d. **The Kelvin scale does not have _____ temperatures. (positive / negative / decimal)**
e. **Chlorine turns moist starch iodide paper_____(silvery black / blue black / blackish blue)**

Question 3
State your observation when: **[5]**

a. **Excess of sodium hydroxide solution is added to copper sulphate solution.**
b. **Dilute sulphuric acid is added to sodium sulphite solution.**
c. **Ammonium chloride is heated in a test tube.**
d. **Dilute hydrochloric acid is added to silver nitrate solution.**
e. **Mercuric carbonate is heated strongly.**

Question 4

Write balanced equation for the following reactions: [5]

a. **Thermal decomposition of an orange coloured salt resulting in the formation of nitrogen gas.**
b. **A trivalent metal reacting with dilute sulphuric acid.**
c. **A metal reacting with cold water forming a turbid solution.**
d. **Obtain hydrogen from:**
    i. **a mixture of carbon monoxide and hydrogen.**
    ii. **a divalent metal reacting with conc. alkali.**

Question 5

a. **A gas X at $-23^{O}C$ is heated and allowed to expand at constant pressure. Its volume on heating changes from 60mL to 90mL. Calculate the final temperature of the gas. State the Law. [3]**
b. **How are the following conversions carried out? Mention whether it is an oxidation or reduction reaction. [2]**
    i. $O \rightarrow O^{2-}$
    ii. $Cr^{3+} \rightarrow Cr^{6+}$

Question 6

a. **With the help of electron dot diagram, represent the following: [2]**
    i. **A molecule having triple bond.**
    ii. **A positive ion formed when dilute hydrochloric acid is dissolved in water.**
b. **Differentiate between $_{18}X^{40}$ and $_{20}Y^{40}$ in terms of stability of the atom. [1]**
c. **Write the electronic configuration of the following: [2]**
    i. S^{2-}
    ii. Al^{3+}

Question 7

a. **In the laboratory preparation of hydrogen from zinc and a dilute acid, give reasons for the following: [2]**
    i. **Hydrogen is not collected over air.**
    ii. **Copper is not preferred as the reactant metal.**
b. **Calculate the percentage of iron and carbon in $K_3[Fe(CN)_6]$. (At. wt. of K=39, Fe=56, C=12, N=14) [3]**

Question 8

a. **There are three elements E, F and G with atomic nos. 19, 8 and 17 respectively.**
    i. **Give the molecular formula of the compound formed between E and G.**
    ii. **State the type of chemical bond formed between E and F. [2]**
b. **Calculate the volume of ammonia gas at STP which at $17^{O}C$ and pressure of 740mm of mercury occupies a volume of 6.4cc. [3]**