DELHI PUBLIC SCHOOL NEWTOWN
SESSION: 2021-22
MONDAY TEST

CLASS: IX **FULL MARKS: 40**
SUBJECT: CHEMISTRY **DATE: 19.7.2021**

General Instructions:

- **The paper consists of two printed pages.**
- **Answers should be to the point.**
- **Question numbers should be copied carefully while answering the questions.**

Question:1
Name the following:

i) **The radical which is represented as MnO_4^{1-}**
ii) **A chemical reaction in which an element replaces another element in a compound.**
iii) **A metal which sinks in cold water turning the solution turbid.**
iv) **A trivalent metal which displaces hydrogen from dilute sulphuric acid.**
v) **The acid whose formula is $H_2C_2O_4$.** **[5]**

Question:2
Give reasons for the following:

i) **A chemical equation should be balanced.**
ii) **Lead cannot be used in the preparation of hydrogen using dilute sulphuric acid.**
iii) **Hydrogen is not collected over air in the laboratory.**
iv) **Mountaineers have to carry oxygen cylinders with them.**
v) **Concentrated sulphuric acid is not used in the laboratory preparation of hydrogen gas.** **[5]**

Question:3
What would you observe when :

i) **Potassium iodide solution is added to lead nitrate solution.**
ii) **Steam is passed over aluminium.**
iii) **Sulphur dioxide gas is passed through potassium dichromate solution.**
iv) **Water is added to quicklime.**
v) **Sodium hydroxide solution is added to copper sulphate solution.** **[5]**

Question:4
Give balanced equation for the following word equations:

i) **Iron (III) oxide + sulphuric acid → Iron (III) sulphate +water.**
ii) **Zinc + Sodium hydroxide → sodium zincate + hydrogen**
iii) **Zinc sulphide +oxygen → zinc oxide + sulphur dioxide**
iv) **Lead nitrate →lead monoxide + nitrogen dioxide + oxygen**
v) **Ammonium dichromate →nitrogen + chromium oxide +water.** **[5]**

Question:5

Write the chemical formula for the following compounds:

i) **Stannic phosphate**
ii) **Calcium acetate**
iii) **Potassium ferrocyanide**
iv) **Sodium arsenate**
v) **Aluminium borate** **[5]**

Question:6

The following questions relate to the laboratory preparation of hydrogen from zinc granules and a dilute acid.

i) **Granulated zinc is preferred to pure zinc for the reaction with dilute acid. Explain.**
ii) **Can dilute nitric acid be used in the preparation of hydrogen? Justify.**
iii) **How is the gas collected?**
iv) **State one important precaution you should take during the preparation of the gas.**
v) **How would you prove using a chemical test that the collected gas is hydrogen?[5]**

Question:7

Solve the following numericals:

i) **One litre of a gas at $10^{O}C$ is heated till both its volume and pressure are tripled. Find the new temperature.**
ii) **What temperature would be required to reduce the volume of a gas to $^{1}/_{6}$ the initial volume at constant pressure if the gas was originally at STP conditions. State the Law.** **[5]**

Question:8

i) **Calculate the percentage composition of barium in barium nitrite. [Ba=137, N=14, O=16]**
ii) **State the type of reaction in the following equations:**
   a) $2Ca(NO_3)_2 \rightarrow 2CaO + 4NO_2 + O_2$
   b) $Pb(OH)_2 + 2HNO_3 \rightarrow Pb(NO_3)_2 + 2H_2O$
   c) $2Al + 3CuSO_4 \rightarrow Al_2(SO_4)_3 + 3Cu.$ **[5]**