



STEPPING STONE  
SCHOOL (HIGH)

## CLASS :IX

**Subject:Chemistry**

**Date:12/05/2020**

**Topic:Identification of a gases**

**Time Limit:40 min.**

## ***Worksheet No.:4***

### **IDENTIFICATION OF GASES**

#### **I)HYDROGEN(H<sub>2</sub>)**

- 1) It is colourless , odourless and has no colour change in litmus.
- 2) It burns with a 'Pop' sound producing a blue flame.

#### **II)OXYGEN(O<sub>2</sub>)**

- 1) It is colourless , odourless and has no colour change in litmus.
- 2) It rekindles a glowing splinter.
- 3) The gas turns an alkaline solution of pyrogallol [C<sub>6</sub>H<sub>3</sub>(OH)<sub>3</sub>]dark brown

#### **III)CARBON DIOXIDE (CO<sub>2</sub>)**

- 1) It is colourless and odourless.
- 2) It turns blue litmus paper pinkish red.
- 3) When passed through lime water [Ca(OH)<sub>2</sub>].

#### **IV)CHLORINE (Cl<sub>2</sub>)**

- 1) It is greenish yellow gas, with a choking smell.
- 2) It changes blue litmus to red and then changes it to white.
- 3) It changes starch iodide paper blue black.
- 4) When pass through Silver nitrate ( $\text{AgNO}_3$ ) solution a white ppt is produced.

#### V) HYDROGEN SULPHIDE ( $\text{H}_2\text{S}$ )

- 1) The gas is colourless but has a smell rotten eggs.
- 2) It changes blue litmus red.
- 3) It turns lead nitrate solution [ $\text{Pb}(\text{NO}_3)_2$ ] black.
- 4) It turns lead acetate [ $\text{Pb}(\text{CH}_3\text{COO})_2$ ] paper dark brown.

#### VI) HYDROGEN CHLORIDE ( $\text{HCl}\uparrow$ )

- 1) It is colourless with pungent odour.
- 2) It changes blue litmus to red.
- 3) It gives dense white fumes with ammonia gas that changes to white solid on cooler parts of the test tube.

#### VII) SULPHUR DIOXIDE ( $\text{SO}_2$ )

- 1) It is colourless with smell of burning sulphur.
- 2) It turns blue litmus red and finally changes it to white if held for a long time.
- 3) It changes lime water milky and the milkness remains unlike Carbon dioxide.
- 4) It decolourise potassium permanganate solution ( $\text{KMnO}_4$ ).
- 5) It has no effect on Lead Acetate paper.

#### VIII) NITROGEN DIOXIDE ( $\text{NO}_2$ )

- 1) It is brown coloured with irritating smell.
- 2) It turns filter paper dipped in potassium iodide (KI) solution brown.
- 3) It turns green acidified Ferrous Sulphate solution ( $\text{FeSO}_4$ ) brown.
- 4) It changes starch iodide paper colourless to pink.

IX)AMMONIA( NH<sub>3</sub>)

- 1) It is colourless with pungent characteristic smell.
- 2) It changes moist red litmus blue.
- 3) It produces dense white fumes with hydrogen chloride acid gas which condense on cooler parts of the test tube as white solid.

X)WATER VAPOUR(H<sub>2</sub>O↑)

- 1) It is colourless but condenses on cooler regions as clear liquid.
- 2) It has no effect on litmus.
- 3) It turns blue cobalt chloride paper pink.
- 4) It changes anhydrous copper sulphate (CuSO<sub>4</sub>) from white to blue (CuSO<sub>4</sub> . 5H<sub>2</sub>O).

**ANSWER THE FOLLOWING**

**TIME : 40 MINS**

- 1) Name the gas that changes lime water milky
  - a) Permanently
  - b) temporary
- 2) Name the brownish gas .
- 3) Name a gas that changes cobalt chloride paper pink.
- 4) Name two gases that bleach litmus paper.
- 5) How will you distinguish between the two gases?
- 6) Which two gases change to solid when they mix with each other?
- 7) Name a greenish yellow gas ?
  - a) State any two properties of the gas.
- 8) Name a gas that has no effect on lead acetate paper.
- 9) Name a gas that burns with a 'pop' sound?

10) Use your chemical concept

- a) What does change of colour of litmus signify?
- b) Name the phenomenon that occurs in question no. 6.
- c) What is the difference between HCl and HCl↑ or H<sub>2</sub>O and H<sub>2</sub>O↑?

**FROM THE LIST OF IDENTIFICATION OF GAS**

State the equation of reaction between

- I and II
- I and IV
- I and IX