

MT EDUCARE LTD.

ICSE X

SUBJECT : **CHEMISTRY**

HYDROGEN CHLORIDE AND HYDROCHLORIC ACID

Assignment Sheet

STEP UP ANSWERSHEET

23. i) Sulphur dioxide
ii) Chlorine [2013]
24. i) Rotten egg smell of Hydrogen Sulphide gas will be given out.
ii) Initially a white precipitate of silver chloride is formed which dissolves in NH_4OH . [2013]
25. CaO is alkaline [2014]
26.
$$\text{Na}_2\text{S} + 2\text{HCl} \longrightarrow 2\text{NaCl} + \text{H}_2\text{S}\uparrow$$

(Sodium sulphide) (Dil.) (Sodium chloride) (Hydrogen sulphide gas) [2014]
27. (i)
$$\text{NaCl} + \text{H}_2\text{SO}_4 \xrightarrow{<200^\circ\text{C}} \text{NaHSO}_4 + \text{HCl}\uparrow$$

Sodium chloride Sulphuric acid(Conc.) Sodium hydrogen sulphate Hydrogen chloride
- (ii) It is dried by passing through conc. sulphuric acid because it does not react with hydrogen chloride gas whereas if CaO and P_2O_5 are used they react with hydrogen chloride forming the respective chloride.
- (iii) To prepare hydrochloric acid, HCl gas is dissolved in water using a special funnel arrangement as HCl gas is highly soluble in water. [2015]
28. AgCl [2016]
29. (C) HCl is highly soluble in water [2016]
30.
$$\text{NaHCO}_3 + \text{HCl} \longrightarrow \text{NaCl} + \text{H}_2\text{O} + \text{CO}_2$$
 [2016]
31. (i) When dilute Hydrochloric acid is added to copper carbonate, colourless gas is evolved which turns lime water milky and has no effect on KMnO_4 or $\text{K}_2\text{Cr}_2\text{O}_7$ solution.
- (ii) Sodium thiosulphate reacts with dilute hydrochloric acid, colourless gas with suffocating odour evolved which turns lime water milky and turns acidified KMnO_4 pink to colourless and acidified $\text{K}_2\text{Cr}_2\text{O}_7$ from orange to clear green and yellow sulphur particles are seen suspended.

- (iii) When dilute hydrochloric acid is added to lead nitrate and the mixture is heated, insoluble white precipitate is formed which is soluble in excess. **[2016]**
32. (i) Gas evolved : SO_2 (Sulphur dioxide)
Chemical test : It changes orange acidified potassium dichromate green.
(ii) Gas evolved : H_2S (Hydrogen sulphide)
Chemical test : Turns lead nitrate solution silvery black. **[2016]**
33. SO_2 **[2017]**
34. Gas is evolved having rotten egg smell **[2017]**
35. (A) $\text{NaHSO}_4 + \text{HCl}$
(B) Upward displacement of air **[2017]**

