

Class 10

Chemistry

Study of Compounds - Hydrogen Chloride - Worksheet Answer Key

Section A

1. Choose the correct answer from the choices given :

a. Aqua Regia is a mixture of :

iii. 3 parts of conc. HCl and 1 part of conc. HNO₃.

b. HCl gas can be dried by passing it through :

ii. conc. sulphuric acid.

c. HCl gas turns methyl orange indicator :

i. orange to pink

d. HCl is a :

ii. monobasic acid

2. Name the gas evolved:

i) CO₂

ii) H₂S

iii) H₂

iv) Cl₂

3. Give reasons for

i) HCl gas is collected by upward displacement of air because

a. it is highly soluble in water (1 volume of water dissolves 452 volumes of HCl)

b. and it is 1.28 times heavier than air

ii) Special funnel arrangement is used to prepare hydrochloric acid from HCl gas because the funnel arrangement prevents or minimizes

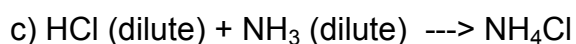
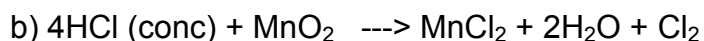
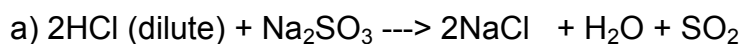
a. back suction of water

b. and provides a large surface area for absorption of HCl gas.

iii) Due to its high solubility, HCl gas fumes in moist air and forms a mist of droplets of HCl acid

Section B

1.



2.

a) Precaution - Reaction mixture is initially heated very slowly to control evolution of HCl gas

OR

Lower end of the thistle funnel should dip below the acid in the flask, otherwise HCl gas obtained will escape out of the thistle funnel.

b) Conc. HNO_3 not used because it is highly volatile and may volatilize along with the hydrogen chloride.

c)

i) Temperature $< 200^\circ \text{C}$



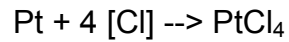
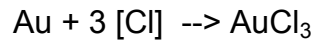
ii) Temperature $> 200^\circ \text{C}$



3. a) The fountain experiment demonstrates the high solubility and acidic property of HCl

b) A red coloured fountain is seen

4. a) HNO_3 (conc) + 3 HCl (conc.) \rightarrow NOCl + 2H₂O + 2 [Cl]



b) Iron sheets are dipped in HCl acid before galvanizing because the acid dissolves the metallic oxide coating on the surface of the metal thereby cleaning the surface

c) Any two industrial uses of HCl are:

i. In the manufacture of dyes, drugs, paints

ii. soldering works