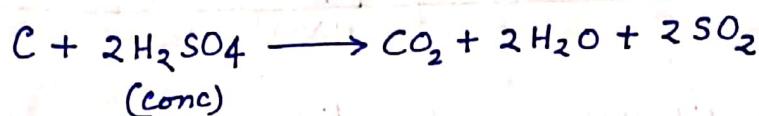


2018

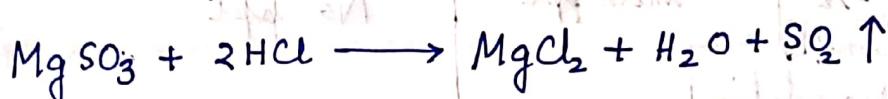
1. The catalyst used in Contact Process is V₂O₅

2. Write balanced eqⁿ :-

i) Action of concentrated sulphuric acid on carbon.



ii) Action of dilute HCl on magnesium sulphite



3. Give one relevant observation :-

i) Lead nitrate solution is mixed with dilute hydrochloric acid and heated.

Initially a white ppt will be formed which will dissolve on heating.

ii) Barium chloride solution is slowly added to sodium sulphate solution

A white ppt of barium sulphate (BaSO₄) will be observed.

4. Name the gas evolved :-

i) Sulphur is oxidised by concentrated nitric acid — Nitrogen dioxide (NO₂)

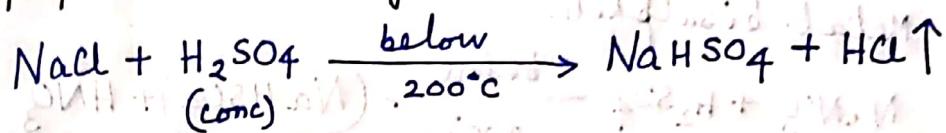
ii) Action of dilute HCl on sodium sulphide — H₂S (Hydrogen sulphide)

iii) Action of cold and dilute nitric acid on copper — Nitric oxide (NO).

5. i) Name the acid used for the preparation of HCl gas in the laboratory. Why this acid is preferred to other acids?

concentrated sulphuric acid is used.
It is preferred over other acids because it is a non-volatile acid.

ii) Give the balanced equation for the lab preparation of HCl gas.



6. For the preparation of hydrochloric acid in laboratory -

i) Why direct absorption of HCl gas in water is not feasible?

This is because HCl gas is highly soluble in water. If the gas is passed directly through the delivery tube to dissolve in water back suction will take place. Due to this water may enter the hot flask and hence may break it.

ii) What arrangement is done to dissolve HCl gas?

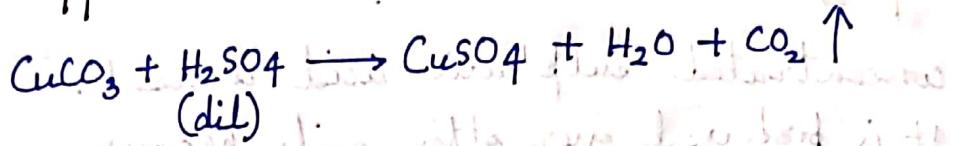
Funnel arrangement is used to dissolve HCl gas in water as it provides large surface area and avoids back suction.

7. Chemically distinguish between sodium chloride and sodium nitrate solution

Chemical used	NaCl	NaNO ₃
AgNO ₃ solution	White ppt of AgCl	No ppt

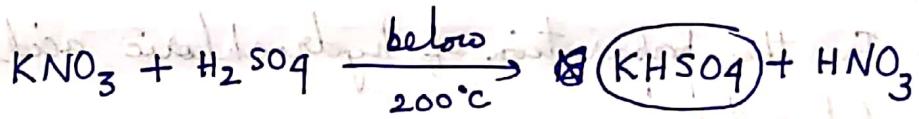
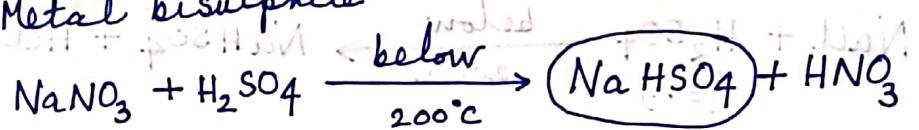
8. Give the balanced equation :-

Copper sulphate from copper carbonate



9. i) what type of salt is formed when the reactants are heated at a suitable temperature for the preparation of nitric acid.

Metal bisulphite



ii) Why glass apparatus is used in the lab (i) preparation of nitric acid?

Because nitric acid vapours being highly corrosive will attack rubber, cork, etc. Hence, all glass apparatus are used.

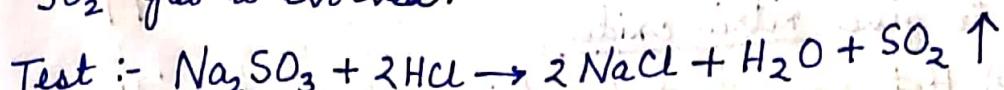
10. Which property of sulphuric acid is shown by its reaction with 1) ethanol
2) carbon?

1) Dehydrating agent, 2) Oxidising agent.

Dehydrating	Oxidising	Acid
It dehydrates ethanol to form carbon dioxide	It oxidises carbon to form CO ₂	It acts as an acid

2016

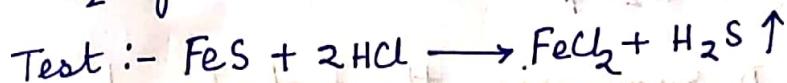
1. Identify the gas evolved and give the chemical test in the following cases :-
 i) Dil HCl acid reacts with sodium sulphite
 SO_2 gas is evolved.



To a solution of when hydrogen chloride, sodium sulphite solution is added, a suffocating odour gas is evolved which turns lime water milky and turns orange colour ^{acidified} potassium dichromate solution green.

- ii) Dil HCl acid reacts with iron(II) sulphide.

H_2S gas is evolved.



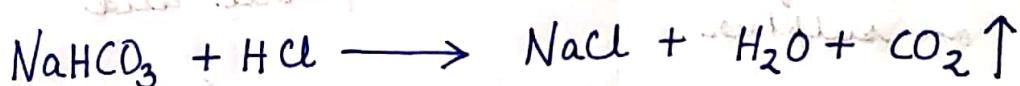
To the solution of hydrogen chloride, iron(II) sulphide is added, a rotten egg smelling gas is evolved which turns lead acetate solution black.

2. The aim of the fountain experiment is to prove that HCl is highly soluble in water.

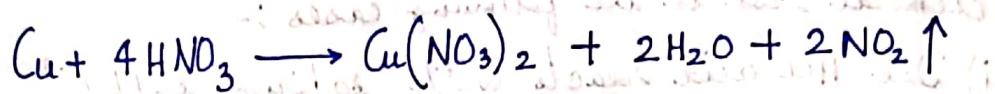
3. State your observation, when, dilute HCl acid is added to copper carbonate.

The reaction occurs with effervescence with evolution of colourless, odourless gas which turns lime water milky but has no effect on acidified potassium dichromate solution.

4. Write balanced equation for action of HCl acid on sodium bicarbonate.



5. Write a balanced equation for action of hot and concentrated nitric acid on copper.

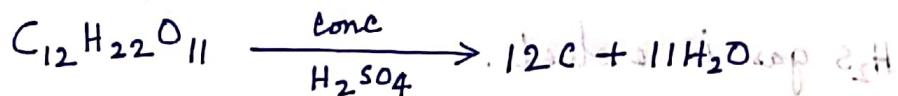


6. a) Cold, dilute nitric acid reacts with copper to give nitric oxide.

b) Hot, concentrated nitric acid reacts with sulphur to form nitrogen dioxide and

sulphuric acid.

7. Write balanced equation for when concentrated sulphuric acid is added to sugar crystals.



8. A, B, C and D summarise the properties of Sulphuric acid depending on whether it is dilute or concentrated.

A = Typical acidic property

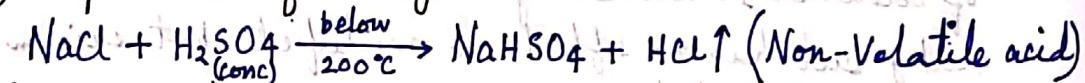
B = Non-volatile acid

C = Oxidising agent

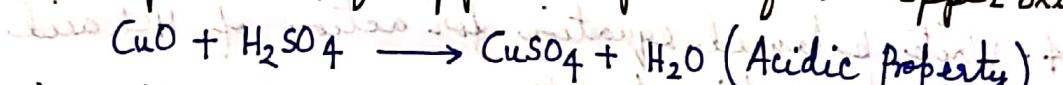
D = Dehydrating agent

Choose the property in the following cases:-

i) Preparation of HCl gas

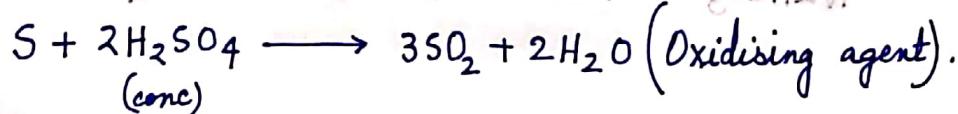


ii) Preparation of copper sulphate from copper oxide



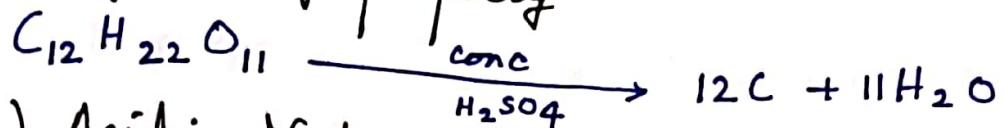
iii) Action of concentrated sulphuric acid

on sulphur.



q. Give balanced equation each to show the following properties of sulphuric acid :-

i) Dehydrating property



ii) Acidic Nature



iii) Non-volatile acid

