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Class - X  
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Subject - Chemistry  
Chapter - Study of Compounds  
Total no. of pages - 3

26  
30

Parima

Q1>

- i) The blue colour fades and the copper sulphate turns into its amorphous state. is left behind. ✓ (1)
- ii) Ammonia ✓ (1)
- iii) A white ppt is produced which is soluble in excess of  $\text{NH}_4\text{OH}$ . ✓ (1)
- iv) It acts as an oxidising agent. ✓ (1/2)
- v)  $\text{C}_6\text{H}_{12}\text{O}_6 \xrightarrow{\text{conc. H}_2\text{SO}_4} 6\text{C} + 6\text{H}_2\text{O}$  X Sugar is  $\text{C}_{12}\text{H}_{22}\text{O}_{11}$
- vi)  $\text{NH}_4\text{OH} + \text{HNO}_3 \rightarrow \text{NH}_4\text{NO}_3 + \text{H}_2\text{O}$  ✓ (1)
- vii) conc.  $\text{H}_2\text{SO}_4$  ✓ (1)
- viii)  $\text{Mn} + 2\text{HNO}_3 \text{ (dil)} \rightarrow \text{Mn}(\text{NO}_3)_2 + \text{H}_2$  ✓ (1)
- ix)  $\text{Na}_2\text{SO}_3 + 2\text{HCl} \text{ (dil)} \rightarrow 2\text{NaCl} + \text{H}_2\text{O} + \text{SO}_2$  ✓ (1)

x) Carbon dioxide - The remaining gases are highly soluble in water Siddhart, logically speaking your answer is correct but in doubt, it will be considered in boards. Go as per convention there.

xi) Nitric acid being highly corrosive reacts with the protein present in the skin forming xanthoprotein acid which stains the skin yellow. ✓ (1)

(2)

(1)

(2)

xii) Ammonia is dried through quick lime ( $\text{CaO}$ ) and is collected by downward displacement of air.

xiii) HCl acid acts as a pickling agent as it can remove impurities from the metal. specify how

(Y<sub>2</sub>)

xiv) Conc.  $\text{HNO}_3$  when left standing in an ordinary glass bottle decomposes due to the presence of light thereby releasing  $\text{NO}_2$  which imparts the yellow colour to the acid.

(1)

13

Q2&gt;

i) Pink.

ii) Greenish-yellow flame.

iii) ~~Pb(S PbSO<sub>4</sub>)~~ white ppt.

iv) Foky blue.

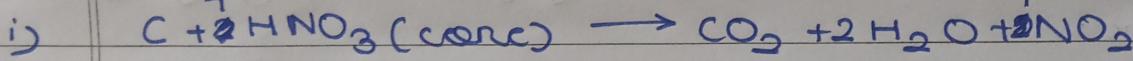
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1

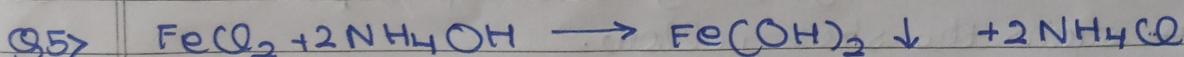
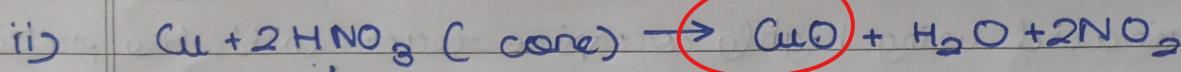
Q3> This is because dil HCl and water have almost similar boiling points due to which they can easily form a constant boiling mixture. This means that the amount of HCl and water present is equal and hence, there is no change in their composition.

specify temp &amp; conc.

Q4&gt;



(1/2)

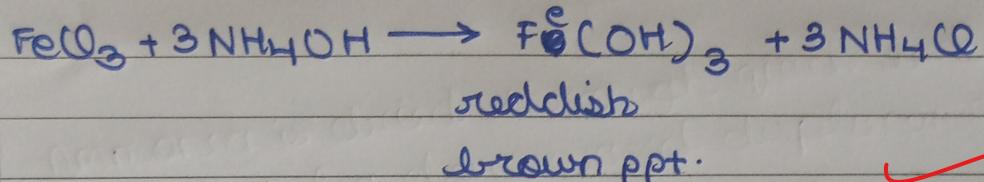


dirty green ppt.

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(3)



If a dirty green ppt. is formed then  $\text{Fe}^{2+}$  ions are present  
 If a reddish brown ppt. is formed then  $\text{Fe}^{3+}$  ions are present.

2

Q6&gt;

- i)  $\text{CaCO}_3 + \text{H}_2\text{SO}_4 \longrightarrow \text{CaSO}_4 + \text{H}_2\text{O} + \text{CO}_2$
- ii)  $\text{C} + \text{H}_2\text{SO}_4 \xrightarrow{\text{dil.}} \text{CO}_2 + 2\text{H}_2\text{O} + \text{SO}_2$
- iii)  ~~$2\text{Fe}^{2+} + \text{Na}_2\text{SO}_4 + 2\text{H}_2\text{SO}_4 \longrightarrow \text{Fe}_2(\text{SO}_4)_3 + 2\text{H}_2\text{O} + \text{SO}_2$~~

1

Q7&gt;

- i) To prepare  $\text{NH}_3$  in bulk.
- ii)  $\text{N}_2 + 3\text{H}_2 \rightleftharpoons 2\text{NH}_3$   
 $1 : 3$
- iii) Finely divided iron is used as a catalyst.

3

Q8&gt;

- i) Since conc.  $\text{HCl}$  is more volatile than  $\text{HNO}_3$ , it cannot displace the less volatile  $\text{HNO}_3$  from its nitrate salt.
- ii) Since  $\text{HNO}_3$  is highly corrosive, it will attack ~~any~~ <sup>they are</sup> rubber and cook due to which ~~it~~ <sup>they are</sup> not used.
- iii) If kept above  $200^\circ\text{C}$ , the gas ( $\text{HNO}_3$ ) may decompose into  $\text{NO}_2$ ,  $\text{H}_2\text{O}$  and  $\text{O}_2$  due to which the temperature is kept below  $200^\circ\text{C}$ .

2½

$\text{Na}_2\text{SO}_4$  crust  
 should be the first point,

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