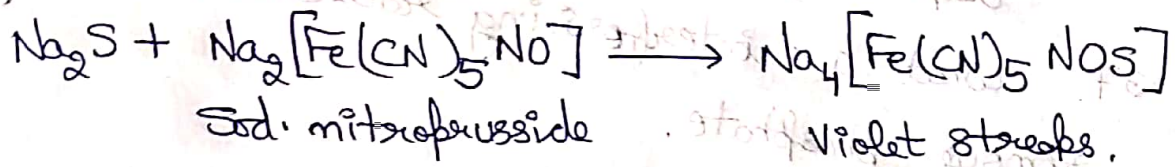
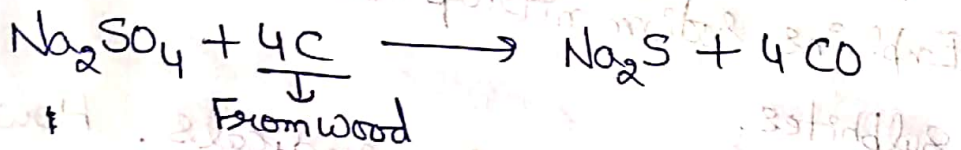
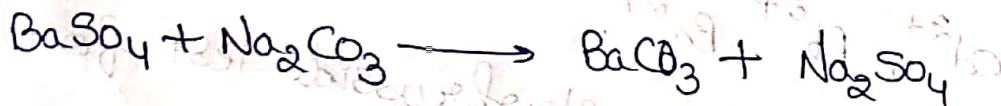


① Test for Sulphate (SO_4^{2-}): →

- (i) A paste is made by mixing a sulphate with Na_2CO_3 . Heat the paste on the tip of match stick which produces sodium sulphide, which gives purple or violet coloured streaks with sodium nitroprusside. This is known as Match stick test.



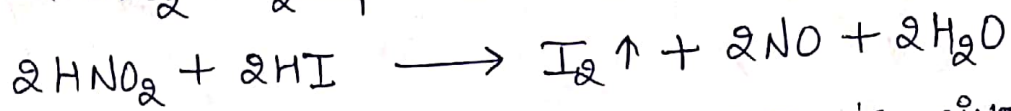
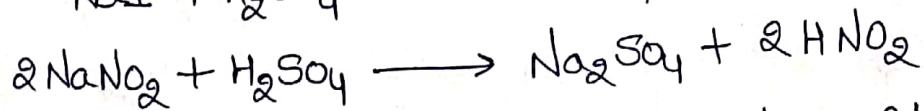
② When Cl^- , Br^- and I^- are present together: →

with conc. H_2SO_4 each of these evolve gases; HCl from Cl^- , Br_2 from Br^- and I_2 from I^- . The

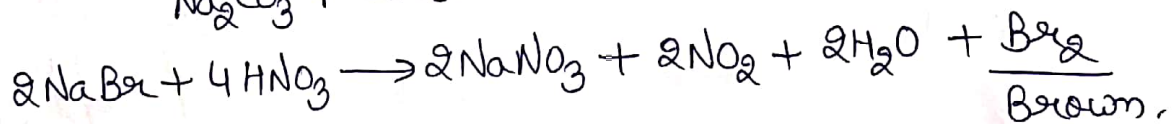
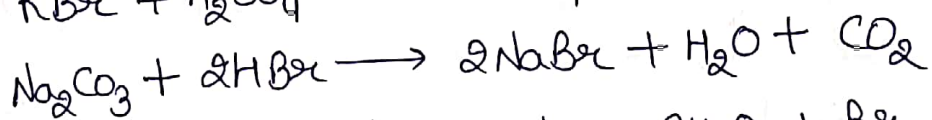
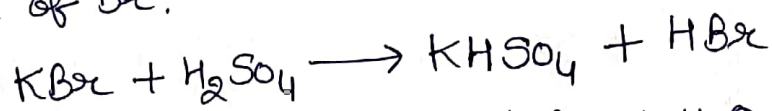
coloured gases I_2 and Br_2 can mask the colour of the other gas. For example, iodine (violet) vapours can mask the colour of Br_2 as well as of HCl where Br_2 can mask the colourless HCl gas.

Therefore, it becomes very difficult to test these acid radicals in the presence of each other. The following scheme is followed for their separate tests.

③ The three radicals can be detected from Na_2CO_3 extract.
To S.E, and dil. H_2SO_4 & solid NaNO_2 , boil the mixture. If violet coloured I_2 gas is evolved, it shows the presence of I^- .



The solution is boiled till no more of I_2 is given off.
The solution is made alkaline with Na_2CO_3 solⁿ and add conc. HNO_3 . Brown coloured Br_2 , if evolved, shows the presence of Br^- .



When the solⁿ become colourless, add AgNO_3 solⁿ.
Formation of white ppt. soluble in NH_4OH , confirms Cl^- .

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