

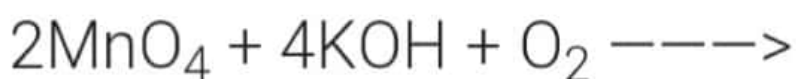


Question 10:

(i) MnO is basic whereas Mn_2O_7 is acidic in nature. Why?

(ii) Transition metals form alloys. Why?

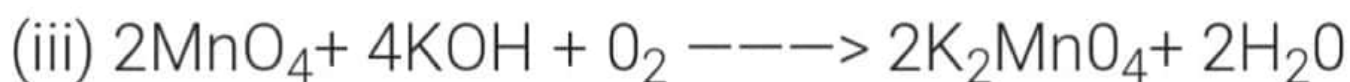
(iii) Complete the following equation:



Answer:

(i) In MnO , Mn has +2 oxidation state, whereas in Mn_2O_7 , Mn has +7 oxidation state. Higher the oxidation state, more will be acidic nature, e.g. Mn_2O_7 . Lower the oxidation state, more will be basic nature, e.g. MnO .

(ii) It is due to similar atomic size, they can replace one another in metallic bond.



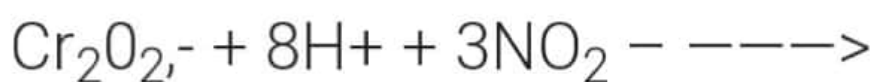
Question 12:

(a) Account for the following:

(i) Cu^+ is unstable in an aqueous solution.

(ii) Transition metals form complex compounds

(b) Complete the following equation:

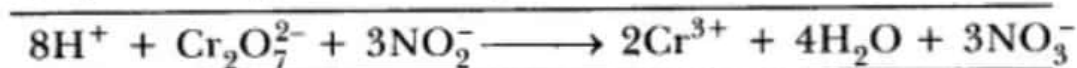
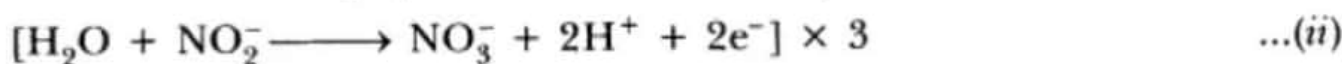
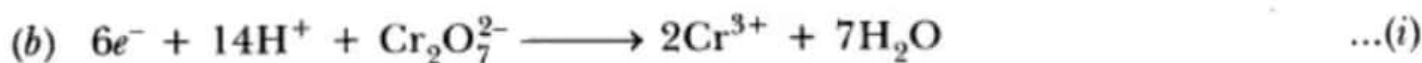


Answer:

(a) (i) It is because hydration energy of Cu^{2+} overcomes 2nd ionisation enthalpy, that is why Cu^+ changes to Cu^{2+} and Cu .



(ii) It is due to their small size, high charge and availability of vacant d-orbitals



[Adding (i) and (ii)]

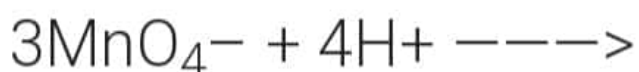
Question 13:

(a) How would you account for the following:

(i) Highest fluoride of Mn is MnF_4 whereas the highest oxide is Mn_2O_7

(ii) Transition metals and their compounds show catalytic properties.

(b) Complete the following equation:



Answer:

(a) (i) Oxygen can form double bond, therefore, it can form Mn_2O_7 , whereas 'F' cannot form double bonds, so, it can form MnF_4 .

(ii) Transition metals show variable oxidation states, therefore, they and their compounds act as catalyst.

