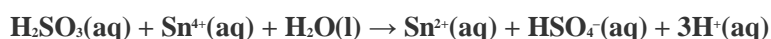


1. Consider the reaction (Jee main- 2014 online)



Which of the following statements is correct?

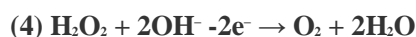
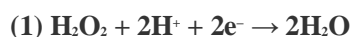
- (1) H_2SO_3 is the reducing agent because it undergoes oxidation
- (2) H_2SO_3 is the reducing agent because it undergoes reduction
- (3) Sn^{4+} is the reducing agent because it undergoes oxidation
- (4) Sn^{4+} is the oxidizing agent because it undergoes oxidation

Solution:

Oxidation is the loss of electrons during a reaction by a molecule. In the given equation, H_2SO_3 is the reducing agent because it undergoes oxidation.

Hence option (1) is the answer.

2. In which of the following reaction H_2O_2 acts as a reducing agent ? (Jee main 2014 online)



(1) (1), (3)

(2) (2), (4)

(3) (1), (2)

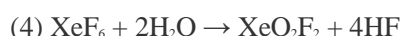
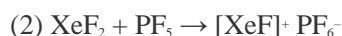
(4) (3), (4)

Solution:

Reducing agent is an element or compound that loses an electron to an electron recipient in a redox chemical reaction. In (2) and (4), H_2O_2 acts as a reducing agent.

Hence option (2) is the answer.

3. Which of the following reactions is an example of a redox reaction ? (Jee main 2017)

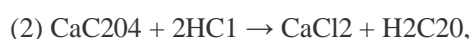
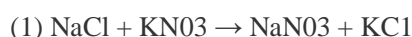


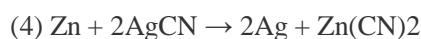
Solution:

In equation (1) Xe undergoes oxidation and oxygen undergoes reduction.

Hence option (1) is the answer.

4. Which of the following is a redox reaction ?





Solution:

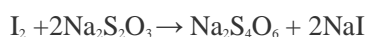
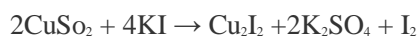
A redox reaction is any chemical reaction in which the oxidation number of a molecule, atom, or ion changes by gaining or losing an electron. The oxidation state shows a change only in a reaction between zinc and cyanide.

Hence option (4) is the answer.

5. Excess of KI reacts with CuSO_4 solution and then $\text{Na}_2\text{S}_2\text{O}_3$ solution is added to it. Which of the statements is incorrect for this reaction?

- (1) Cu_2I_2 is reduced
- (2) Evolved I_2 is reduced
- (3) $\text{Na}_2\text{S}_2\text{O}_3$ is oxidized
- (4) CuI_2 is formed

Solution:



Here statement (4) is incorrect.

Hence option (4) is the answer.

6. Amount of oxalic acid present in a solution can be determined by its titration with KMnO_4 solution in the presence of H_2SO_4 . The titration gives unsatisfactory result when carried out in the presence of HCl because HCl

- (1) gets oxidised by oxalic acid to chlorine
- (2) furnishes H^+ ions in addition to those from oxalic acid
- (3) reduces permanganate to Mn^{2+}
- (4) Oxidises oxalic acid to carbon dioxide and water

Solution:

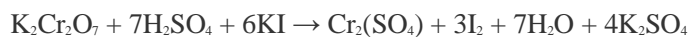
HCl is a strong reducing agent. It reduces permanganate to Mn^{2+} .

Hence option (3) is the answer.

7. The oxidation state of chromium in the final product formed by the reaction between KI and acidified potassium dichromate solution is

- (1) +4
- (2) +6
- (3) +2
- (4) +3

Solution:



Cr get reduced from +6 Oxidation state to +3 oxidation state.

Hence option (4) is the answer.

