

Q1. 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.