

Question 4

For the redox

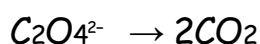
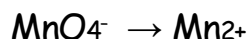
reaction, $\text{MnO}_4^- + \text{C}_2\text{O}_4^{2-} + \text{H}^+ \rightarrow \text{Mn}^{2+} + \text{CO}_2 + \text{H}_2\text{O}$ Correct stoichiometric coefficients of MnO_4^- , $\text{C}_2\text{O}_4^{2-}$ & H^+ are

Answer: (option 1) 2,5,16

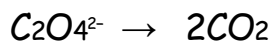
1. Reduction half reaction: $\text{MnO}_4^- \rightarrow \text{Mn}^{2+}$

2. Oxidation half reaction : $\text{C}_2\text{O}_4^{2-} \rightarrow \text{CO}_2$

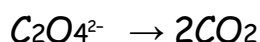
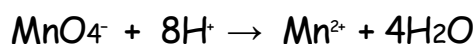
3. Balance all atoms other than O and H.



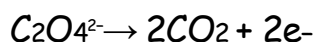
4. Now balance the oxygen atoms by adding H_2O molecules.



5. Now balance hydrogen atoms by adding H^+ ions.



6. To balance the charge, add electrons to a more positive side to equal the less positive side of the half-reaction.



7. Now multiply oxidation half-reaction by 5 and reduction half-reaction by 2, Add both the reactions we will get

