. **(c)** : At anode : $2Fe_{(s)} \longrightarrow 2Fe^{2+}_{(aq)} + 4e^-$

At cathode : $O_{2(g)} + 4H^+_{(aq)} + 4e^- \longrightarrow 2H_2O_{(l)}$

Overall reaction : $2Fe_{(s)} + O_{2(g)} + 4H^+_{(aq)} \longrightarrow 2Fe^{2+}_{(aq)} + 2H_2O_{(l)}$

The ferrous ions are further oxidised by atmospheric oxygen to ferric ions which come out as rust in the form of hydrated ferric oxide, $Fe_2O_3 \cdot xH_2O$.

As the concentration of H^+ ions is lowered *i.e.*, pH is increased, the reduction of oxygen becomes less favourable. Hence, the rate of corrosion is less in alkaline medium than in acidic medium. Thus, statement II is false.