Decomposition of H_2O_2 follows a first order reaction. In fifty minutes the concentration of H_2O_2 decreases from 0.5 M to 0.125 M in one such decomposition. When the concentration of H_2O_2 reaches 0.05 M, the rate of formation of O_2 will be : (1) 6.93×10^{-2} M min^{-1} (2) 6.93×10^{-4} M min^{-1} (3) 2.66 L min^{-1} at STP (4) 1.34×10^{-2} M min^{-1} Based on JEE Main 2016 123IITJEE.COM	Concentration changes from 0.5 M to 0.25 M in one half-life and then from 0.25 M to 0.125 M in the next half-life. $\therefore 2T_{1/2} = 50\,\text{min}$. Or, $T_{1/2} = 25\,\text{min}$. In the reaction $2H_2O_2 \rightarrow 2H_2O + O_2$, $-\frac{1}{2}\frac{d}{dt}[H_2O_2] = \frac{d}{dt}[O_2]$ Or, $\frac{1}{2}k[H_2O_2] = \frac{d}{dt}[O_2]$ Or, $\frac{1}{2}\times\frac{0.693}{T_{1/2}}[H_2O_2] = \frac{d}{dt}[O_2]$ So, $\frac{d}{dt}[O_2] = \frac{1}{2}\times\frac{0.693}{25}\times0.05 = 6.93\times10^{-4}$ Hence, Option (2).