Marks 4

- The following initial rate data have been obtained for the gas phase reaction of nitrogen dioxide, $NO_2(g)$, and ozone, $O_3(g)$, at 300 K.

$$2NO_2(g) + O_3(g) \rightarrow N_2O_5(g) + O_2(g)$$

$[NO_2(g)]$ M	$[O_3(g)]$ M	Rate M s^{-1}
0.65	0.80	2.61×10^4
1.10	0.80	4.40×10^4
1.10	1.60	8.80×10^4

What is the order of this reaction with respect to each reagent?

What is the rate constant of the reaction?

Answer: