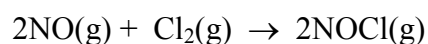**Marks**
3

• What are allotropes? Give an example of a pair of allotropes involving carbon and a second example of a pair not involving carbon.

4

• The following data were obtained for the reaction between gaseous nitric oxide and chlorine at 1400 K.

$$2NO(g) + Cl_2(g) \rightarrow 2NOCl(g)$$

EXPERIMENT NUMBER	INITIAL [NO] (mol L^{-1})	INITIAL [Cl$_2$] (mol L^{-1})	INITIAL REACTION RATE (mol L^{-1} s^{-1})
1	0.10	0.10	0.18
2	0.10	0.20	0.36
3	0.20	0.10	0.72

Deduce the rate law for this reaction and calculate the value of the rate constant.

RATE LAW	RATE CONSTANT
Answer:	Answer: