

Name of the Student: _____

Max. Marks : 21 Marks

Time : 21 Minutes

Mark Schemes

Q1.			
(a)	(i)	2	1
	(ii)	0	1
(b)	(i)	rate/[NO ₂] ² [O ₂]	1
		13	1
		mol dm ⁻³	1
	(ii)	1.9 × 10 ⁻³	1
	(iii)	Step 2	1
			[7]

Q2.

- (a) 2 or two or second

1

(b) $k = \frac{1.24 \times 10^{-4}}{(4.40)(0.82)}$

mark is for insertion of numbers into a correctly rearranged rate equ, k

= etc

if upside down, (or use of I_2 data) score only units mark

1

$= 3.44 \times 10^{-5} \text{ (min 3sfs)}$

1

$\text{mol}^{-1} \text{ dm}^3 \text{ s}^{-1}$

any order

1

- (c) no change or no effect or stays the same or 1.24×10^{-4}

1

- (d) 1 or 2 or 1 and 2

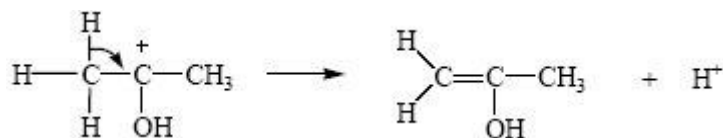
if wrong no further mark but mark on from no answer

1

rate equ doesn't involve I_2 or only step which includes 2 species in rate equ

1

- (e)



any second arrow loses the mark

1

[8]

Q3.

(a)	exp2	4.0×10^{-3}	1
	exp3	0.45×10^{-5}	1
	exp4	9.0×10^{-3}	1
(b)	$\frac{1.8 \times 10^{-5}}{(3.0 \times 10^{-3})^2 (1.0 \times 10^{-3})}$		1
	2000		1
	$\text{mol}^{-2} \text{dm}^6 \text{s}^{-1}$		1

[6]