Surname: _____; Given name: _____; Student number: _____

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question. Transfer your answers to the scantron sheet.

1) Given the following proposed mechanism, predict the rate law for the overall reaction. 1) _____

$2NO_2 + Cl_2 \rightarrow 2NO_2Cl$ (overall reaction)

Mechanism

$NO_2 + Cl_2 \rightarrow NO_2Cl + Cl$	slow
$NO_2 + Cl \rightarrow NO_2Cl$	fast

A) Rate = $k[NO_2][Cl_2]$
B) Rate = $k[NO_2Cl][Cl]$
C) Rate = $k[NO_2][Cl]$
D) Rate = $k[NO_2]^2[Cl_2]$
E) Rate = $k[NO_2Cl]^2$

2) The graph shown below depicts the relationship between concentration and time for the following chemical reaction. 2) _____

$2A \longrightarrow C$