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) Write a balanced reaction for which the following rate relationships are true. 1) _____

$$\text{Rate} = -\frac{1}{2}\frac{\Delta[N_2O_5]}{\Delta t} = \frac{1}{4}\frac{\Delta[NO_2]}{\Delta t} = \frac{\Delta[O_2]}{\Delta t}$$

A) $\frac{1}{2}N_2O_5 \rightarrow \frac{1}{4}NO_2 + O_2$

B) $\frac{1}{4}NO_2 + O_2 \rightarrow \frac{1}{2}N_2O_5$

C) $2N_2O_5 \rightarrow NO_2 + 4O_2$

D) $4NO_2 + O_2 \rightarrow 2N_2O_5$

E) $2N_2O_5 \rightarrow 4NO_2 + O_2$

2) A catalyst: 2) _____

I) lowers activation energy

II) provides an alternate reaction pathway

III) is consumed in the reaction and therefore does not appear in the chemical equation of each