Exercise Chapter 6
Chemical Kinetics

By
Dr Azizul Helmi Sofian
Faculty of Chemical and Natural Resources Engineering

azizulh@ump.edu.my

EXERCISE 1

Figure 1 shows the slope for the element XO_2 which has a value of 1.77 and the intercept of 1.46. Element XO_2 is not stable and easily degraded at temperatures more than 666 °C and the rate of reaction is depending on the concentration,c of element XO_2 at 777 °C. Given M is in mole/L.

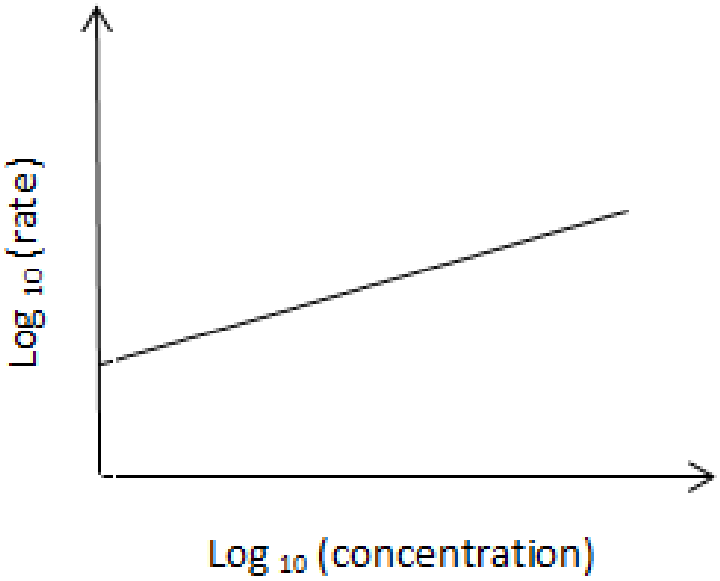

Figure 1: Rate reaction Vs Concentration

(a) What is the order of reaction?

(2 Marks)

(b) Calculate the value of the rate constant. Pay strict attention to the units.

(6 Marks)

(c) On the graph above, draw the line showing how the rate of reaction varies with the concentration of XO_2 at 888 ° C. No calculation necessary. Pay attention to relative values and slopes.

(2 Marks)

Authors Information

Credit to the authors: Dr Suriati Ghazali, Dr Sunarti Abd Rahman, Dr Norhayati Abdullah, Dr Izirwan Izhab