## Hi All,

You are asked to draw a graph through Excel using your experimental results of Experiment-7 by considering the information given below:

## Graphs that will be prepared through Excel:

1) Create the following table through excel according to the experimental data.

| Temperature (K) | $\Delta($ Time ) (s) | $\Delta\left[\mathrm{MnO}_{4}{ }^{-}\right](\mathrm{M})$ | Rate (M/s) | $1 / \mathrm{T}(1 / \mathrm{K})$ | $\operatorname{In}(\mathrm{Rate})(\mathrm{M} / \mathrm{s})$ |
| :--- | :--- | :--- | :--- | :--- | :--- |
| 298 |  |  |  |  |  |
| 308 |  |  |  |  |  |
| 318 |  |  |  |  |  |
| 328 |  |  |  |  |  |
| 338 |  |  |  |  |  |

2) Draw the graph of $\operatorname{In}$ (Rate) ( $y$-axis) vs. 1/T (x-axis), display the trendline equation on the chart, and select the display equation on the chart check box.
Print the drawn graph, created table, and attach it to your report.
3) According to the Arrhenius equation, there is a linear relation between $\operatorname{In} k$ and $1 / T$ and the slope of the $\operatorname{In} k$ vs $1 / \mathrm{T}$ graph gives $-\mathrm{E}_{\mathrm{a}} / \mathrm{R}$ and $\mathrm{R}=8.314 \mathrm{~J} / \mathrm{molK}$. Then, using this information, find the activation energy ( $\mathrm{E}_{\mathrm{a}}$ ) of the reaction and indicate your result on your report. (Consider $\operatorname{In}$ (Rate) as $\operatorname{In} k$ )

To find more information, please watch the video of the experiment.
With this e-mail, I also wanted to remind you to bring your reports of Exp-7 and Exp-8 to our course time next week.
Also, prepare yourself for the quizzes on the 9th and 10th experiments.
Best wishes,

