Name (in Arabic):                                    Section (day):

(Q1) A txhree trials experiment was done to determine the rate law and activation energy for the reaction of H2O2 and KI

| | Solution A | | | | | Solution B | |
|---|---|---|---|---|---|---|---|
| Trial | Boiled Water (ml) | Buffer (ml) | 0.3 M KI (ml) | 0.02 M $Na_2S_2O_3$ (ml) | starch (drops | 0.1 M $H_2O_2$ (ml) | Time for color change (seconds) |
| 1 | 4 | 1 | 1 | 1 | 5 | 3 | 130 |
| 2 | 3 | 1 | 2 | 1 | 5 | 3 | 65 |
| 3 | 1 | 1 | 1 | 1 | 5 | 6 | 65 |

• Determine the reaction rate for each trial?

• Determine p, q , the order of reaction with respect to I⁻ and $H_2O_2$ respectively?

• Determine k' the specific rate constant for each trial?

• What is the rate law of the reaction?