Name:

Q1/ Define the following: **(12 M)**
   1. Reaction mechanism
   2. Order of reaction
   3. Half time
   4. Chemical kinetics.

Q2/ For this reaction *(2Z +3Y → 4S+T)* the rate of reaction for *T* is 2 mol/L.S..What are
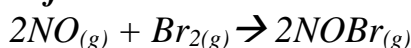   the rate of reaction for other materials ?   **(12 M)**

Q3/   *Calculate the order of this reaction:* aA + bB $\longrightarrow$ C + D
          The following data were obtaining.   **(12 M)**

Expt No.	A (mol/L)	B (mol/L)	Rate, (mol/L.s)
1	0.2	0.3	2×10^{-6}
2	0.4	0.3	2×10^{-6}
3	0.2	0.6	8×10^{-6}

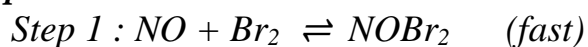*Q4*/ The initial conc. for ($CH_3COOC_2H_5$) was equal to 4M. The ($t_{1/2}$) for the reactant was
equal to 10 second. Find out the conc. of ($CH_3COOC_2H_5$) after 15 second?   **(12 M)**

$$CH_3COOC_2H_5 + NaOH \rightarrow CH_3COONa + C_2H_5OH$$

Q5/ *Derive and determine the law of this reaction:*   **(12 M)**
$$2NO_{(g)} + Br_{2(g)} \rightarrow 2NOBr_{(g)}$$
 Depend on the proposed mechanism:
               Step 1 : NO + Br$_2$ $\rightleftharpoons$ NOBr$_2$ (fast)
               Step 2 : NOBr$_2$ + NO $\rightarrow$ 2NOBr   (slow)

Best Wishes

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