

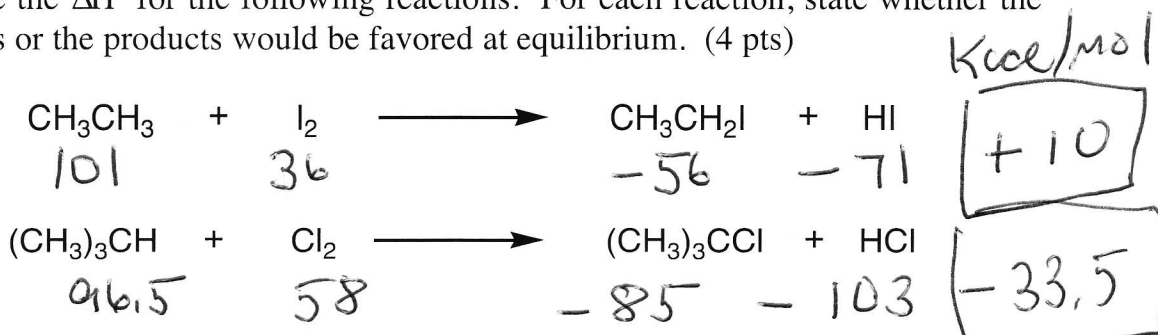
Suggested Answers

NAME

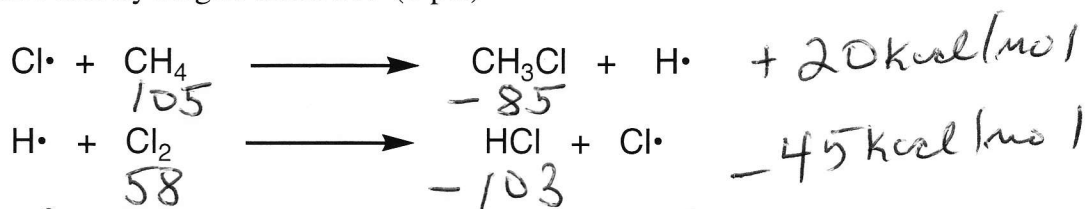
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Bond Dissociation Energies

1) Using Table 3-1 of Bond Dissociation Energies on page 98 of the book, calculate the ΔH^0 for the following reactions. For each reaction, state whether the reactants or the products would be favored at equilibrium. (4 pts)



2) Below is an *unlikely* mechanism for chlorination of methane by dichlorine to give chloromethane and hydrogen chloride. (6 pts)



a) Calculate the ΔH^0 for the overall reaction.

-25 kcal/mol (notice ΔH^0 does not depend on mechanism)

b) Calculate the ΔH^0 for each individual step.

See eqs

c) Why is this mechanism unlikely?

Step 1 is much too endothermic