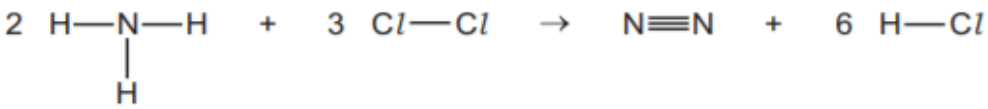
1. (a) The chemical equation can be represented as shown.



Use the bond energies in the table to determine the energy change, ΔH, for the reaction between ammonia and chlorine.

Bond	Energy/ kJ per mol
N-H	390
Cl-Cl	240
N≡N	945
H-Cl	430

- energy needed to break bonds

..... kJ

- energy released when bonds are formed

..... kJ

- energy change, ΔH, for the reaction between ammonia and chlorine

..... kJ [3]

(b) Is the reaction endothermic or exothermic? Explain your answer.

.....

.... [2]

TOTAL MARK: ____/5