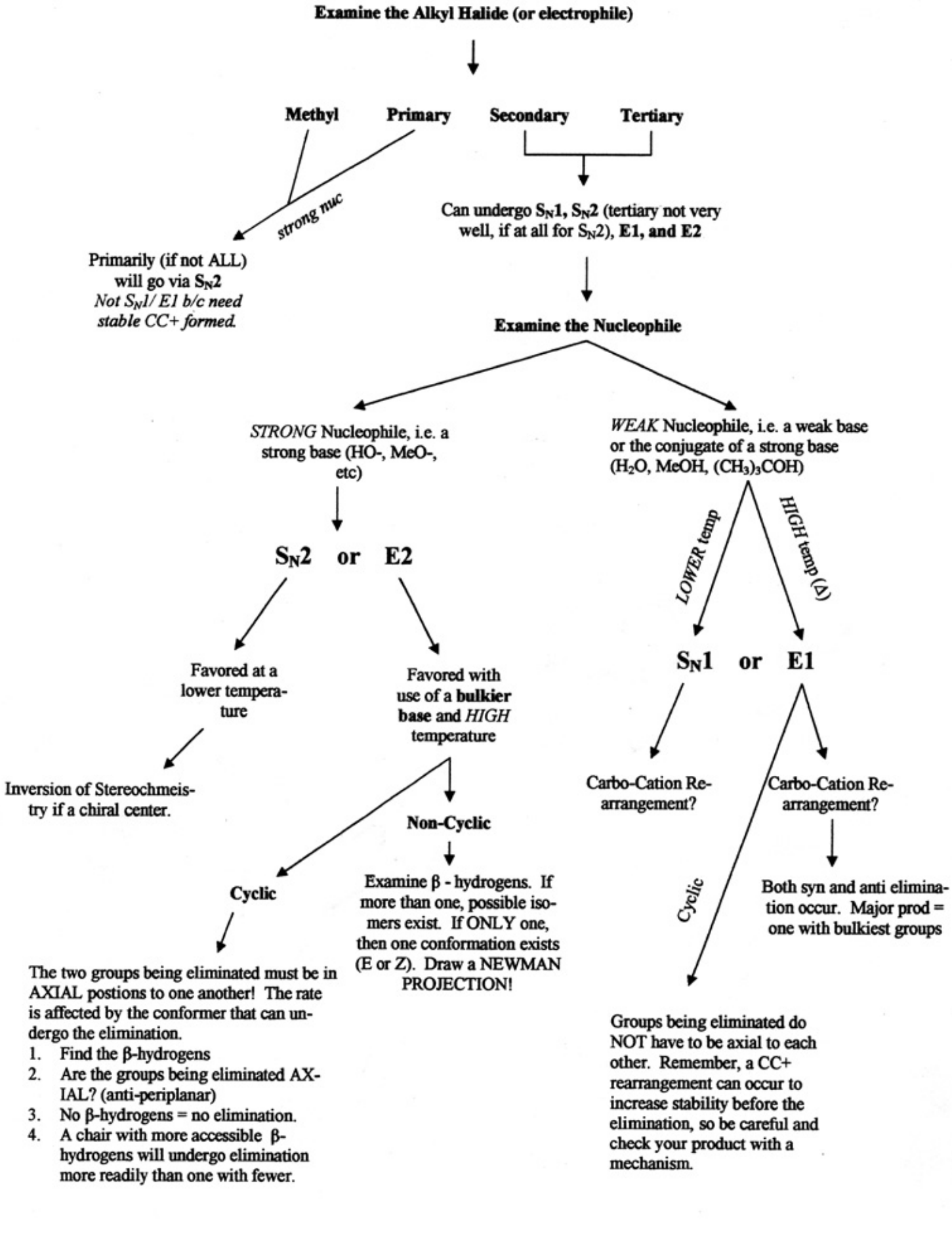
Examine the Alkyl Halide (or electrophile)
Methyl
Primary
Secondary
Tertiary
strong nuc
Primarily (if not ALL) will go via SN2
Not SN1/ E1 b/c need stable CC+ formed.
Can undergo SN1, SN2 (tertiary not very well, if at all for SN2), E1, and E2
Examine the Nucleophile
STRONG Nucleophile, i.e. a strong base (HO-, MeO-, etc)
WEAK Nucleophile, i.e. a weak base or the conjugate of a strong base (H2O, MeOH, (CH3)3COH)
SN2 or E2
LOWER temp
HIGH temp (Δ)
SN1 or E1
Favored at a lower temperature
Favored with use of a bulkier base and HIGH temperature
Inversion of Stereochmeistry if a chiral center.
Carbo-Cation Rearrangement?
Carbo-Cation Rearrangement?
Non-Cyclic
Cyclic
Cyclic
Examine β - hydrogens. If more than one, possible isomers exist. If ONLY one, then one conformation exists (E or Z). Draw a NEWMAN PROJECTION!
Both syn and anti elimination occur. Major prod = one with bulkiest groups
The two groups being eliminated must be in AXIAL postions to one another! The rate is affected by the conformer that can undergo the elimination.
1. Find the β-hydrogens
2. Are the groups being eliminated AXIAL? (anti-periplanar)
3. No β-hydrogens = no elimination.
4. A chair with more accessible β-hydrogens will undergo elimination more readily than one with fewer.
Groups being eliminated do NOT have to be axial to each other. Remember, a CC+ rearrangement can occur to increase stability before the elimination, so be careful and check your product with a mechanism.