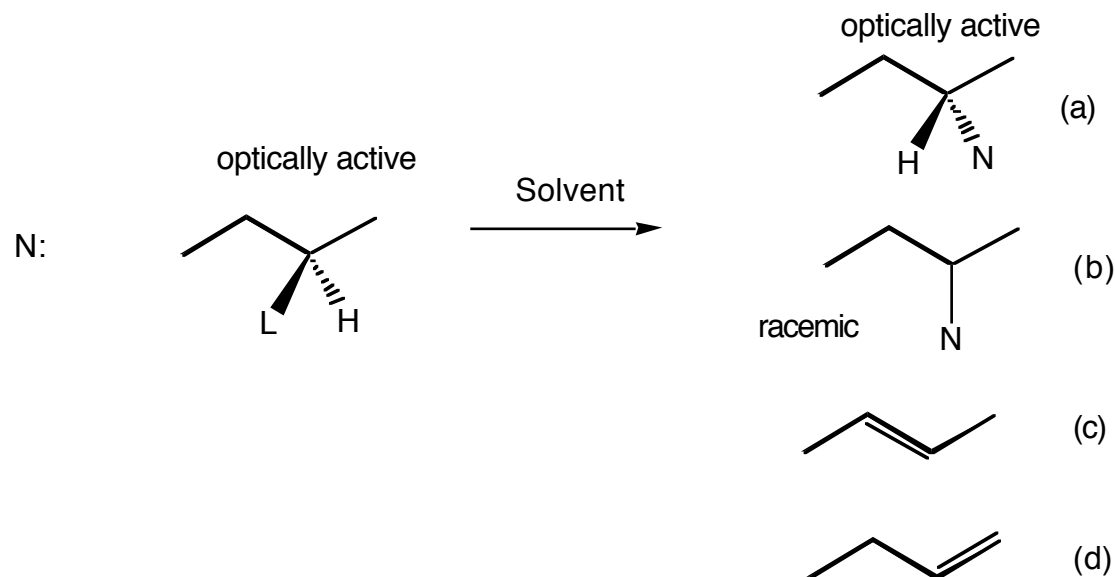


Problem 64, Chemistry 301X- 2006

Here is a general reaction that can give multiple products. In each case, pick from the appended lists one L, one N, and a Solvent that would maximize the desired product. Very briefly explain your strategy.

L= potential leaving groups	N = potential Nucleophiles	Potential Solvents
OTs	H:^-	H_2O
CH_3	HO^-	"polar"
F	$(\text{CH}_3)_3\text{CO}^-$	"nonpolar"
I	NH_3	hot
D	H_2O	green
	HS^-	



(e) Even though H:^- is a very poor choice for any of the reactions shown above, when $\text{L} = \text{OH}$, there is a rapid and irreversible reaction with hydride (H:^-). Explain.

(f) Here are two $\text{S}_{\text{N}}2$ reactions: How would a change to a more polar solvent change the rate of the reaction?

