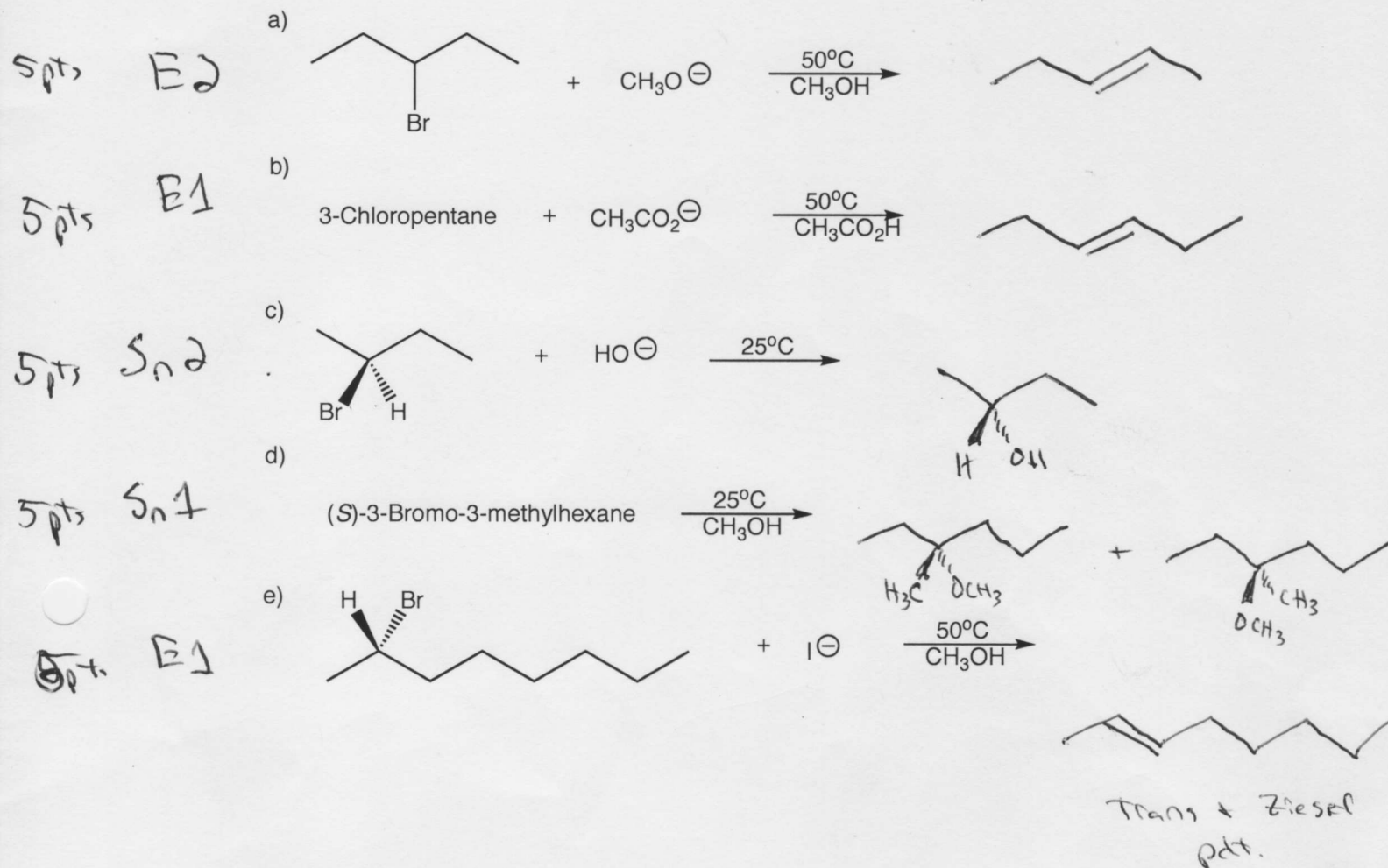


25 pts

1. Provide the major product (or products) for each of the following reactions. Be sure to indicate stereochemistry where appropriate. Also, indicate the mechanism type (S_N1 , S_N2 , E1, or E2) by which each product is formed. Finally, draw the curved-arrow mechanism for each reaction.



Each table 1 pt

correct mechanism name 1 pt

correct arrows

correct pdt

2 pts
1 pt

if they predict the wrong mechanism, base these 3 pts on the mechanism they predicted.

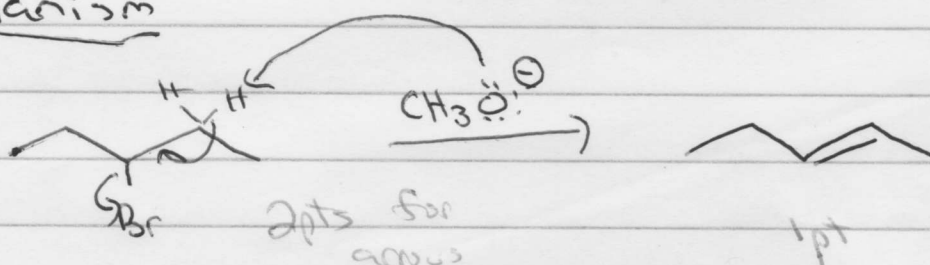
1a

Factor	S _N 1	S _N 2	E1	E2	Notes
Nu Strength		✓		✓	strong Nu strong B
Nu conc		✓		✓	
L	✓	✓	—	—	
Solvent	✓		✓		protic
Total	2	3	2	3	

2° substrate

heat - favors E2 1pt

Mechanism



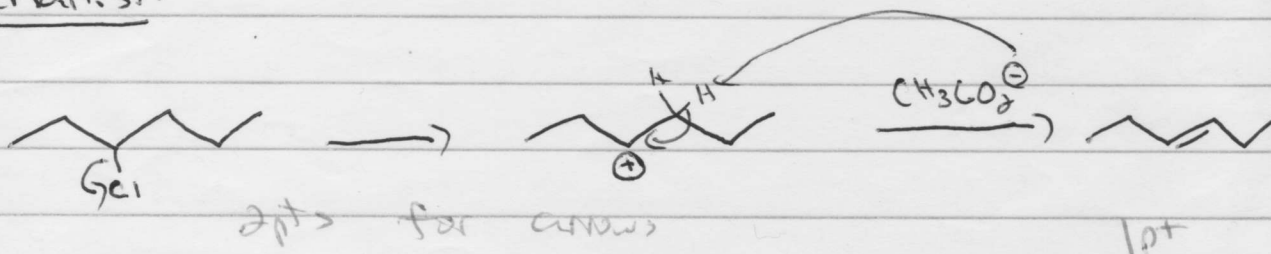
1b

Factor	S _N 1	S _N 2	E1	E2	Notes
Nu Strength		✓	✓		Strong Nu Weak B
Nu conc		✓		✓	
L	✓	✓	✓	✓	
Solvent	✓		✓		protic
Total	2	3	3	2	

2° substrate

heat - favors E1 1pt

Mechanism

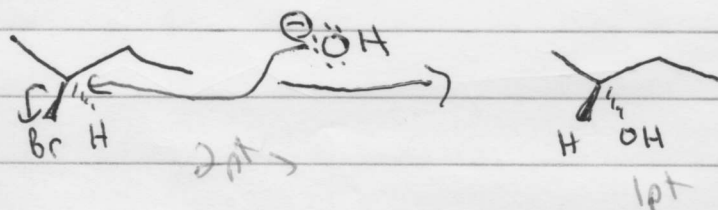


(1c)

Factor	S _N 1	S _N 2	E1	E2	Notes
Nu strength		✓		✓	Strong B Strong Nu
Nu conc		✓		✓	
L	✓	✓	—	—	
Solvent	✓		—		H ₂ O - protic
Total	2	3	2	3	

RT favors S_N2 1pt

Mechanism

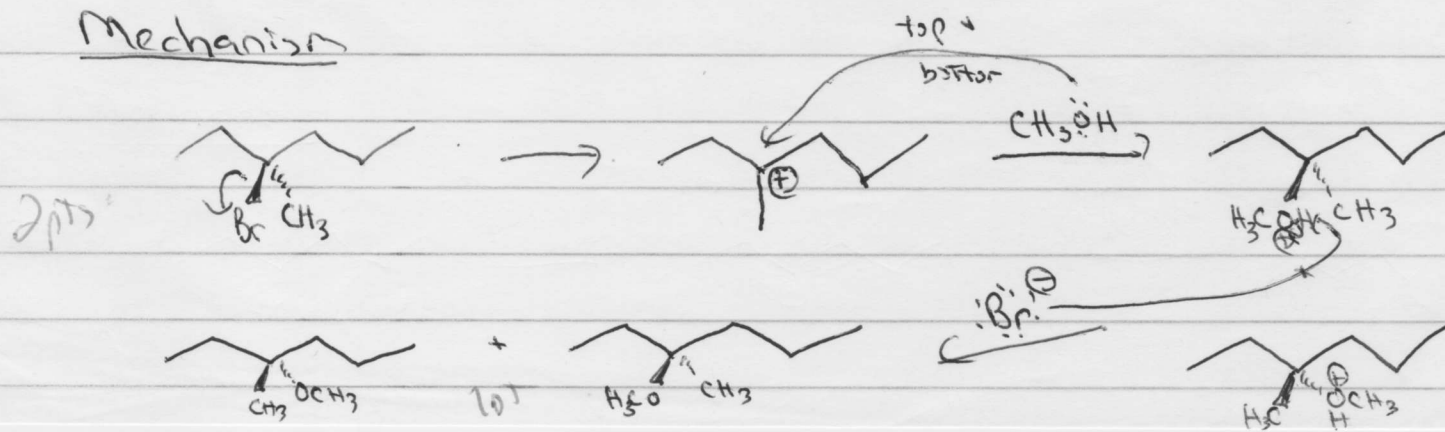


(1d)

Factor	S _N 1	S _N 2	E1	E2	Notes
Nu strength	✓		✓		Weak Nu Weak base
Nu conc				✓	
L	✓		—	—	
Solvent	✓		✓		protic
Total	3		3	2	

25°C favors S_N1 1pt

Mechanism



1 pt

Factor	S _N 1	S _N 2	E1	E2	Notes
Nu strength		✓	✓		strong Nu weak B
Nu conc		✓		-	
L	✓	✓	✓	-	
Solvent	✓		✓		protic
Total	2	3	3	1	

2° substrate

50°C favors E1 1 pt

Mechanism (2pts)

