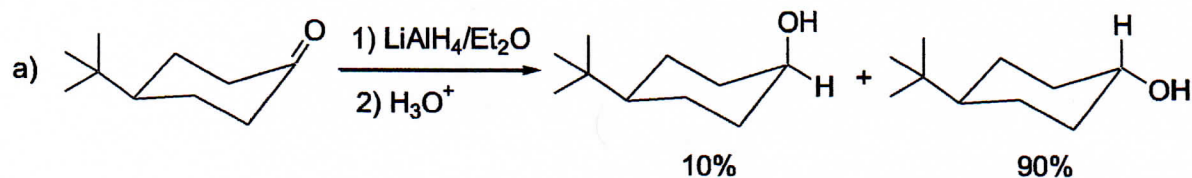
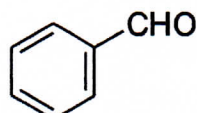
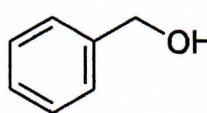
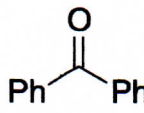
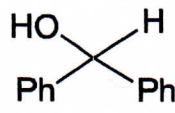
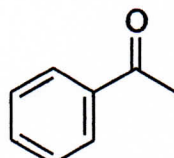
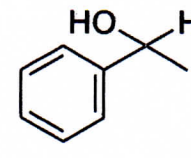




FUNDAMENTOS DE QUÍMICA ORGÂNICA  
1<sup>ª</sup> LISTA DE EXERCÍCIOS

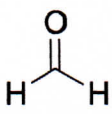
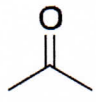
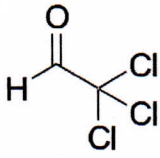
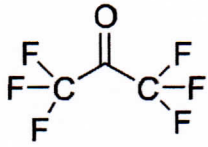
1. Explique os seguintes fatos experimentais:



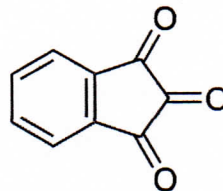
b) Reduções com NaBH<sub>4</sub> em isopropanol a 0°C:

REAGENTE	PRODUTO	$k \times 10^4 (M^{-1}.s^{-1})$	k = constante de velocidade
		12.400	Ph = fenila
		1.9	
		2.0	
		15.1	

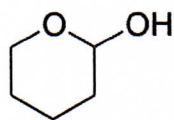
c) Adição de água a compostos carbonílicos:

COMPOSTO	$K_{eq}$	$K_{eq}$ = constante de equilíbrio
	2.280	
	0.001	
	2.000	
	1.200.000	

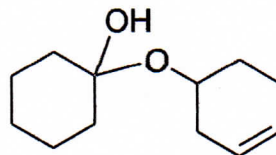
2. A tri-cetona abaixo é chamada de “ninidrina” e é usada para detecção de aminoácidos. Ela existe, em solução aquosa, na forma de mono-hidrato. Qual dos três grupos carbonila deve ter sido hidratado, formando um diol geminal? Explique porque.



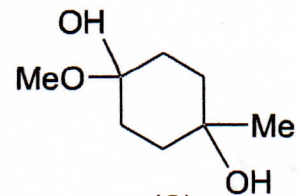
3. Cada um dos compostos abaixo é um hemiacetal e, portanto, formado a partir de um composto carbonílico e de um álcool. Para cada caso, sugira a estrutura dos compostos que foram utilizados para formar tais hemiacetais.



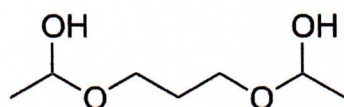
(A)



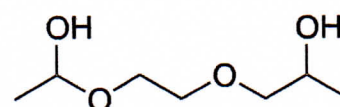
(B)



(C)

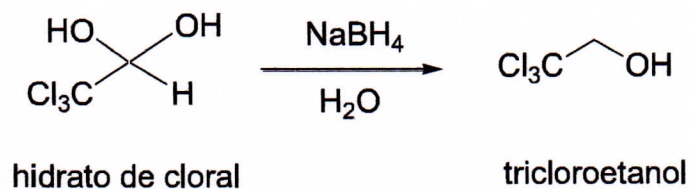


(D)

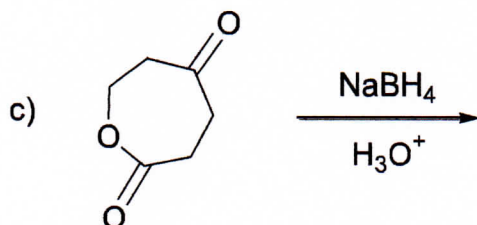
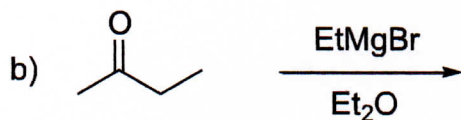
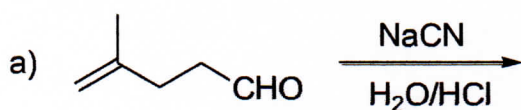


(E)

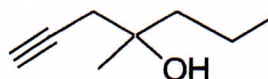
4. O tricloroetanol pode ser preparado pela redução direta do hidrato do cloral com boroidreto de sódio. Sugira um mecanismo para esta reação.



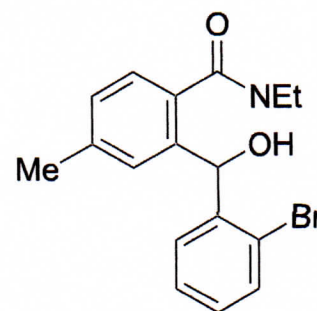
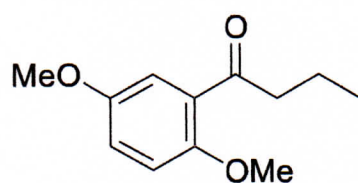
5. Mostre o produto das seguintes reações e proponha um mecanismo para cada uma delas:



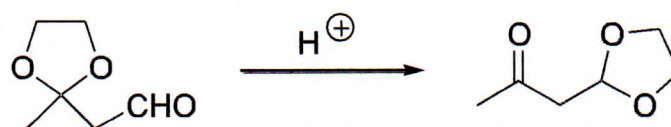
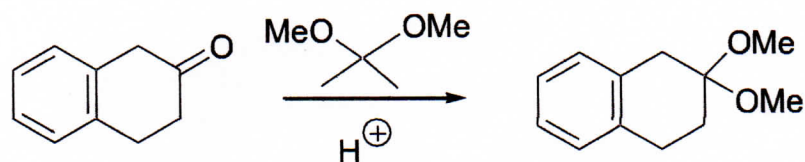
6. Proponha três diferentes maneiras de sintetizar o álcool abaixo, utilizando compostos carbonílicos e organometálicos. Mostre o mecanismo em cada caso.



7. Como seria possível preparar os seguintes compostos, fazendo uso da reação de orto-litiação?



8. As reações abaixo representadas conduziram a acetais, embora não tenham sido usados álcoois. Proponha um mecanismo para cada uma delas.



9. Explique porque os dois métodos abaixo não são adequados para a síntese do 1,4-pentanodiol.

