

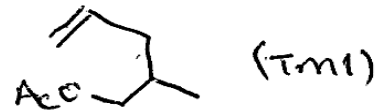
BÖLÜM 5 : GENEL PROBLEMLER

(GENERAL REVIEW PROBLEMS)

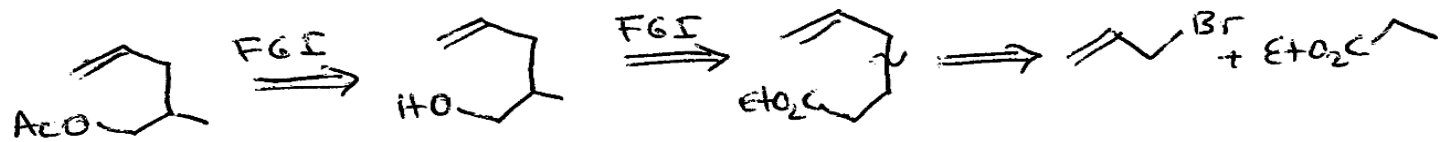
Şimdiye kadar, bir-grup ve iki-grup parçalanmaları ile ilgili ikinci sistematik bölümü inceledik.

Bu bölümde, zorluk derecesi gittikçe artan problemler ve çözümleri ele alınacaktır.

Problem 1: (Tm1) Bileşimin sentez tasarımı yapınız.

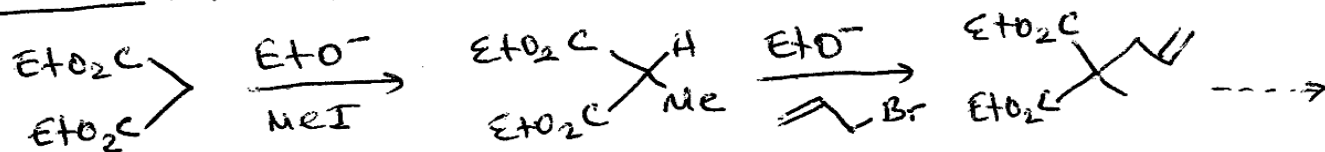


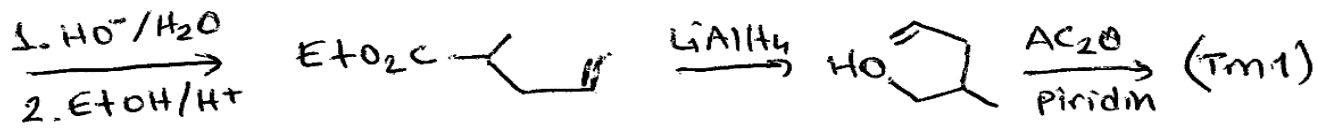
Analiz: Ester grubunun FGI yapılabileceği aşiktir.



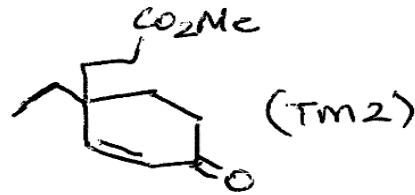
Burada, yapıda çift bağ olması birze bir alil grubunun ilave edileceğini gösterir.

Sentezi: Aktifleştirici grup gerekir.

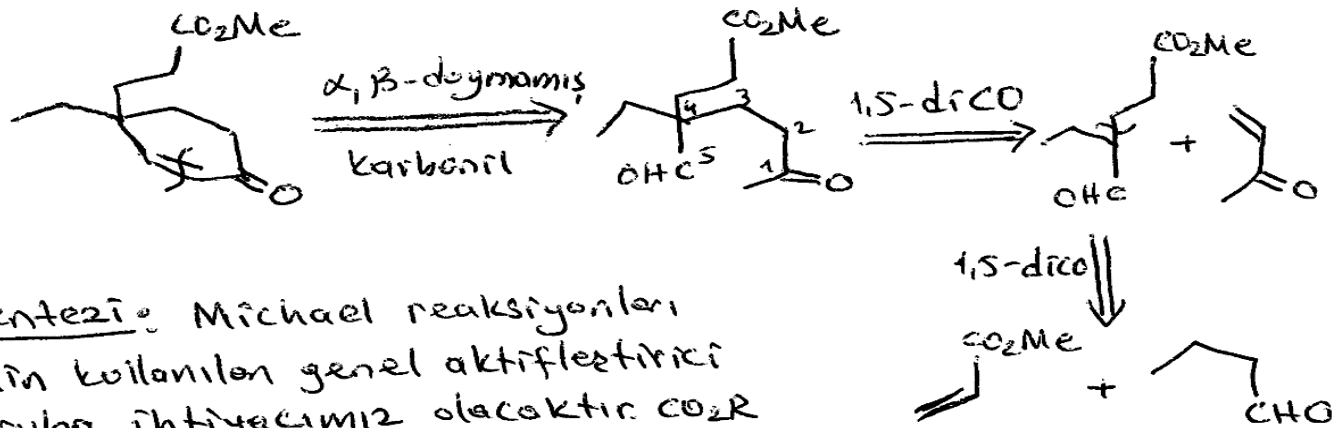




Problem 2: Kompleks bir alkaloid olan Stork tarafından sentezlenen aspidospermin adlı bileşiğin sentezinde bir ara ürün olan (Tm2) bileşiği tüm bir sentez yöntemi öneriniz.

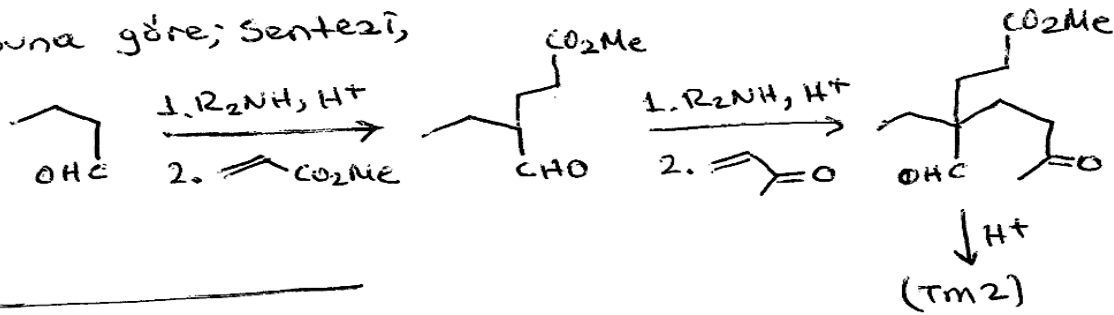


Analizi: Burada, bileşik doymamış bir keton olduğundan, α, β -doymamış keton ilgisini düşünebiliriz.

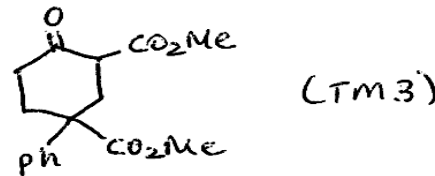


Sentezi: Michael reaksiyonları için kullanılan genel aktifleştirici gruba ihtiyacımız olacaktır. CO_2R grubu (oda sıcaklığında ClO_2) yerine enamin kullanacağız.

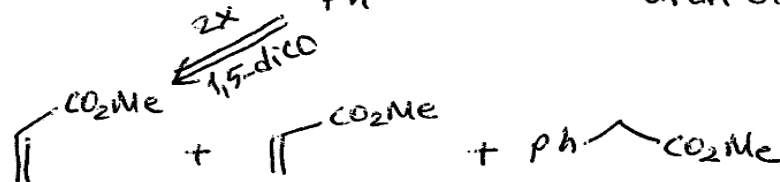
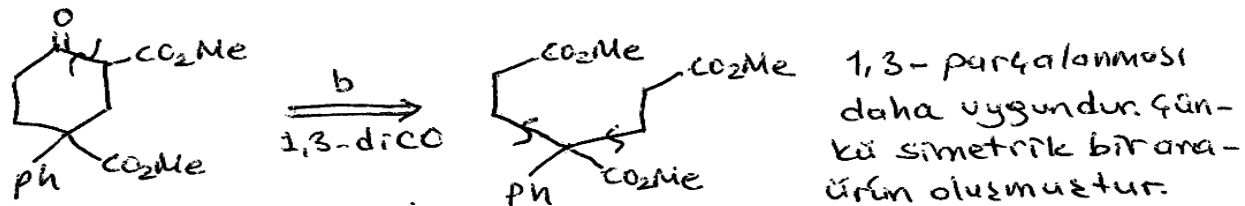
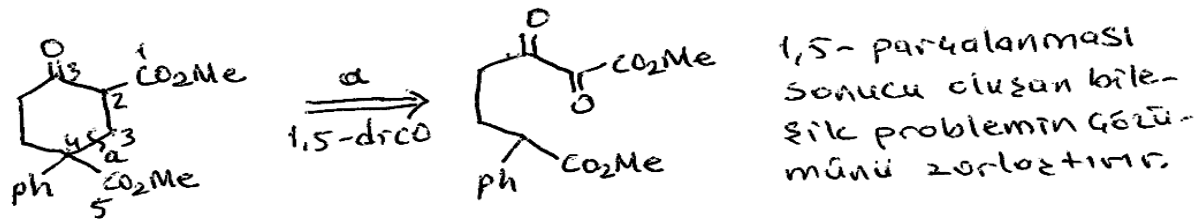
Buna göre; Sentezi,



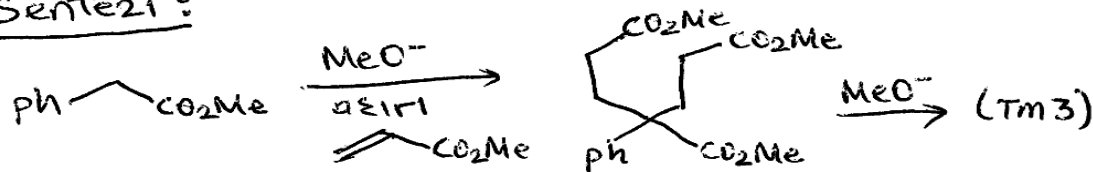
Problem 3: Aşağıdaki bileşik için bir sentez tasarımı yapınız.



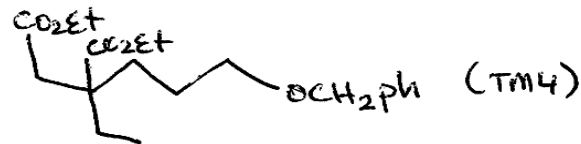
Analizi: Burada, 1,5- ve bir 1,3-dikarbonil bağlanmalarını düşünmelisiniz.



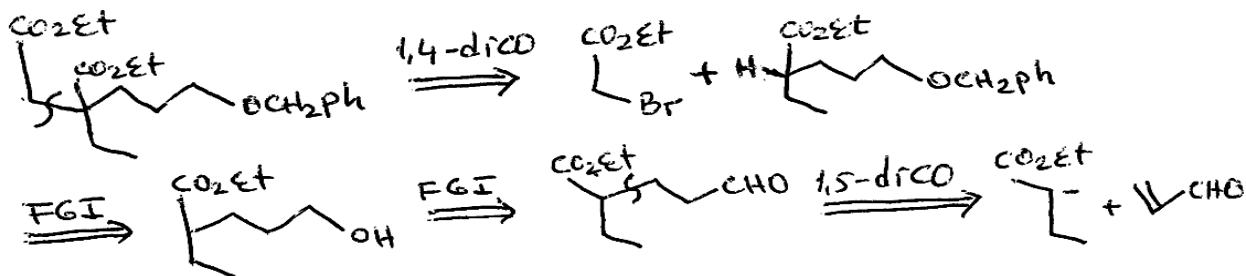
Sentezi:



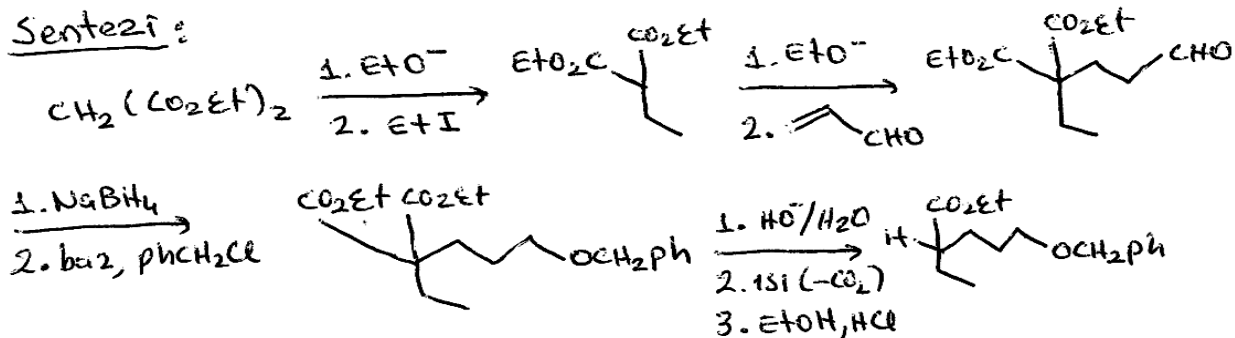
Problem 4: (TM4) bileşiminin sentez tasarımı yapınız.

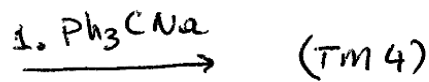


Analizi: Kutney alkoloid sentezinin bir kısmıdır (J. Amer. Chem. Soc., 1966, 88, 3667). Burada, 1,4- ve 1,5-dikoksifenlenmiş bağlantı vardır: 1,4- öncelikle seçilir, doğru yükseltgenme basamağından dolayı.

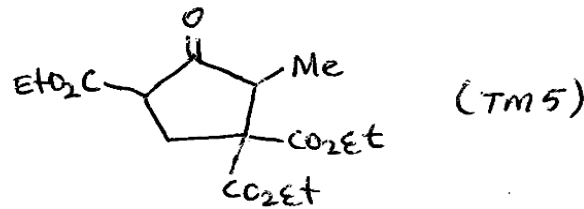


Sentezi:

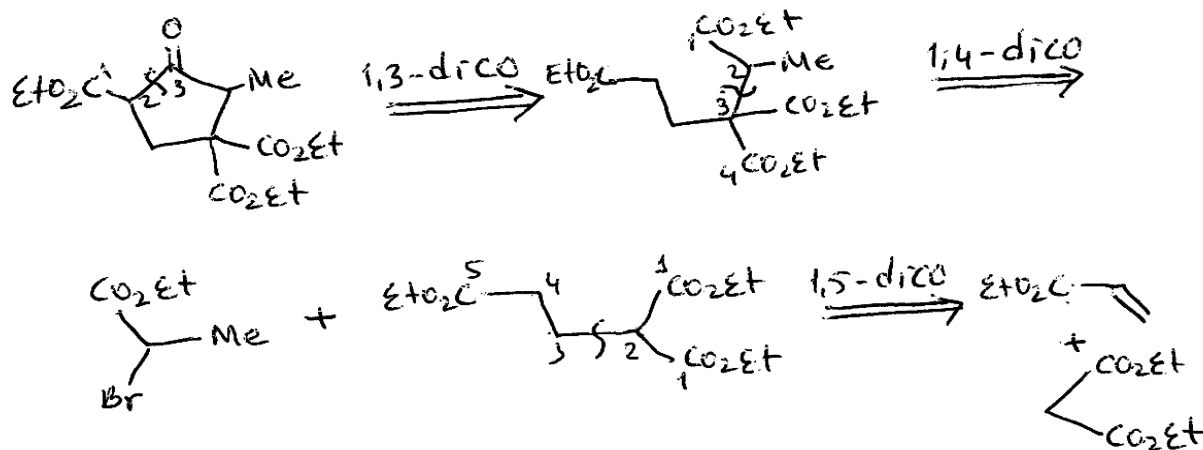




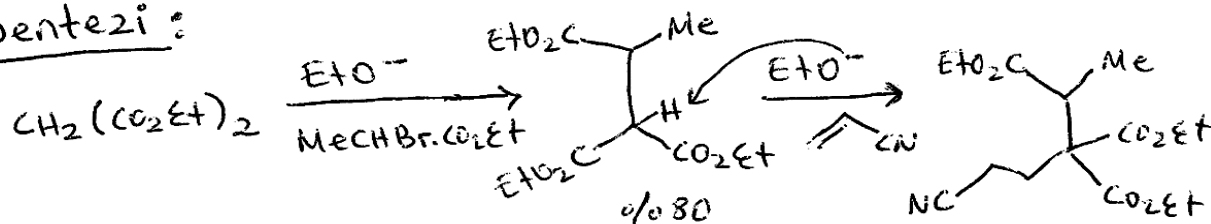
Problem 5: (TM5) için bir sentez tasarımı yapınız.

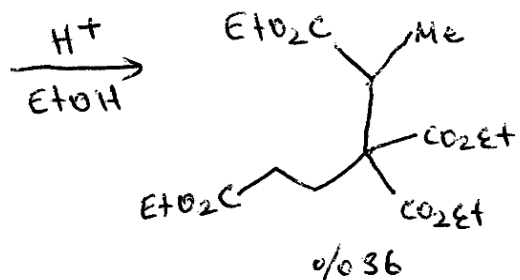


Analiz: Bu molekül için kesin bir parçalanma bağlantısı söylemek zordur. Ancak, 1,3- ile başlayarak daha sonra 1,4- ve 1,5- diCO bağlantıları düşünülebilir:

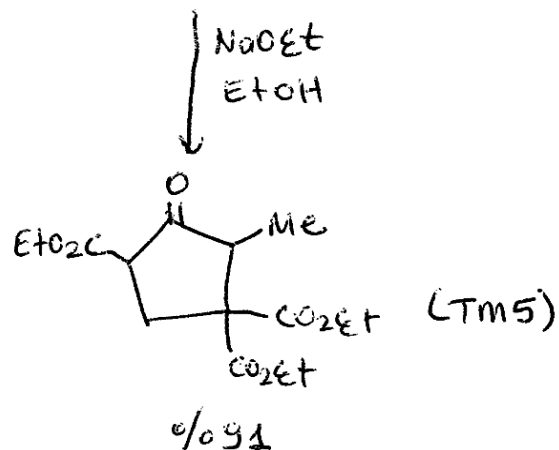


Sentezi:

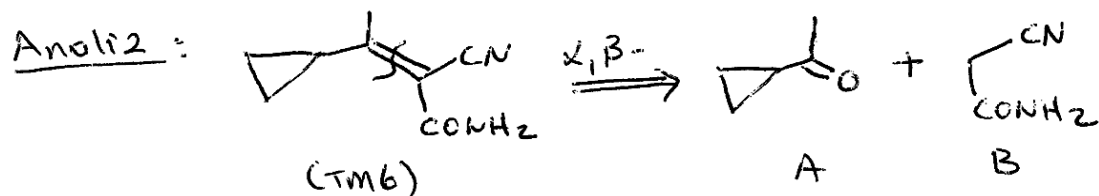




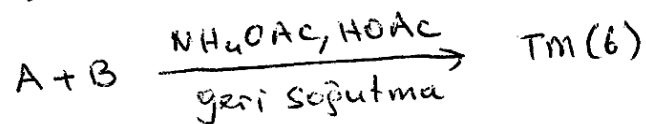
(Zhur. obshchei. Khim, 1957, 27, 742; Chem. Abs. 1957, 51, 16313).



Problem 6: (TM6) bileşirğini sentezleyiniz.

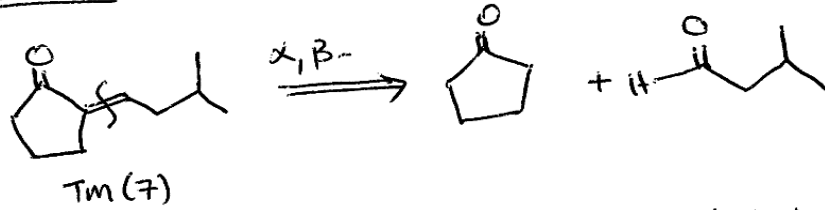


Sentez:



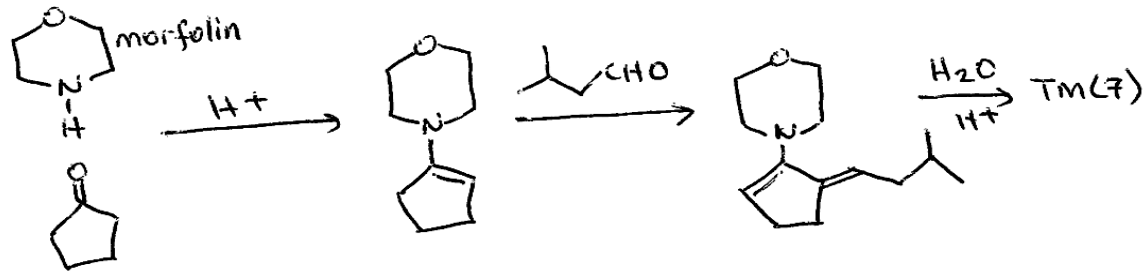
Problem 7: Tm(7) bileşimini sentezleyiniz.

Analiz:

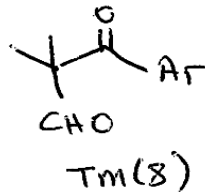


Analizi yapılan enon Tm(7), bir aldehit ve daha az reaktif olan ketonun enolü arasındaki kondenzasyon reaksiyonu ile kolayca elde edilebilir. Önce, ketonun enamini hazırlamak gerekir. Bunun için, genellikle sıklıkla bir sekonder amin olan morfolin kullanılır.

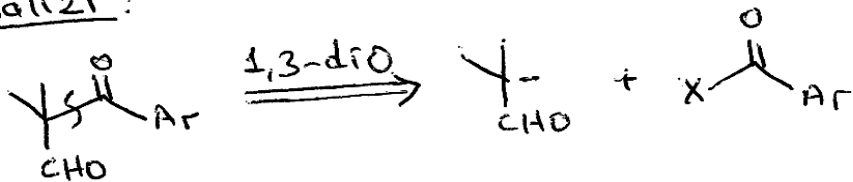
Sentezi:



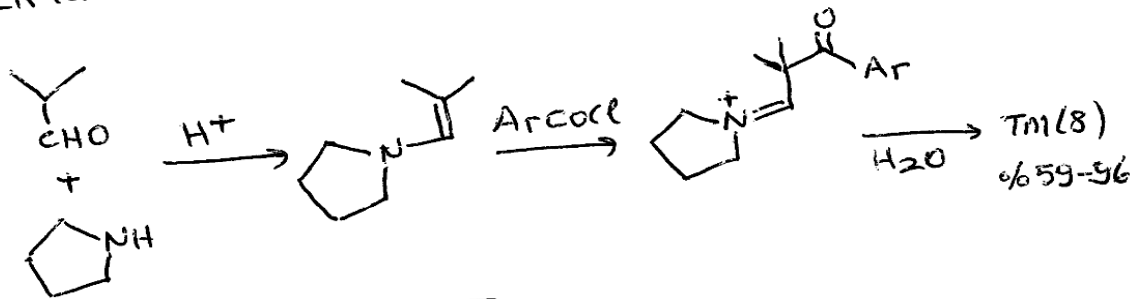
Problem 8: Tm(8) bileşimini sentezleyiniz.



Analizi:

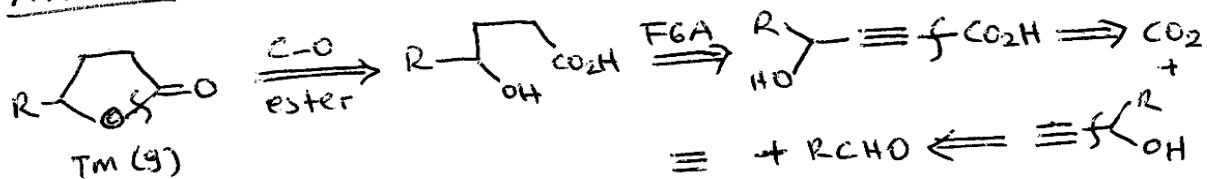


Sentezi: Enaminler, acillenebilir böylece 1,3-dikarbonyl bileşiklerinin sentezinde kullanılır. önce, uygun bir aldehit sekonder siklik aminle etkileştirilerek enamin hazırlanır. sonra, acil klorür ile reaksiyona sokulur.

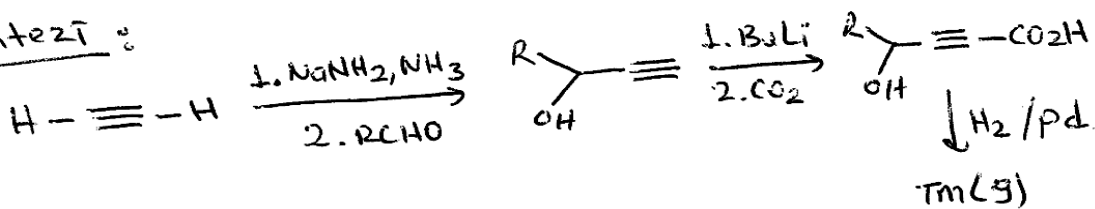


problem 9: Aşağıdaki γ -laktonu TM(9) nasıl yaparsınız?

Analizi:

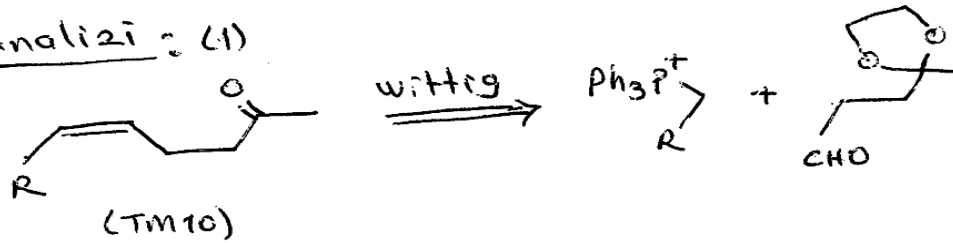


Sentezi:

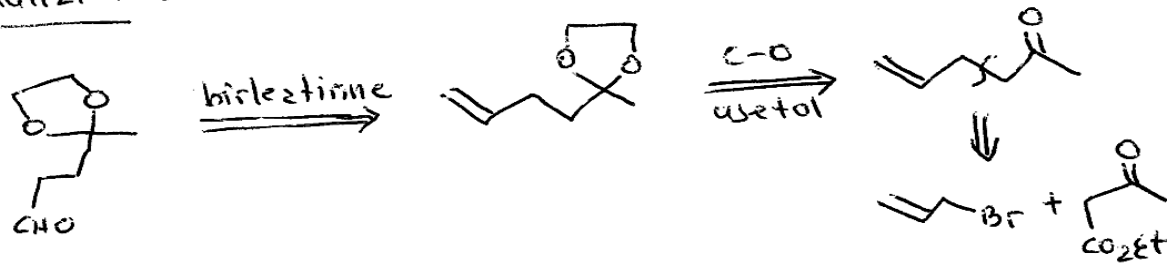


Problem 10: Aşağıdaki cis-enonun (TM10) analizini ve sentezini tasarlayınız.

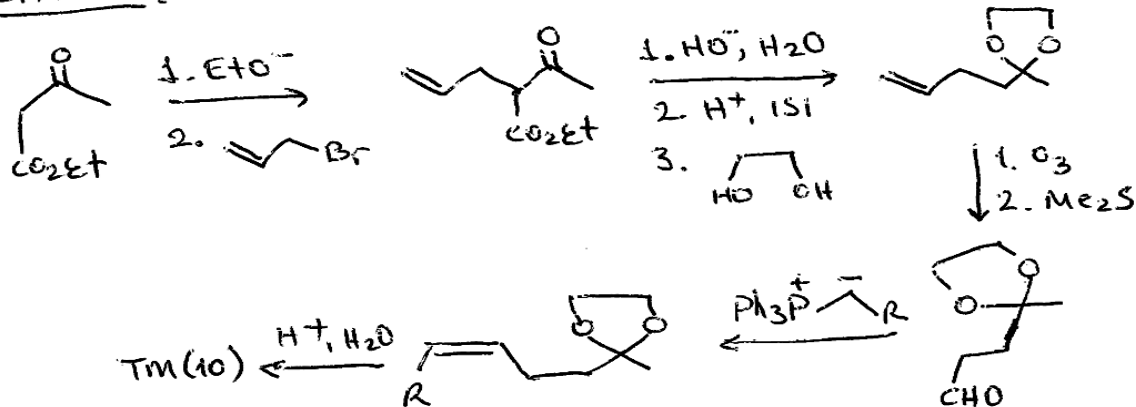
Analizi : (1)



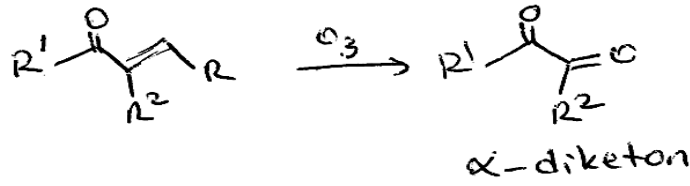
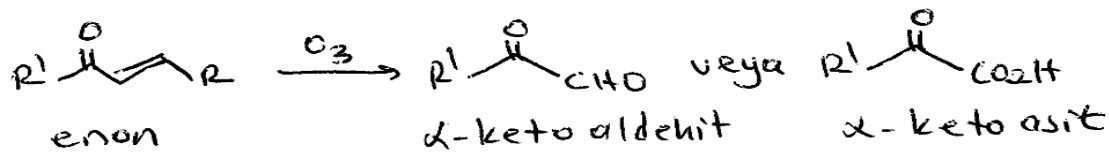
Analizi : (2)



Sentezi :

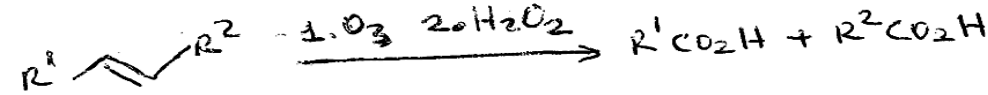
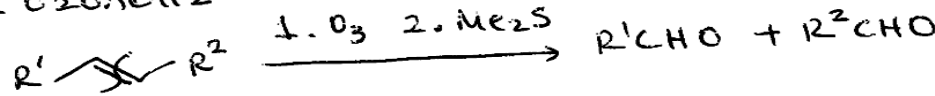


Yeniden birleştirme (Reconnection), enonların ozonolizi ile α -keto alditler veya asitler olduğundan, 1,2-dikarbonil bileşiklerin sentezinde de kullanılmaktadır.

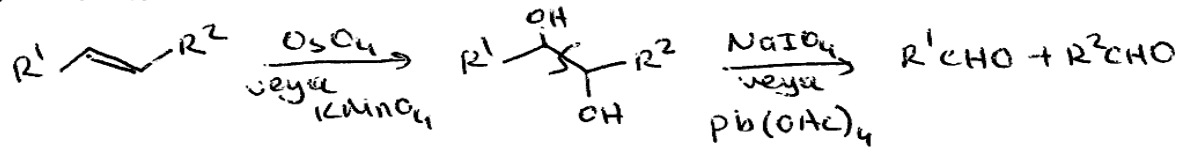


Gift bağ kırılma yöntemleri

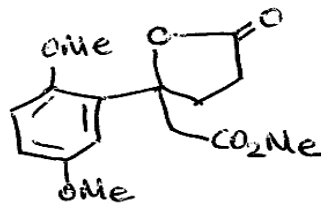
1. Ozonoliz



2. Diollerin hidroksillenmesi ve bağ kırılması

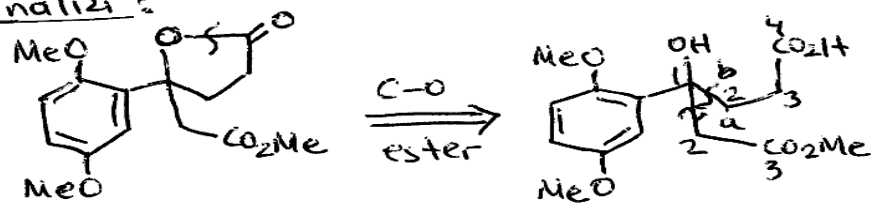


Problem 11: Tm(11) molekülü için uygun bir sentez tasarımı yapınız.



Tm(11)

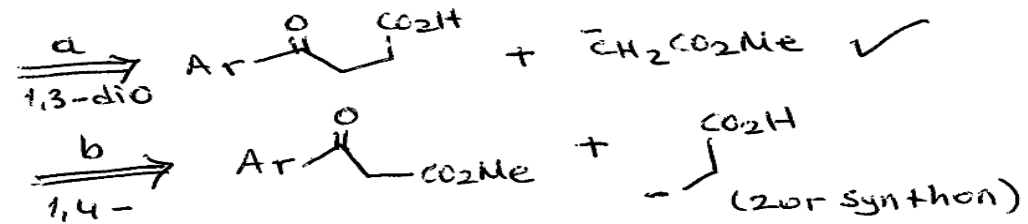
Analizi :



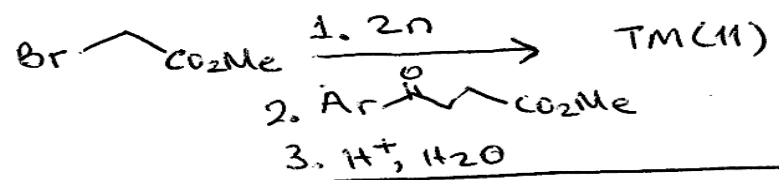
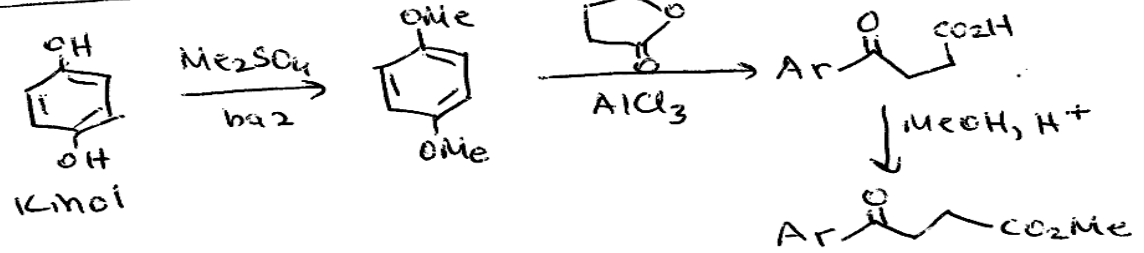
burada 1,3- ve 1,4- bağlantıları vardır.

(TM 11)

C1 atomundaki dallanmadan parçalamak stratejik olarak daha iyidir. Üstelik, 1,4-parçalanmasıyla oluşacak synthon daha zor bir synthondur.

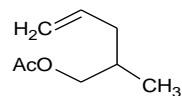


Sentezi :

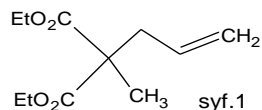


BÖLÜM 5 : Bileşiklerin adlandırılması

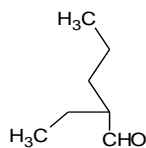
TM1



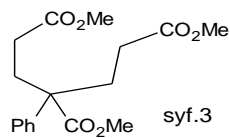
2-methylpent-4-en-1-yl acetate



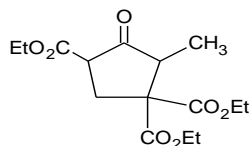
diethyl allyl(methyl)malonate



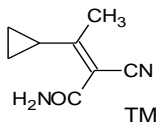
2-ethylpentanal



trimethyl 3-phenylpentane-1,3,5-tricarboxylate

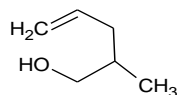


triethyl 5-methyl-4-oxocyclopentane-1,1,3-tricarboxylate

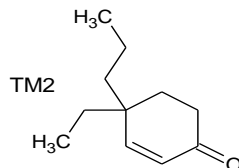


(2Z)-2-cyano-3-cyclopropylbut-2-enamide

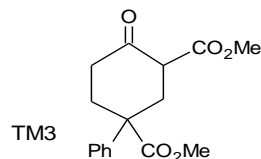
syf.1



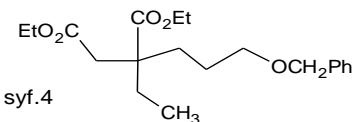
2-methylpent-4-en-1-ol



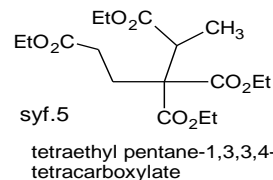
4-ethyl-4-propylcyclohex-2-en-1-one



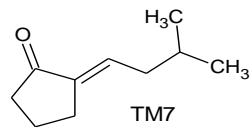
dimethyl 4-oxo-1-phenylcyclohexane-1,3-dicarboxylate



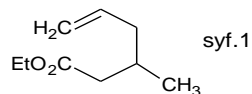
diethyl 2-[3-(benzyloxy)propyl]-2-ethylsuccinate



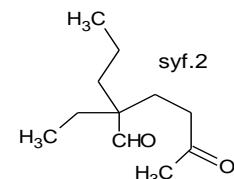
tetraethyl pentane-1,3,3,4-tetracarboxylate



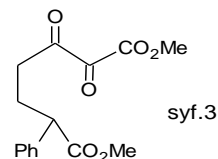
(2E)-2-(3-methylbutylidene)cyclopentanone



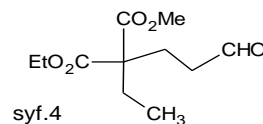
ethyl 3-methylhex-5-enoate



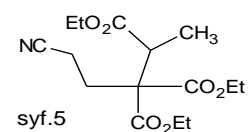
2-ethyl-5-oxo-2-propylhexanal



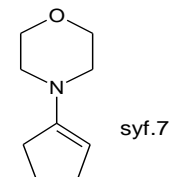
dimethyl 2,3-dioxo-6-phenylheptanedioate



ethyl methyl ethyl(3-oxopropyl)malonate



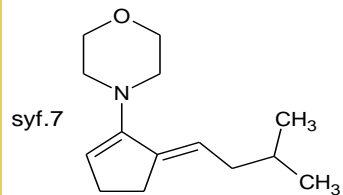
triethyl 5-cyanopentane-2,3,3-tricarboxylate



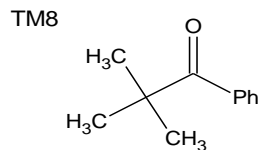
4-cyclopent-1-en-1-ylmorpholine

1.6.2017

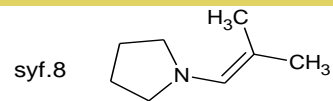
Organik Sentez Tasarımı / Doç. Dr. Kamran POLAT



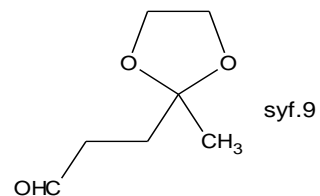
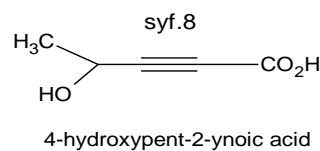
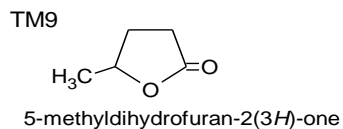
4-[(5*E*)-5-(3-methylbutylidene)cyclopent-1-en-1-yl]morpholine



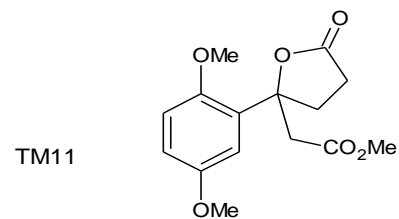
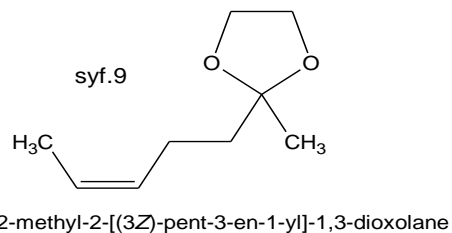
2,2-dimethyl-1-phenylpropan-1-one



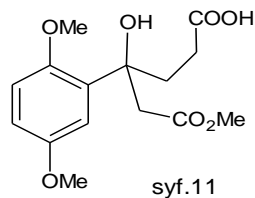
1-(2-methylprop-1-en-1-yl)pyrrolidine



3-(2-methyl-1,3-dioxolan-2-yl)propanal



methyl [2-(2,5-dimethoxyphenyl)-5-oxotetrahydrofuran-2-yl]acetate



4-(2,5-dimethoxyphenyl)-4-hydroxy-6-methoxy-6-oxohexanoic acid