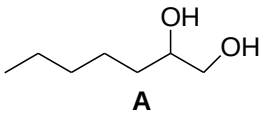
Solutions

Lecture 1

1. 

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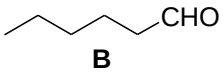
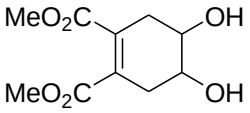
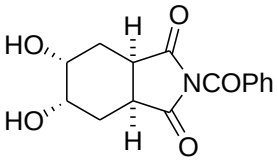


B

HCHO
C

2. 

3. 

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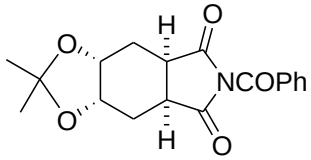

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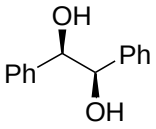
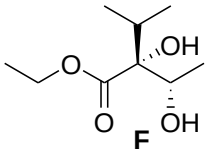
4. 

5. 

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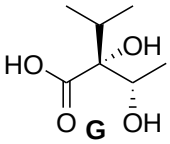
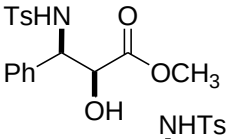
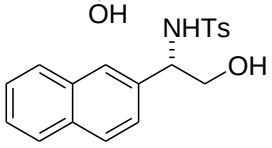
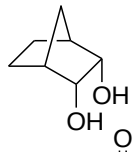


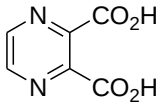
G

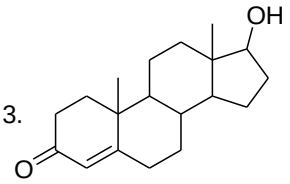
6. 

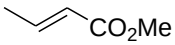
7. 

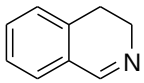
Lecture 2

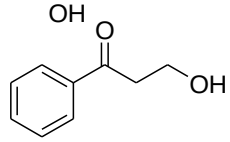
1. 1. 

2. 

3. 

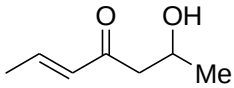
4. 

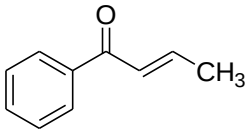
5. 

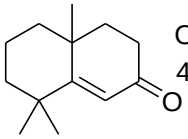
6. 

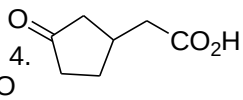
2. 1. MnO_2, solvent free, RT 2. Mn(III)salen, NaOCl 3. **A**. $KMnO_4$/aq. NaOH. **B**. MnO_2/CH_2Cl_2, RT
4. MnO_2, benzene/reflux

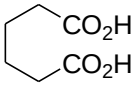
Lecture 3

1. 1. 

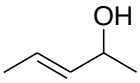
2. 

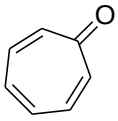
3. 

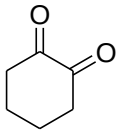
4. 

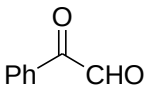
5. 

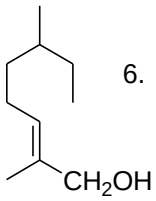
Lecture 4

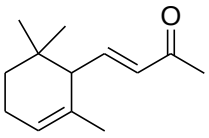
1. 

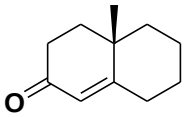
2. 

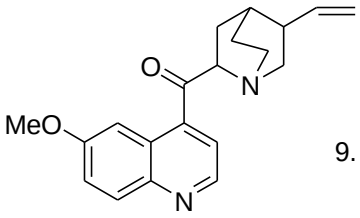
3. 

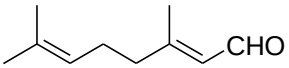
4. 

5. 

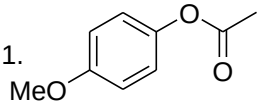
6. 

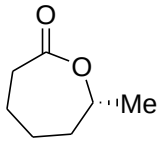
7. 

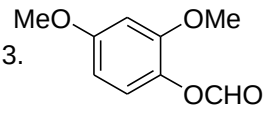
8. 

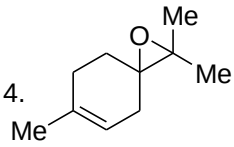
9. 

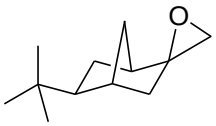
Lecture 5

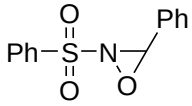
1. 

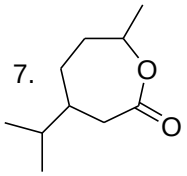
2. 

3. 

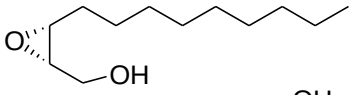
4. 

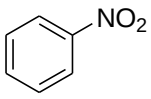
5. 

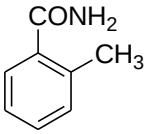
6. 

7. 

Lecture 6

1. 

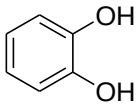
2. 

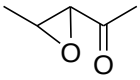
3. 

4. $B(OR)_3$

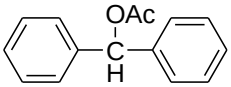
5. EtNHOH

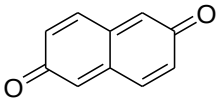
6. RSO_3H

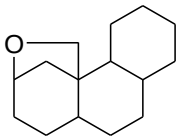
7. 

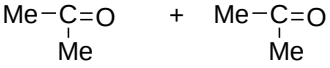
8. 

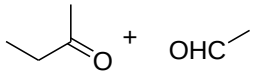
Lecture 7

1. 

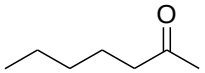
2. 

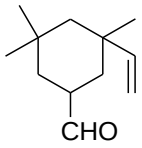
3. 

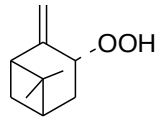
4. 

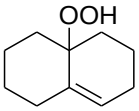
5. 

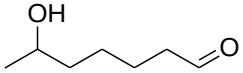
Lecture 8

A. 1. 

2. 

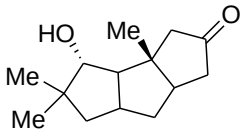
3. 

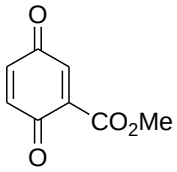
4. 

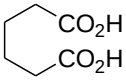
5. 

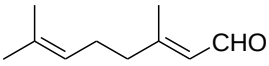
Lecture 9

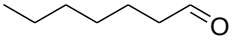
1. CH_3CHO

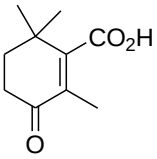
2. 

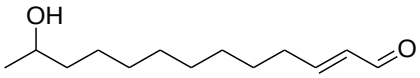
3. 

4. 

5. 

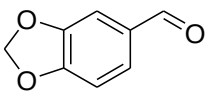
6. 

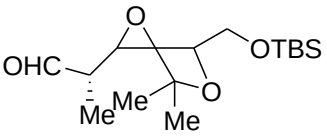
7. 

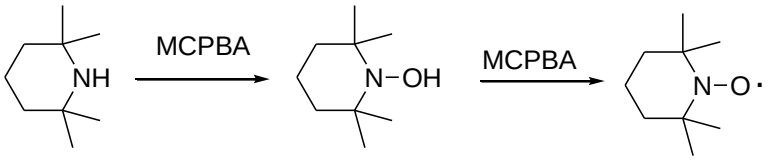
8. 

9. 

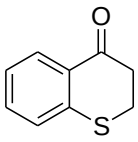
Lecture 10

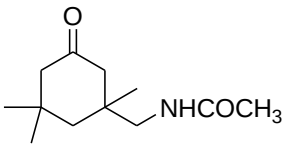
A. 1. 

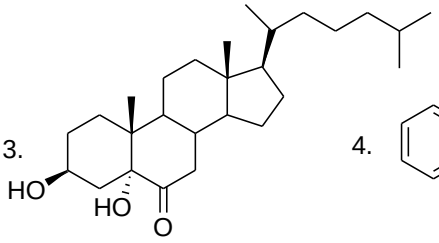
2. 

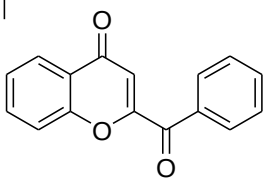
B. 

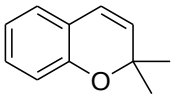
Lecture 11

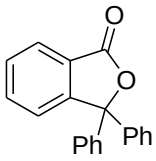
1. 

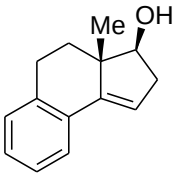
2. 

3. 

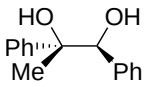
4. 

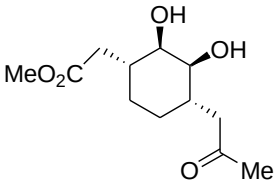
5. 

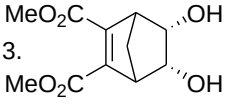
6. 

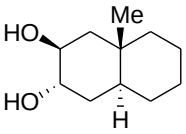
7. 

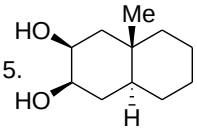
Lecture 12

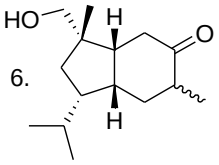
1. 

2 

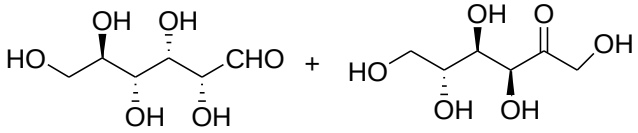
3. 

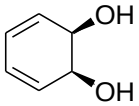
4. 

5. 

6. 

Lecture 13

1. 

2. 

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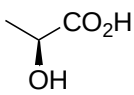
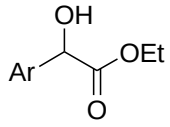
4. 

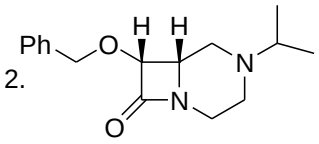
Lecture 14

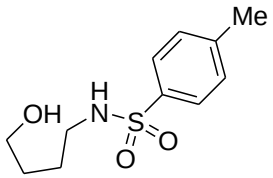
1. LAH (inverse addition) 2. LAH 3. $LiAlH(OEt)_3$ 4. $LiAlH(OEt)_3$ 5. DIBAL, Toluene, -78 ^oC

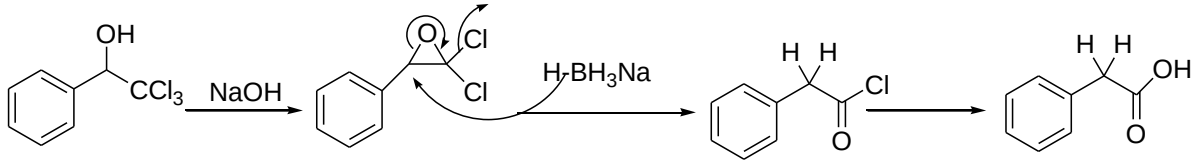
Lecture 15

A. 1. $NaCNBH_3$ 2. $NaCNBH_3$

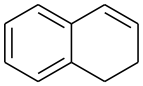
B. 1. 

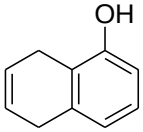
2. 

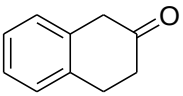
3. 

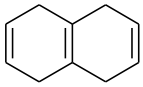
C. 

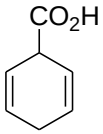
Lecture 16

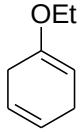
1. 

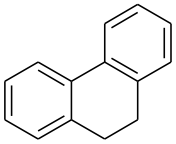
2. 

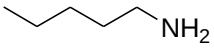
3. 

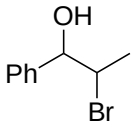
4. 

5. 

6. 

7. 

8. 

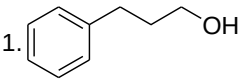
9. 

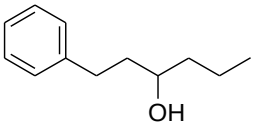
Lecture 17

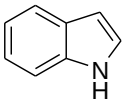
1. PtO_2/ H_2 2. Pd/H_2 3. PtO_2/H_2/AcOH, 4. Raney Ni/H_2, 5. $Pd/C/H_2$

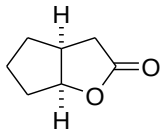
6. H_2, Wilkinson Catalyst, C_6H_6 7. $Pd/CaCO_3/H_2$

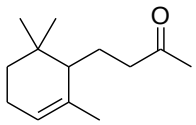
Lecture 18

A. 1. 

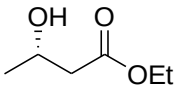
2. 

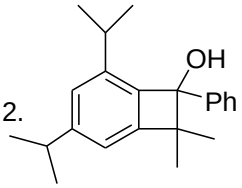
3. 

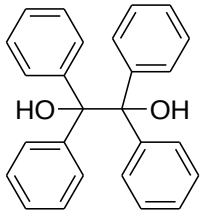
4. 

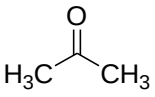
5. 

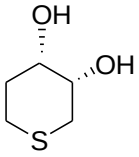
Lecture 19

1. 

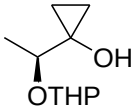
2. 

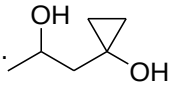
3. 

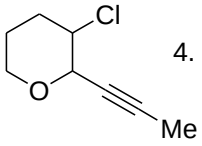
+ 

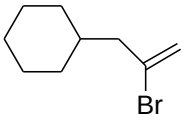
4. 

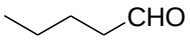
Lecture 20

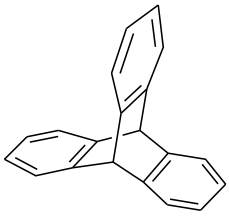
1. 

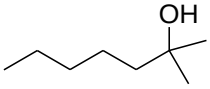
2. 

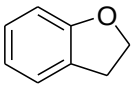
3. 

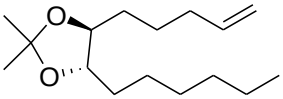
4. 

5. 

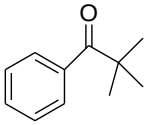
6. 

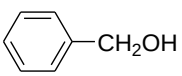
7. 

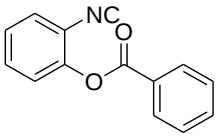
8. 

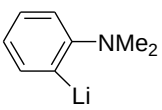
9. 

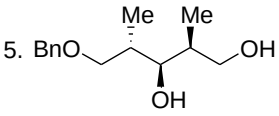
Lecture 21

1. 

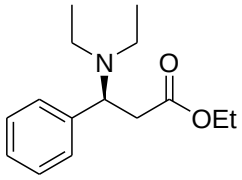
2. 

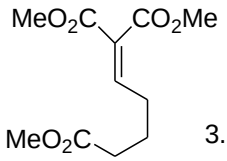
3. 

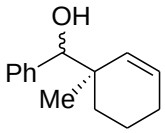
4. 

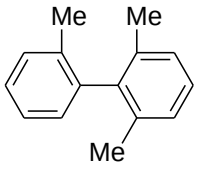
5. 

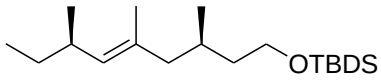
Lecture 22

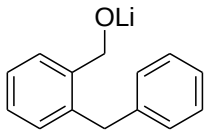
1. 

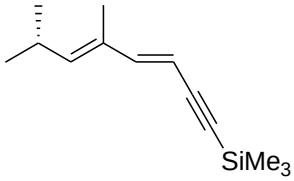
2. 

3. 

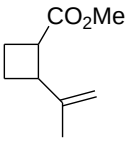
4. 

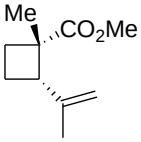
5. 

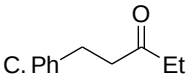
6. 

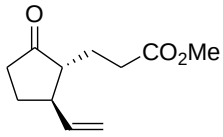
7. 

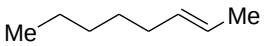
Lecture 23

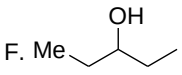
A. 

B. 

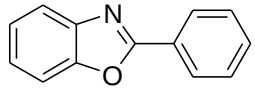
C. 

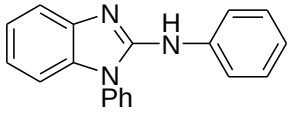
D. 

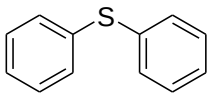
E. 

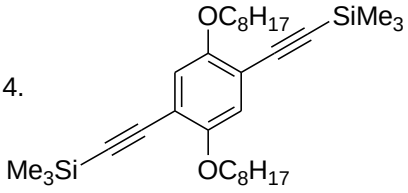
F. 

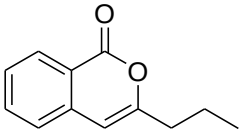
Lecture 24

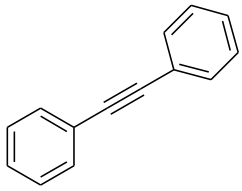
1. 

2. 

3. 

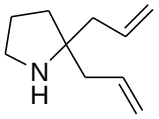
4. 

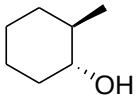
5. 

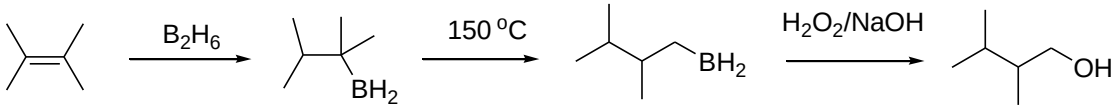
6. 

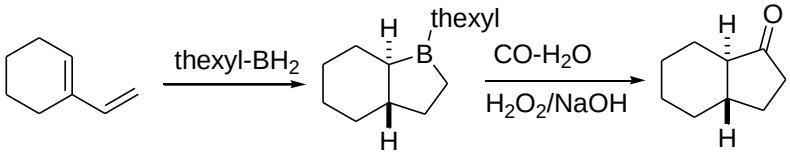
Lecture 25

A. 1. BH_3, $H_2O_2/OH^{\ominus}$ 2. BH_3, $H_2O_2/OH^{\ominus}$

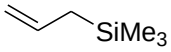
C. 1. 

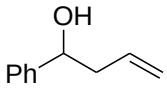
2. 

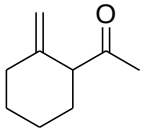
E. 1. 

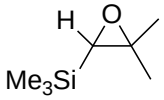
2. 

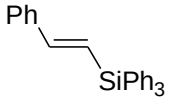
Lecture 26

1. (a) A Li/Me_3SiCl B. $MeCOCl/AlCl_3$ (b) C. 

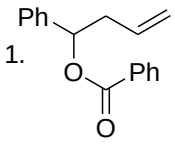
D. 

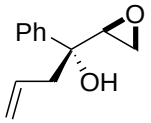
2. (a) 

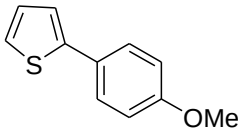
(b) 

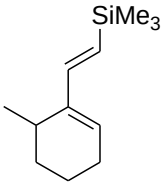
(c) 

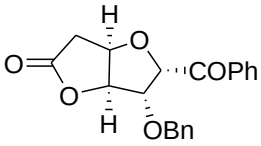
Lecture 27

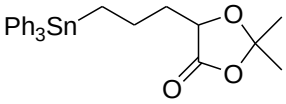
1. 

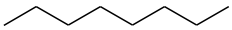
2. 

3. 

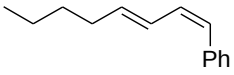
4. 

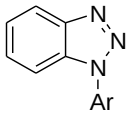
5. 

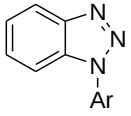
6. 

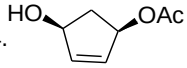
7. 

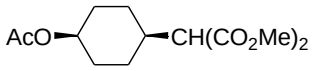
Lecture 28

B. 1. 

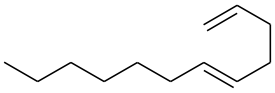
2. 

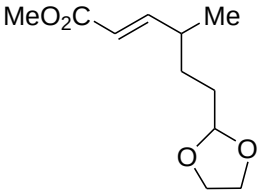
3. 

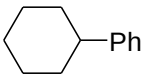
4. 

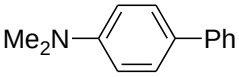
5. 

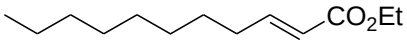
Lecture 29

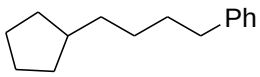


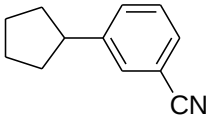
2. 

3. 

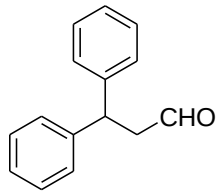
4. 

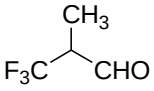
5. 

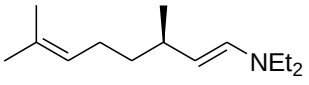
6. 

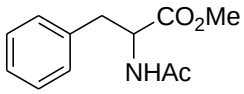
7. 

Lecture 30

1. 

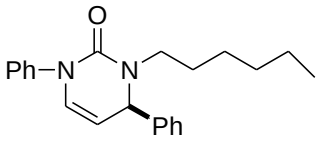
2. 

3. 

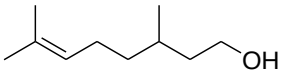
4. 

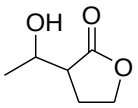
5. 

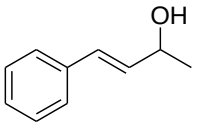
6. 

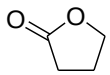
7. 

Lecture 31

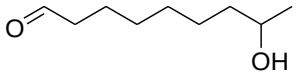
1. 

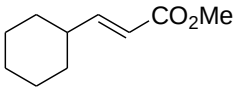
2. 

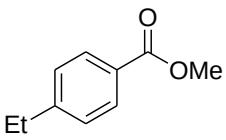
3. 

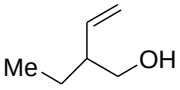
4. 

5. $HCONMe_2$

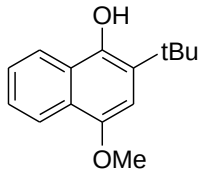
6. 

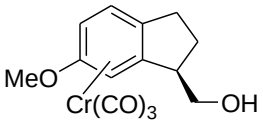
7. 

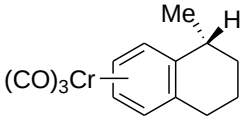
8. 

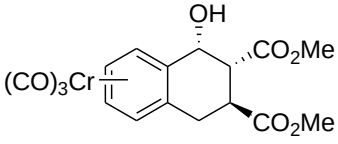
9. 

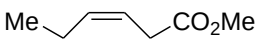
Lecture 32

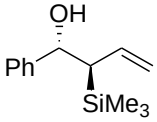
1. 

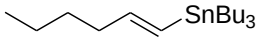
2. 

3. 

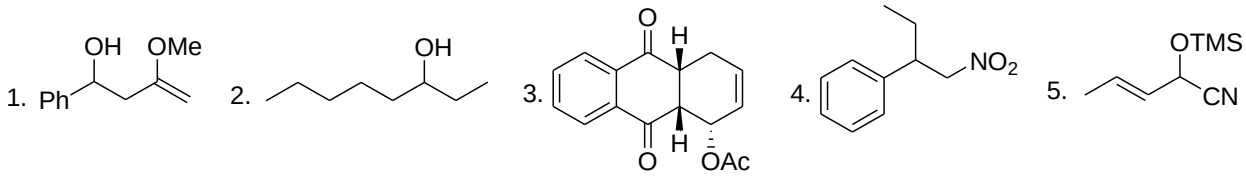
4. 

5. 

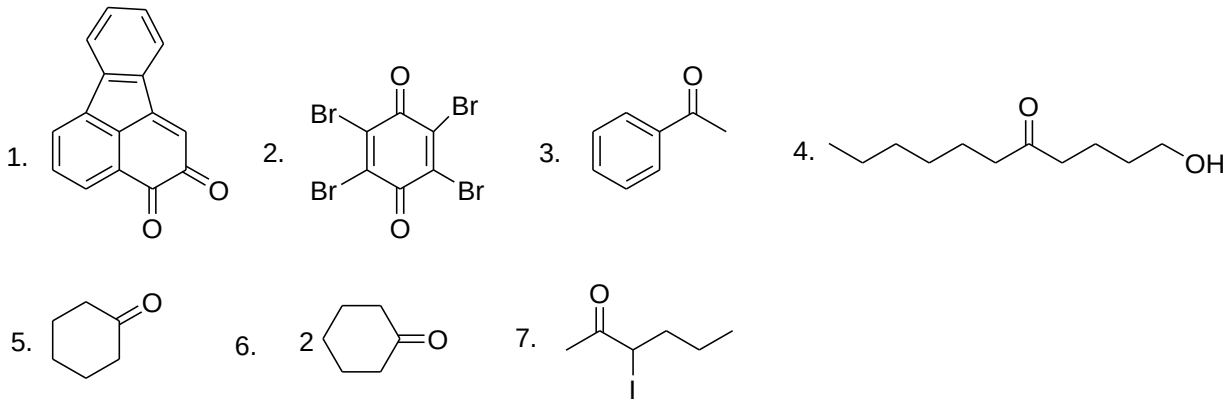
6. 

7. 

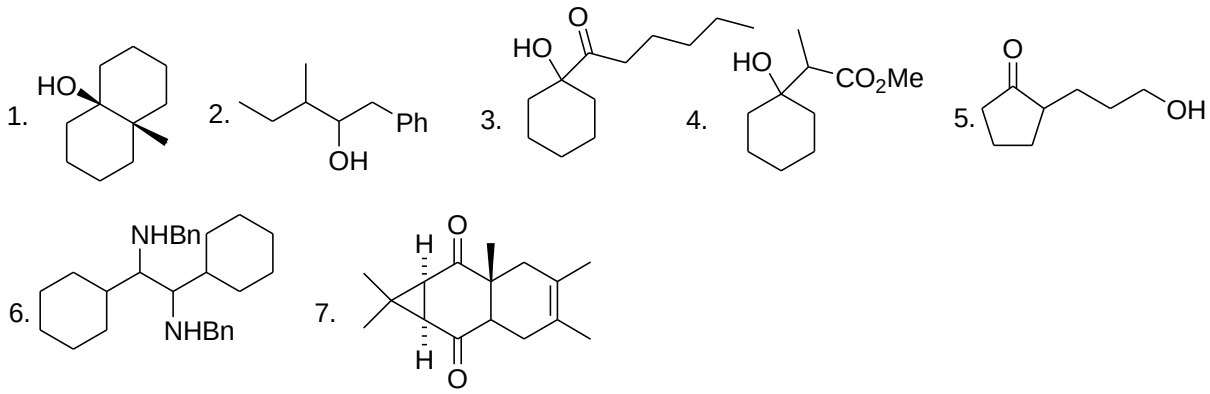
Lecture 33



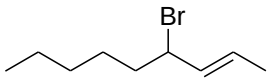
Lecture 34

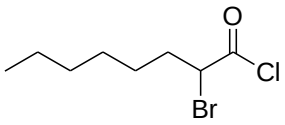


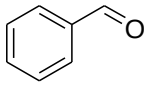
Lecture 35

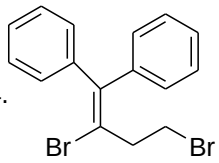


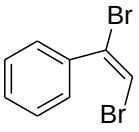
Lecture 36

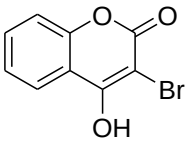
1. 

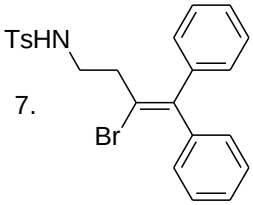
2. 

3. 

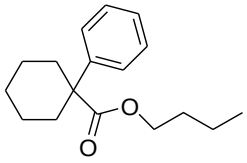
4. 

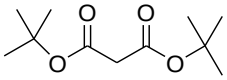
5. 

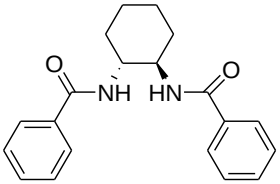
6. 

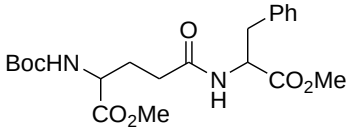
7. 

Lecture 37

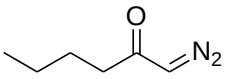
1. 

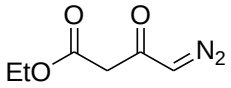
2. 

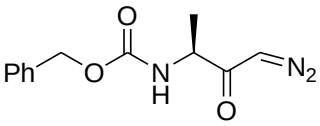
3. 

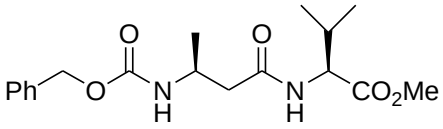
4. 

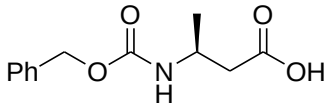
Lecture 38

1. 

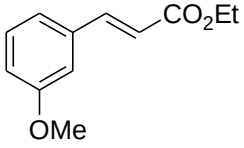
2. 

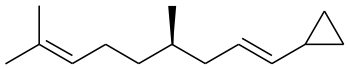
3. 

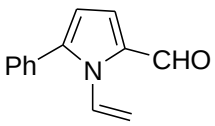
4. 

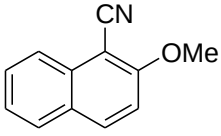
5. 

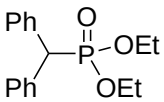
Lecture 39

1. 

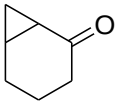
2. 

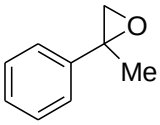
3. 

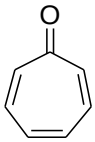
4. 

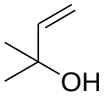
5. 

Lecture 40

1. 

2. 

3. 

4. 

5.