

Al Azhar University

Faculty of Pharmacy

Pharmaceutical Chem. Dept.

Organic chemistry II

dr kanan

final 2017

Dec, 2017

Time allotted :- 2 Hrs

**Final Exam**

**Organic Chemistry (2)**

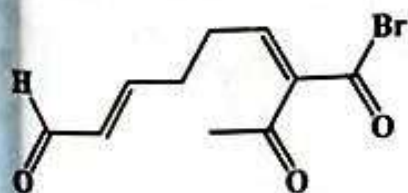
**2017/2018**

Student's Name ..... Student's No .....

Fill in the space

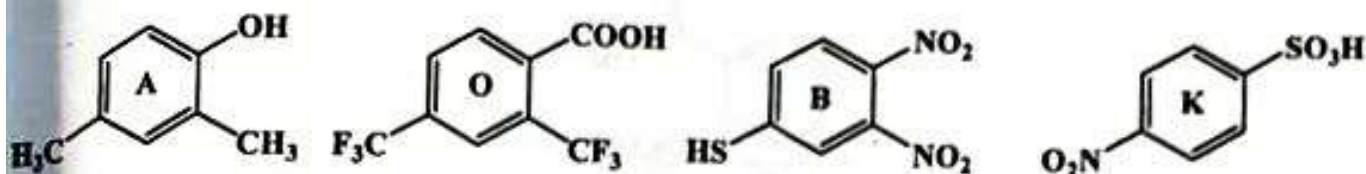
- a- The  $\text{LiAlH}_4$  can be used to convert amides to .....
- b- Friedel-Crafts acylation is classified as ..... reaction.
- c- Birch reduction converts benzene to.....
- d- Diazonium salts can be used to synthesize bromobenzene via.....reaction
- e- Sulfa drugs have ..... functionality.
- f- Gabriel reaction used to synthesize amine from .....
- g- Deickmann condensation includes Intramolecular condensation of .....
- h- Fremy's salt has the ability to convert phenol to .....
- i- Intramolecular neutralization salt of amino acid is known as .....
- j- Hell-Volhard-Zeliniskii (HVZ) is well-known reaction to halohogenate .....

Provide the IUPAC name for the following structure

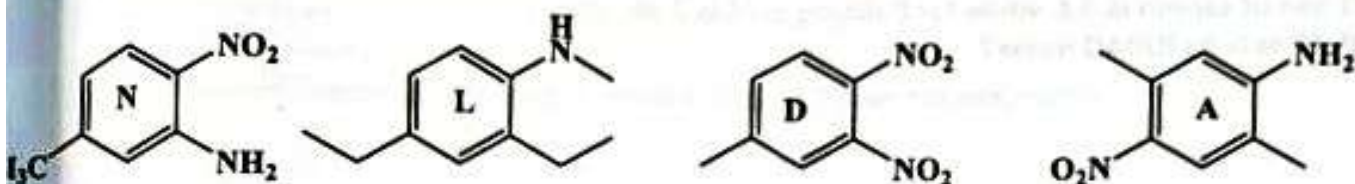


Q6] Arrange the following compounds according

a. The increase in their acidity



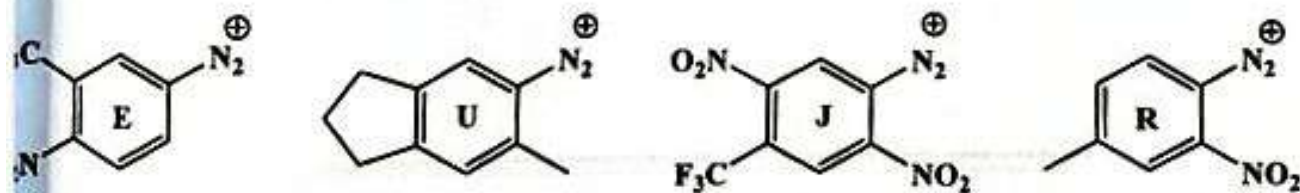
b. The increase in their basicity



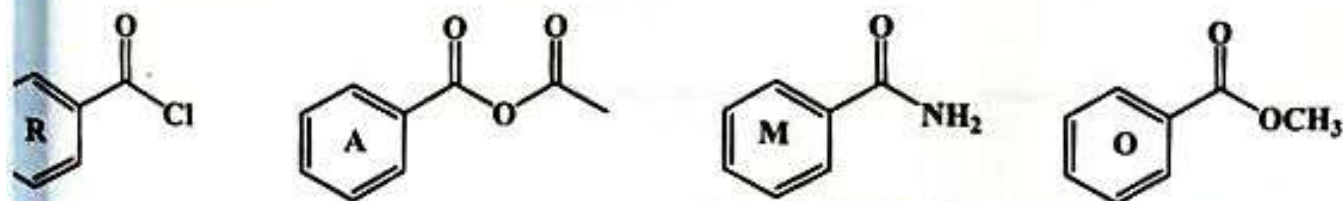
c. The ease towards nucleophilic aromatic substitution



d. The ease towards azo dyes formation



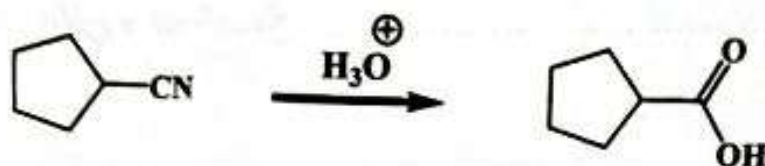
e. The ease towards nucleophilic acyl substitution



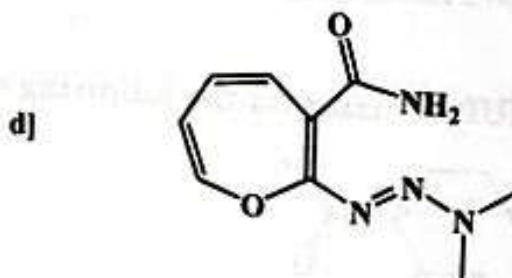
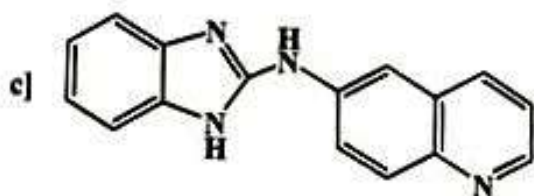
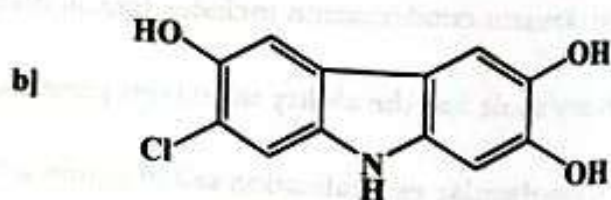
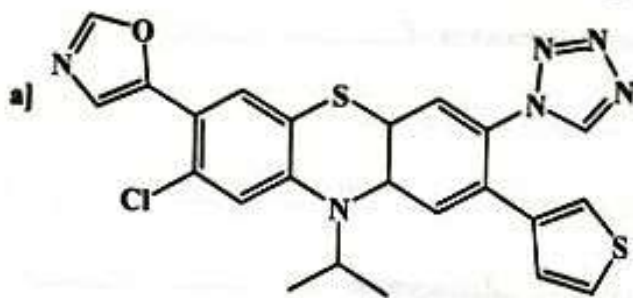
Q3] Draw the structure for the following given name

"2-Cyano-3-hydroxy-5,5-dimethyl-7,8-dioxo-cyclooctanecarboxylic acid"

Q4] Provide a clear mechanism for the following reaction; Be sure to show all intermediates and any formal charges in your structures.

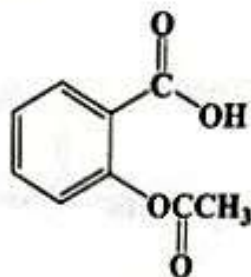


Q5] In each of the following structures, give the name for each heterocyclic nucleus





Q7] Regarding to Aspirin; answer the following questions



- What will happen if the drug is affected by acidic hydrolysis ?
- What is the expected bromination product?
- pka of aspirin is 3.5 while for Salicylic acid is 2.98; Why
- What is its IUPAC name?

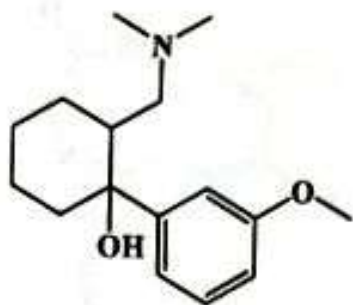
a]

b]

c]

d]

Q] Regarding to Tramadol. Answer the following questions



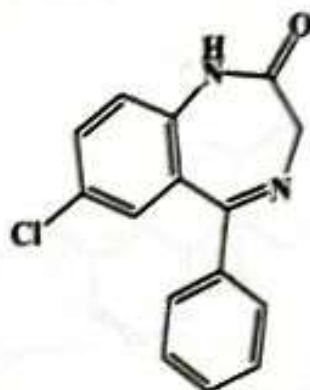
- What is Hofmann Elimination products of Tramadol?
- Does it have an acidic or a basic character? Why
- Draw its salt form?
- What will happen if the drug is treated with PCC then  $\text{NH}_2\text{NH}_2/\text{KOH}$ ?

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Q9] Regarding to Diazepam ; answer the following questions;



- a) What is the expected product up on its treating with an Xss amount of  $LiAlH_4$ ?
- b) What is the expected product up on its hydrolysis?
- c) Does this drug contain an  $\alpha$  hydrogen? Explain
- d) What are nitrogen functionalities in the drug?

a]

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.....  
.....

b]

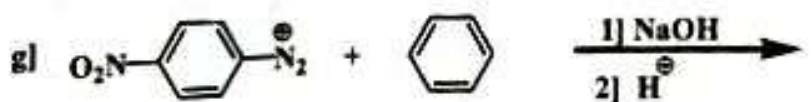
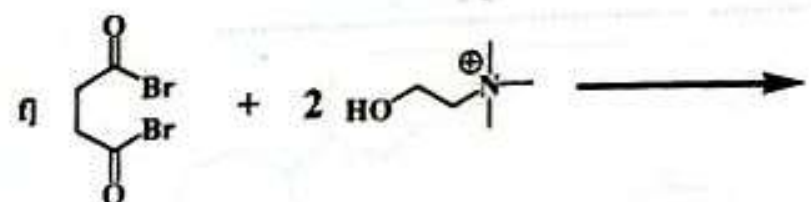
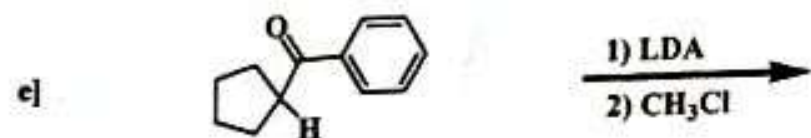
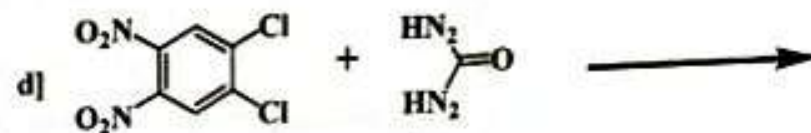
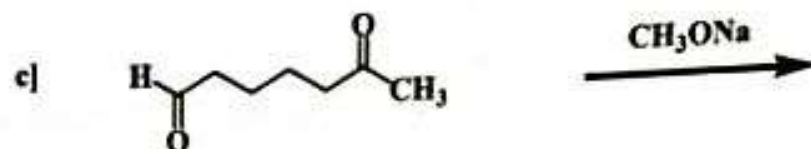
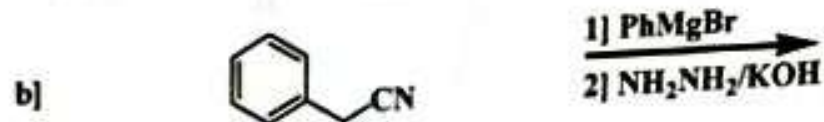
.....  
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c]

.....  
.....  
.....

d]

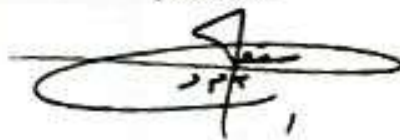
**Q11] Provide the missing**



Best wishes

Dr. Kanan Al Wuhaidi

18-12-2017



Q] How the following two conversions might be accomplished?

