
 Academic Year : 2016 -2017 Second Term Date: 21 / 5 /2017 Time :2 hrs .	Final Exam Special Organic Chemistry Agricultural Biotechnology Program (3 rd Level) Code No : Chm 305 Total degree :60 The exam in one paper on two faces	 Mansoura University Faculty of Agriculture Agric. Chem. Dept.
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Answer the following questions :

Question 1 : (15 degree - 3 for each part)

- A - What is the meaning of phenolic hydroxyl group ?
- B - Explain the action of the following on phenol .
- 1 - Hydrogene in the presence of Ni, Δ (150 -175).
 - 2 - PCl_5 with heating .
 - 3 - $\text{Hg}(\text{CH}_3 - \text{COO})_2$.
- C - Give any two methods for preparing phenol
- D - By using Kolbe reaction , show how phenol can be separated from amixture contains carboxylic acid (in the presence of these reagents NaOH , CO_2 , HCL and soda lime)
- E - Discuss , nitro substituent groups in picric acid increas es the acidity in spit of this acid no contains carboxylic group .

Question 2 : (15 degree - 3 for each part)

- A - Give some of the most important uses for quinol or pyrogallol .
- B - Write the reactions of aniline with :
- 1 - Benzaldehyde (with heating)
 - 2 - Acetyl Chloride (with nomenclature of the products).
- C - Discuss the importance of acetylation reaction for aromatic primary amine .
- D - Complete this reaction :
- O -phenylenediamine + glyoxal \longrightarrow +.....
- E- Propyl dimethyl isobutyl ammonium hydroxide : How can you apply Hofmann elimination reaction on the previous component (with nomenclature the product)

Question 3 : (15 degree - 3 for each part)

- A - Give precise definition of the term alkaloids . Could you say if this definition is perfect ?
- B - Write a brief note (structure and physiological activity) on the following alkaloids
- 1 - Codeine
 - 2 - Cocaine
- C- What are the names of sulphur compounds derived from the following corresponding oxygenated compounds
- 1 - $\text{CH}_3 - \text{CH}_2 - \text{OH}$
 - 2 - $\text{CH}_3 - \text{CONH}_2$
 - 3 - $\text{CH}_3 - \text{CH}_2 - \text{O} - \text{CH}_2 - \text{CH}_3$

D - Write the chemical structure of the following sulphur and phosphorus acids

1 - sulphurous acid

2 - suphoxylic acid

3 - phosphonic acid

4 - phospholinic acid

E- Complete the following reactions with nomenclature the products .



Question 4 : (15 degree - 5 for each part)

A - Classify of the phosphorus compounds according to the position of phosphorus atom .

B - Describe two methods to prepare triethyl phosphate .

C - Beginning with benzene , show how can you prepare the following Aryl phosphine compounds

1 - phenyl phosphine

2 - Diphenyl phosphine

3 - phenyl dihydroxy phosphine

4 - phenyl die thoxy phosphin

With my best wishes ,,,,,,

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