

Kafrelsheikh University

Faculty of science



Winter semester of the academic year 2019/2020

Chemistry department

## Suggested research topics

## Winter semester of the academic year 2019/2020

كيمياء عضوية (II) كيمياء عضوية

Course name in English: Organic Chemistry (II), Part (A)

**Professor Dr.: Hanaa Mansour** 

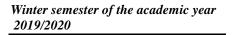
Level: 2<sup>nd</sup> Year Chemistry, Special

**Chemistry Department, Faculty of Education** 



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No.	<b>Research title</b>	<b>Research items</b>							
1	Chemical Bonding	1-Types of chemical bonding 2-Examples of each Type 3-Common examples of different type 4- Electronic configurations& Bonding							
2	Electronegativity	<ul> <li>1-Definition of electronegativity</li> <li>2- Periodic table and electronegativity</li> <li>3-Relation between electronegativity &amp;bond polarity</li> <li>4-Molecular polarity</li> <li>5- Dipole moments and its applications</li> <li>6- CH<sub>4</sub>, CH<sub>3</sub>F, CO<sub>2</sub>, CH<sub>2</sub>F=CH<sub>2</sub>F NH<sub>3</sub>, H<sub>2</sub>O Molecules are polar or NOT?</li> </ul>							
3	Hybridization	<ul> <li>1-Classifications of hybridization.</li> <li>2-Shape of orbitals in each type.</li> <li>3- Examples of each type of hybridization</li> <li>4-Hybridization in Formaldehyde.</li> <li>5- Why hybridizations happened?</li> </ul>							
4	Resonance & Inductive effects	<ol> <li>1- Definition of resonance &amp; Inductive effects</li> <li>2-Types of resonance &amp; Inductive effects</li> <li>3-Which is more strong resonance or Inductive effects</li> <li>4- Applications of resonance on aromaticity &amp; orientation on benzene ring</li> <li>5- Acidity of phenol</li> </ol>							
5	Acidity & Basicity	1-Definitions of acidity & Basicity 2- Inductive effects and acidity 3-Which is more acidic aliphatic acids or aromatic acids 4-Lewis acids& Lewis base							
6	Keto-enol Tautomerism	<ol> <li>1- Definition of keto-enol tautomerism</li> <li>2-Tautomerism in 1,3-β-diketones (cyclic, acyclic)</li> <li>3-Which is more stable keto or enol form, WHY??</li> <li>4- Acid catalysis of keto-enol tautomerism</li> <li>5- Which is more basic aliphatic amines or aromatic amines WHY???</li> </ol>							

## **Course Instructor:**

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## **Head Department**



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Winter semester of the academic year 2019/2020

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