



Kafrelsheikh University

Faculty of science

Chemistry department



Winter semester of the academic year
2019/2020

Suggested research topics

Winter semester of the academic year 2019/2020

Course name in Arabic: (II) كيمياء عضوية
Course name in English: Organic Chemistry (II), Part (A)
Professor Dr.: Hanaa Mansour
Level: 2nd Year Chemistry, Special
Chemistry Department, Faculty of Education

No.	Research title	Research items
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	1-Definition of electronegativity 2- Periodic table and electronegativity 3-Relation between electronegativity & bond polarity 4-Molecular polarity 5- Dipole moments and its applications 6- CH_4 , CH_3F , CO_2 , $\text{CH}_2\text{F}=\text{CH}_2\text{F}$, NH_3 , H_2O Molecules are polar or NOT?
3	Hybridization	1-Classifications of hybridization. 2-Shape of orbitals in each type. 3- Examples of each type of hybridization 4-Hybridization in Formaldehyde. 5- Why hybridizations happened?
4	Resonance & Inductive effects	1- Definition of resonance & Inductive effects 2-Types of resonance & Inductive effects 3-Which is more strong resonance or Inductive effects 4- Applications of resonance on aromaticity & orientation on benzene ring 5- Acidity of phenol
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	1- Definition of keto-enol tautomerism 2-Tautomerism in 1,3- β -diketones (cyclic, acyclic) 3-Which is more stable keto or enol form, WHY?? 4- Acid catalysis of keto-enol tautomerism 5- Which is more basic aliphatic amines or aromatic amines WHY??

Course Instructor:

Name: Dr. Hanaa Mansour

Head Department

Signature:

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