

Kafr El-Sheikh University
Faculty of Science
Chemistry Department



Suggested research topics
Winter semester of the academic year 2019/2020

Course name: III كلية التربية-شعبة الكيمياء- كيمياء تحليلية
Professor Dr.: Shaban Y. Shaban
Level: الفرقة الثالث مميز
Program: Chemistry

1. Title: Spectrometers

- Spectrophotometer; fundamentals and applications
 - Fluorometer; fundamentals and applications
-

2. Title: UV and visible Spectrum

- Visible Spectrum
 - Light Absorption and the Origin of Colour
 - Visual Pigments: Chromophore
 - Absorption and Emission of light
 - Spin multiplicity
 - Selection rules,
 - Beer-Lambert Law and its limitations
-

3. Title: Electronic Transitions

- Discuss the different types of electronic transition in details with diagrams.
-

4. Title: UV spectrum and its parameters

- Presentation of Spectra
 - How to choose a solvent.
 - Polar and nonpolar Solvents
 - What is Chromophore with examples?
 - What is Auxochroms and their effect?
 - The Effect of Conjugation
 - Effect of lone pair of electron
-

5. Title: Interaction of Light with Matter

- Physical Interaction of Light with Matter
 - Chemical Interaction of Light with Matter
 - Electromagnetic spectrum and detailed effect of its regions (Short note on regions and its applications Starting from Cosmic ray to radio)
-

Name: Professor Dr. Shaban Y. Shaban

Head of Department

Signature:

