CHAPTER OVERVIEW

12: NUCLEAR MAGNETIC RESONANCE SPECTROSCOPY

Learning Objectives

After reading this chapter and completing ALL the exercises, a student can be able to

- explain how ^{1}H NMR spectrometers work - refer to section 12.1
- interpret chemical shifts of ^{1}H NMR spectra as they relate to shielding and deshielding - refer to section 12.2 and 12.14
- explain the delta scale of ^{1}H NMR spectra - refer to section 12.3
- recognize equivalent protons within an organic compound - refer to section 12.4
- correlate functional group structural features with chemical shifts - refer to section 12.5
- determine the proton ratio from ^{1}H NMR spectra peak integration data - refer to section 12.6
- explain and interpret spin-spin splitting patterns in ^{1}H NMR spectra - refer to section 12.7
- explain and interpret spin-spin splitting patterns in ^{1}H NMR spectra - refer to section 12.8
- describes examples of some uses of ^{1}H NMR spectroscopy - refer to section 12.9
- explain how ^{13}C NMR spectrometers work - refer to section 12.10
- interpret the chemical shifts of ^{13}C NMR spectra to determine the structural features of organic compounds - refer to section 12.11 and 12.14
- explain how DEPT (distortionless enhancement by polarization transfer) is used to determine the number of hydrogens bonded to each carbon - refer to section 12.12
- describes some uses of ^{13}C NMR spectroscopy - refer to section 12.13

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