chem263, fa2009 pe 6-1	chem263, fa2009 pe 6-2 General / Terminology • traditional:
General / Prep.	alternating single/ multiple bonds
MO Theory	(incl. heteroatoms such as O, S, N)
UV Spectroscopy	• modern:
Practice	"continuous sideways overlap of p orbitals" =
Ref 13: (1 - 9); 1, 2B, 7, 9 (both ed ^{ns}) Prob HMWK #4 Adv Rdg 13: 10, 11 (both ed ^{ns})	"extended π system" Examples:
chem263, fa2009 pe 6-3 General	chem263, fa2009 pe 6-4 General
also:	In contrast, here are some non-conjugated systems:
" π bond interacting with single p orbital",	• cumulenes, which have perpendicular π bonds:
such as	• steric strain may prevent parallel line–up, e.g.
Emphasis will be on 1, 3 dienes: i.e.	
	 steric strain between indicated methyl groups results in twisting "no parallel overlap" = not conjugated isolated π bonds, such as





Notes:

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UV Correlation

<u>system</u>

UV peak at

isolated -ene conj. diene conj. triene conj. tetraene

:. can be used for structure analysis (similar to IR, NMR, ..)

green light is taken out reddish light is reflected

white light hits surface,

recall process of light absorption:

β-carotene

double bonds not in conjugation (twisted out of plane, because of steric strain

Structure of β - carotene:

has 9 double bonds in conjugation,

vitamin A is chemically related to β - carotene; involved in physiology of vision, for more details see Biochem courses

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Practice

An unknown with MF C_6H_{10} has no observable UV above 200 nm, no rings , no triple bonds. Possible structure?

Ans.