TITLE

Date : / /

Mo Tu We Th Fr Sa Su

* Woodward - Fieser rules for Calculating Absorption maxima in Dienes:-

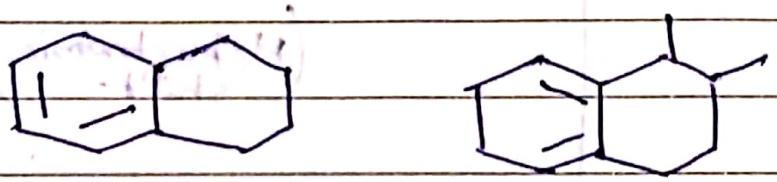
Rules:-

(1) Takes Parent value of for butadiene system or a cyclic conjugated dienes.

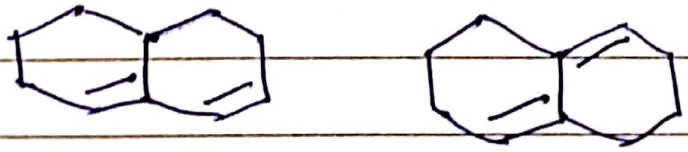
(a) dienes ⇒ 217 Nm.

(b) Acyclic trienes ⇒ 245 Nm.

(c) Homoannular Conjugated dienes ⇒ 253 Nm.



(d) Heteroannular conjugated dienes ⇒ 215 Nm.



(e) Alkyl substituent or ring residue ⇒ add 5 Nm.

(f) Exo cyclic double bond ⇒ add 5 Nm.

(g) Each double bond extending Conjugation ⇒ add 30 Nm.

Neelgagan

TITLE

Date : / /

Mo Tu We Th Fr Sa Su

for. Auxochromes ⇒

(a) $-OR$ → add 6 Nm.

(b) $-SR$ → add 30 Nm.

(c) $-Cl$ | $-Br$ → add 5 Nm.

(d) $-NR_2$ → add 60 Nm.

(e) $O-CO-CH_3$ → add 0 Nm.

——×——

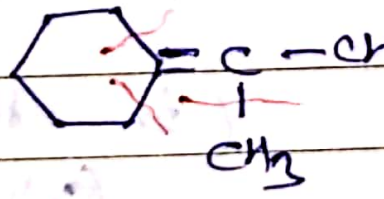
(1) Hexadienes -

eg $CH_3 \{CH=CH-CH=CH\} CH_3$

Base Value. = 217 Nm.

Two alkyl substituents = 5×2 = 10 Nm

λmax = 227 Nm.

(2) 

Base value = 217 Nm

two alkyl substituent = 10 Nm (5×2)

two ring residue = 10 Nm (5×2)

Exo cyclic double bond = 5

242 Nm

Neelgagan

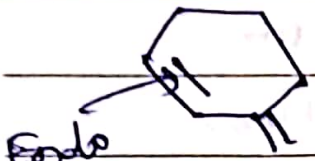
TITLE

Date : / /

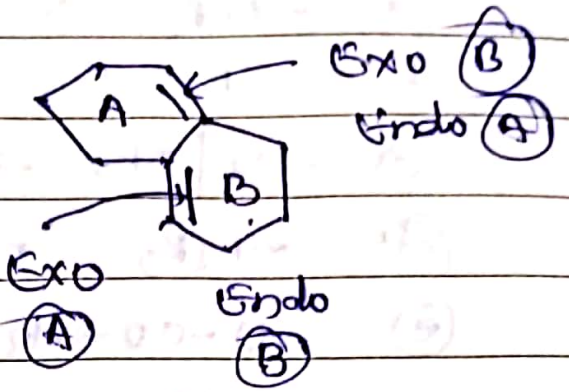
Mo Tu We Th Fr Sa Su

Exo

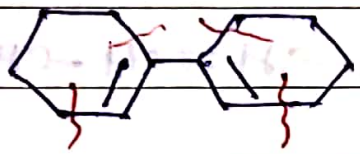
Endo



Endo



Q.

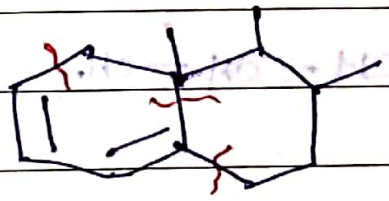


Base value = 215 Nm

Four ring residue (5×4) = 20 Nm

λ_{max} 235 Nm

Q.



(in ethanol)
(Solvent)

Base value. (Homo annular) ⇒ 253 Nm

3 ring residue ⇒ 15 Nm (5×3)

1-exocyclic double bond ⇒ 5 Nm

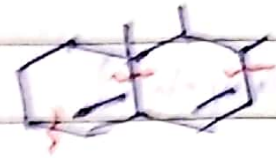
λ_{max} = 273 Nm

Neelgagan

TITLE

Date : / /

Mo Tu We Th Fr Sa Su

1.  (in ethanol)

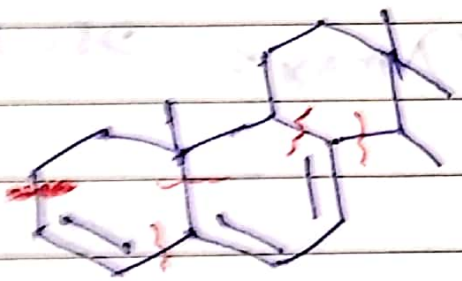
Hetero annular –

Base value = 215 nm

1-exocyclic double bond = 5 nm

3-ring residue = 5×3 = 15 nm

λ_{max} = 235 nm.

2. 

Base value = 253 nm.

(Homo annular) →

4-ring residue → 20 nm (5×4)

1-double bond extending conjugation → 30 nm

2-exocyclic double bond → 10 nm

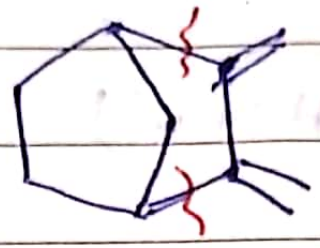
λ_{max} = 313 nm

Neelgagan

TITLE

Date : / /

Mo Tu We Th Fr Sa Su

Q.  (Bicyclic)

Base value = 217 Mμ

2 - ring residue = 10 Mμ (5×2)

2 - Exocyclic double bond = 10 Mμ (5×2)

1 - Bicyclic system = 15 Mμ

λ_{max} = 252 Mμ.