

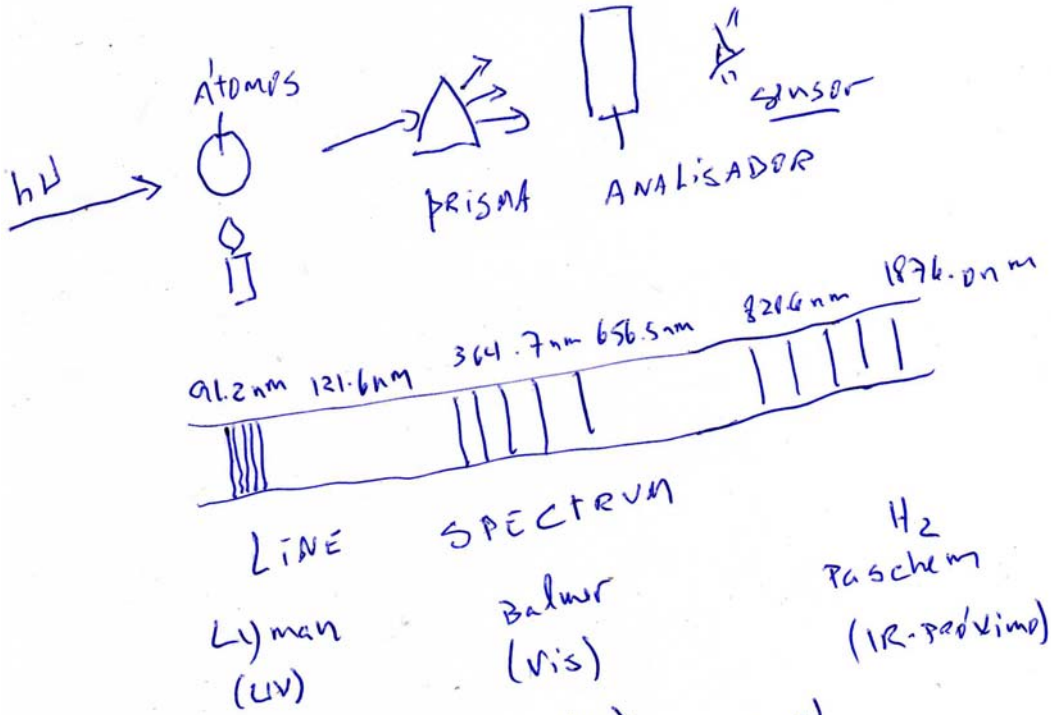
QBQ 0204

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# REVISÃO QUÍMICA

## ESTRUTURA DE ÁTOMOS

$$\Delta E = 1.602 \times 10^{-19} \text{ J}$$



$$\bar{\nu} = R_H \left( \frac{1}{n_1^2} - \frac{1}{n_2^2} \right) \text{ cm}^{-1}$$

109680

$$E = h\nu$$

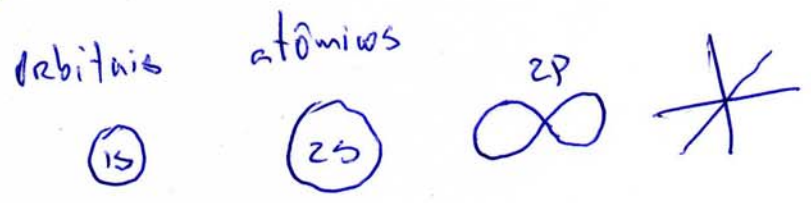
$$E = \frac{hc}{\lambda}$$

Rydberg (empírica)

4V ↑ VIOLETA  
 ANIL  
 AZUL  
 VERDE  
 AMARELO  
 ALARANJA  
 IR ↓ VERMELHO

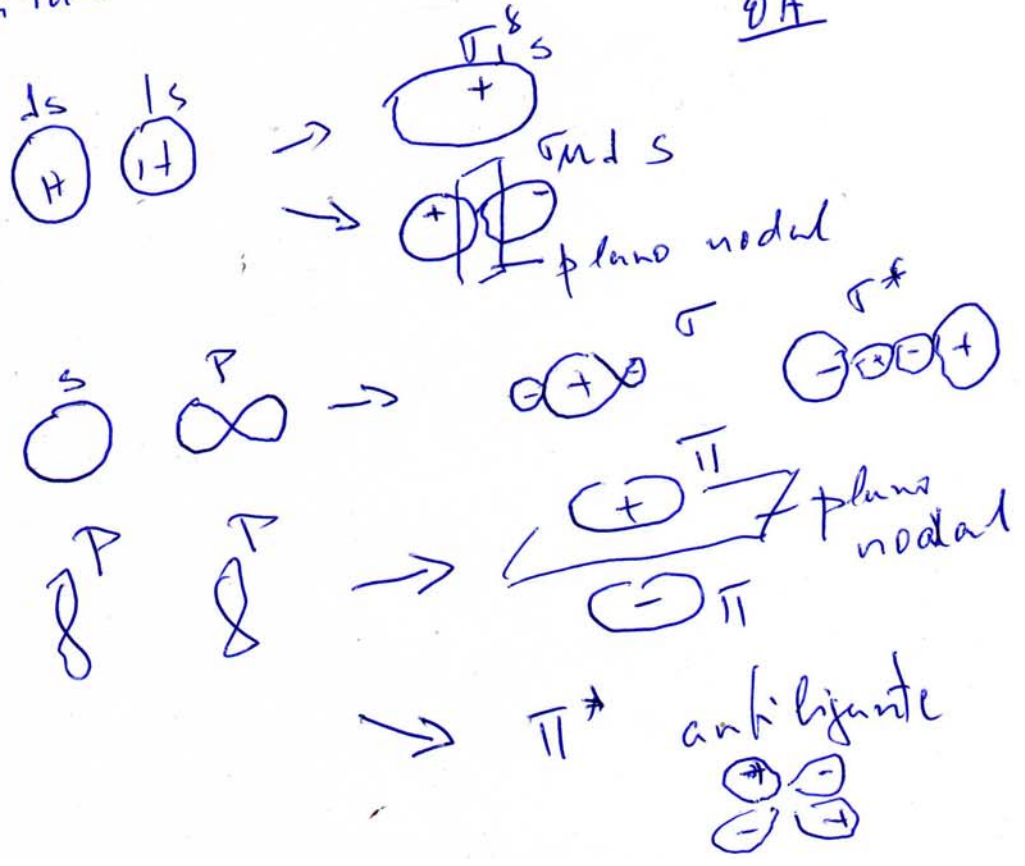
$E \uparrow \lambda \downarrow$

$2s$   $2p$   
 $3s$   $3p$   $3d^{10}$   
 $4s$   $4p$   $4d$   $4f$   
 $5s$   $5p$   $5d$   $5f$   $5g$  etc  
 $6s$   $6p$   $6d$   $6f$   $6g$   $6h$



LIGAÇÃO QUÍMICA

orbitais moleculares = combinação linear de OA



# GASES nobres

última camada preenchida -  $8e^-$

Alcalinos  $\rightarrow -1e^-$

Alcalinos  
Terrosos  $\rightarrow -2e^-$

Halogênios  $\rightarrow +1e^-$

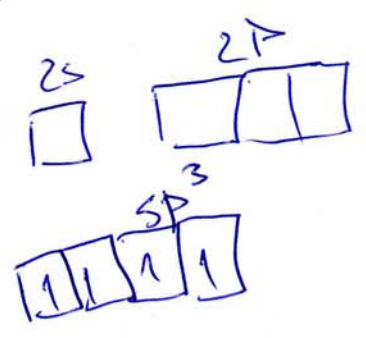
Oxigênio  $\rightarrow +2e^-$

Nitrogênio  $\rightarrow \underline{NH_3} + 3e^-$

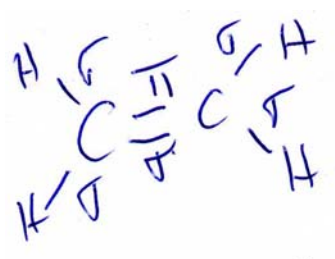
Carbono (A=6)

CH<sub>4</sub>

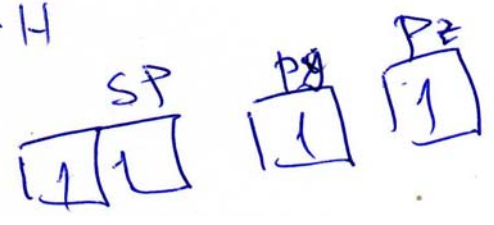
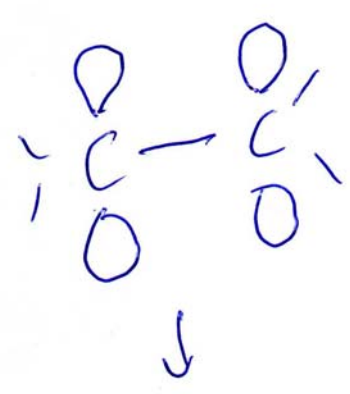
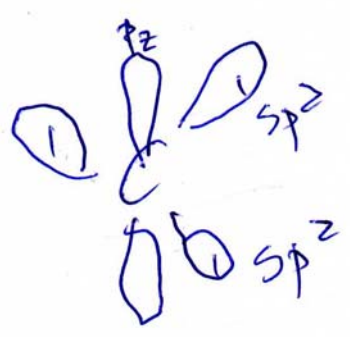
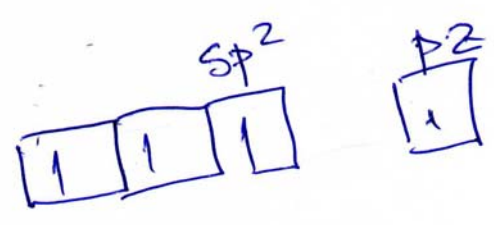
$1s^2$   
 ~~$2s^2$~~   $2p^2$  ?



tetrahedro



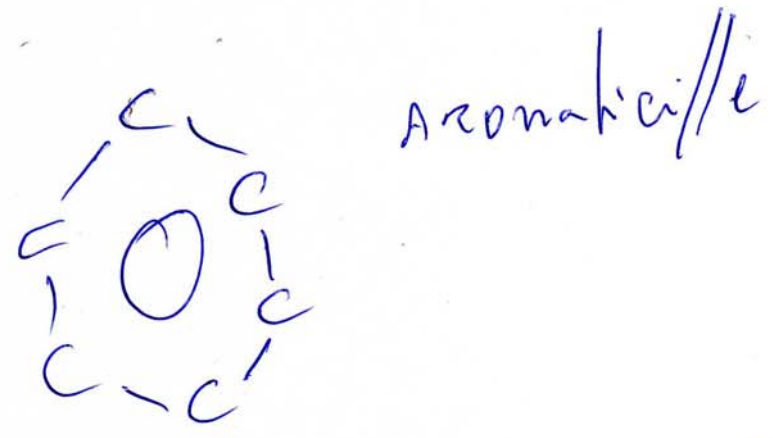
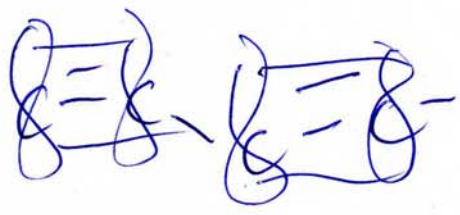
C = 3 valence





condução de elétrons

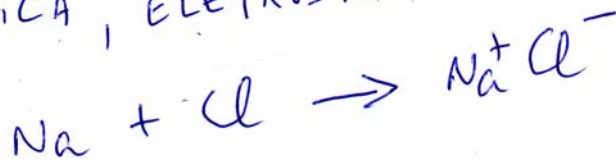
$\pi \uparrow \rightarrow$  ressonância



Carantes monte de  $e^-, \pi$

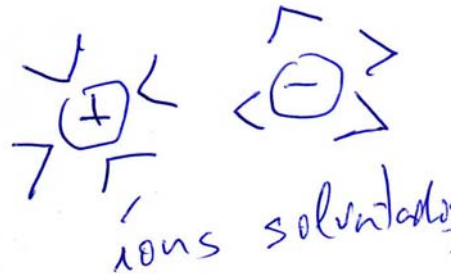
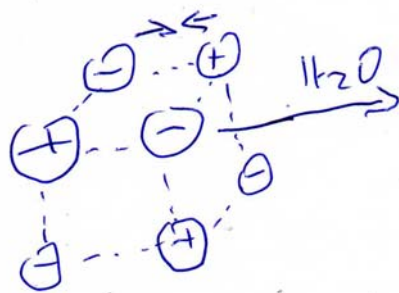
# ligações químicas

- IÔNICA, ELETRISTÁTICA



(+) (-) tipos de cristais

cúbico de face centrada, etc



$$F_C = \frac{1}{4\pi\epsilon\epsilon_0} \frac{q_1 q_2}{r^2}$$

relativa vácuo

$\epsilon_{H_2O} \sim 80$        $\epsilon_{C_2H_5OH} \sim 30$        $\epsilon_{Hex} \sim 2$   
 dissolve      +/-       $\bar{n}$  dissolve

$E_{\text{íons ligados}}$  vs  $E_{\text{íons solvatados}}$

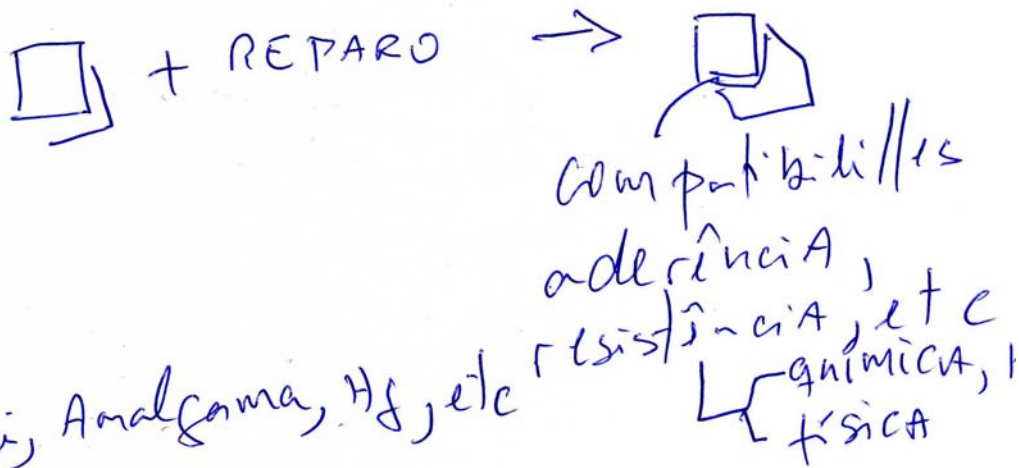


tipos de cristais

7

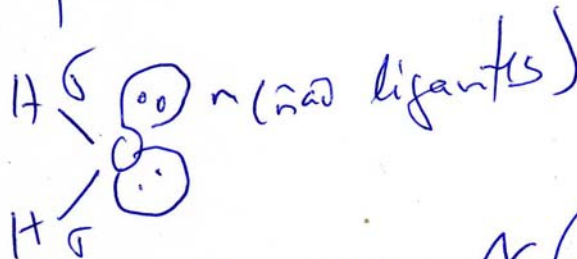
AMORFO, cristalino

REPAROS DENTÁRIOS



- Covalente

elétrons compartilhados



- ESTRUTURA → Raios X (quais)

# FUNÇÕES ORGÂNICAS

8

ALCANOS, C saturado

ALCENOS, C insaturado =

ALCINOS, C insaturado ≡

INSATURAÇÕES, CONFORMAÇÕES

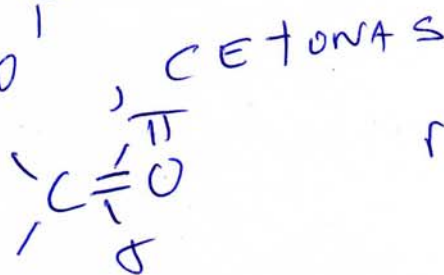
$sp^3$  - tetraédrica

$sp^2$  - triângulo

$sp$  - LINEAR

- ALCOOL  $C_nH_{2n+4}OH$

- ALDEÍDO  $\begin{array}{c} | \\ -C-O-H \\ | \end{array}$



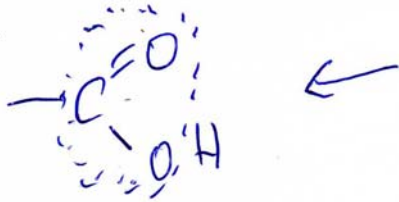
reatividades?

# polarização DA LIGAÇÃO  
# de elétrons, tipos

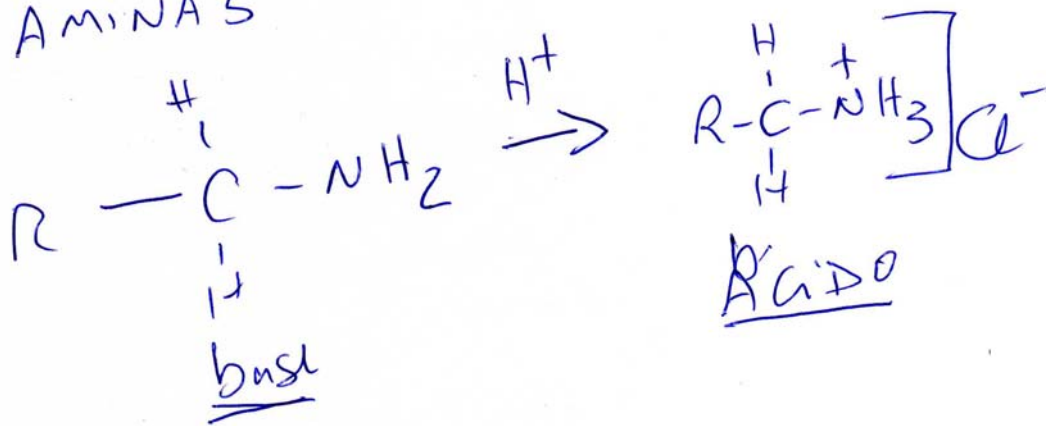


# - ÁCIDOS CARBOXÍLICOS

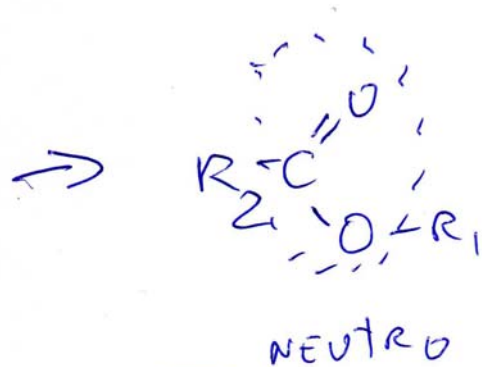
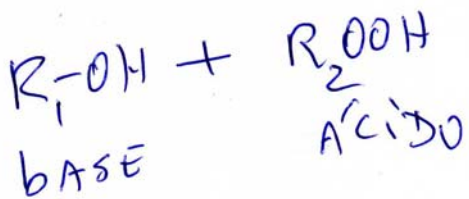
9



# - AMINAS



# - ÉSTER

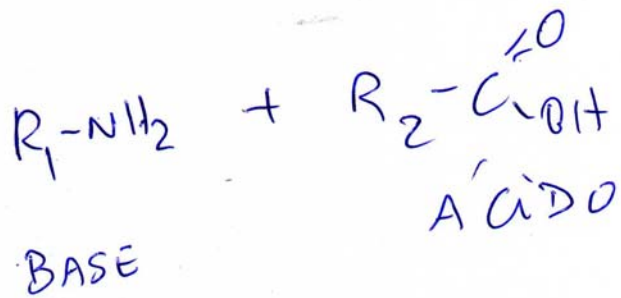


configuração

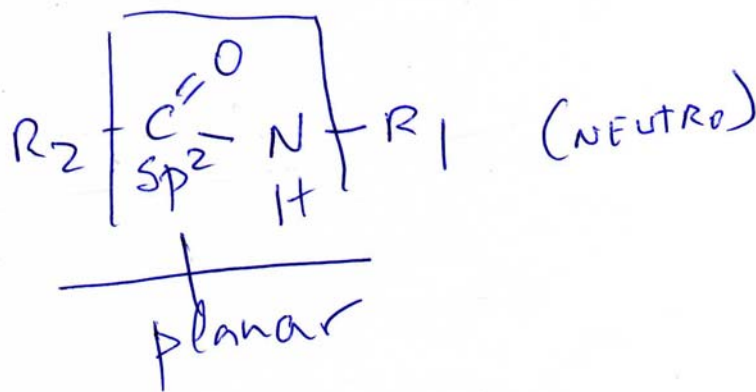


- AMIDA

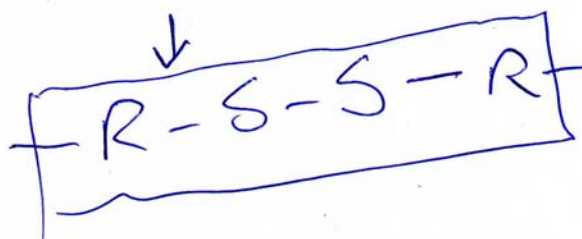
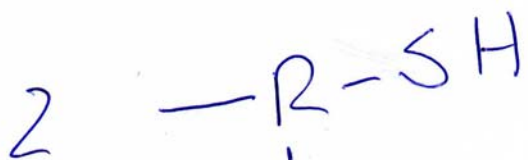
10



↓ -H<sub>2</sub>O



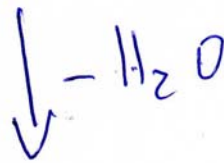
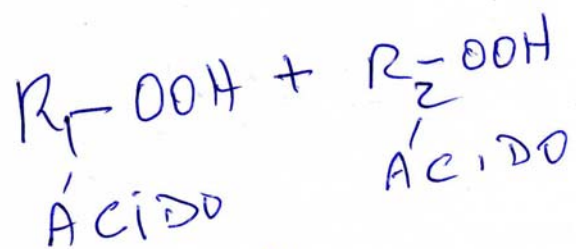
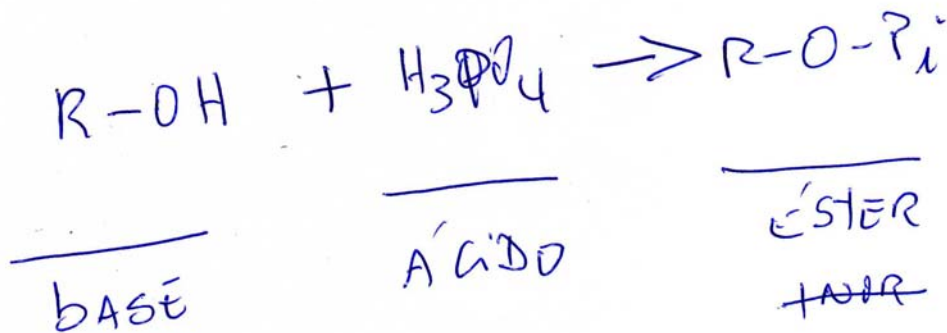
- MERCAPTANAS, TIÓIS



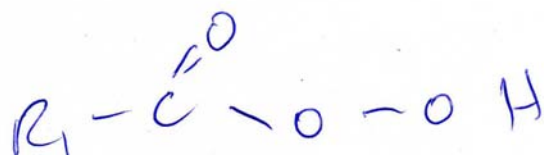
ponte de  
dissulfeto

- SISTEMAS "MISTOS"

11

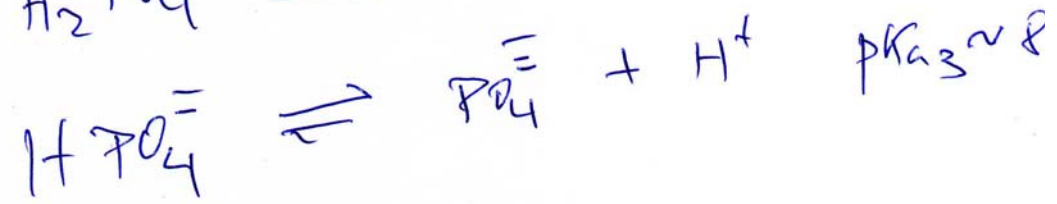
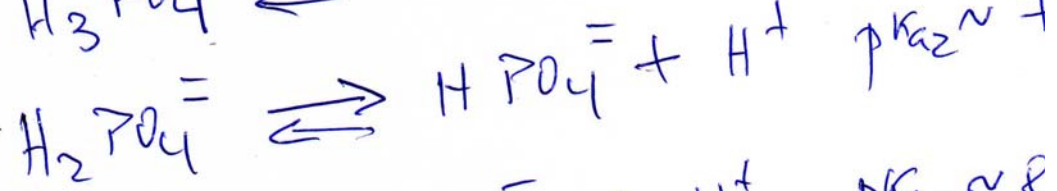
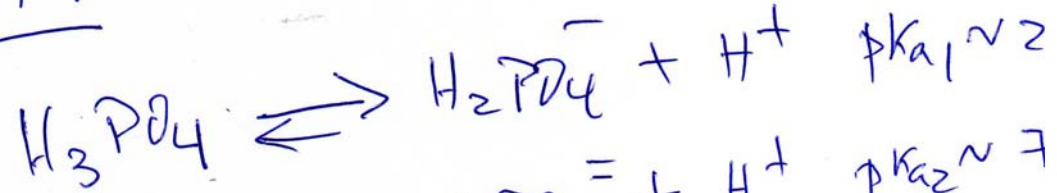


ANIDRIDOS



PERÁCIDOS

ATP



osso  $(Ca_3(PO_4)_2)$

e se colocar osso em vinagre??

ADENOSINA  $\sim P_i \sim P_i \sim P_i$

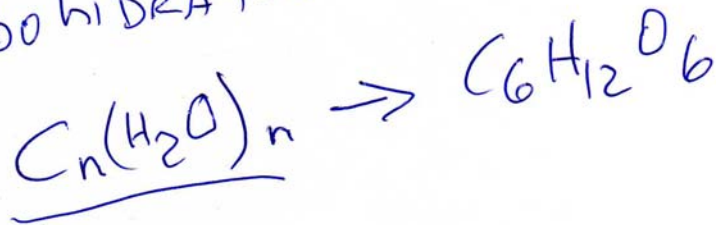
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Cargas altamente "energéticas"

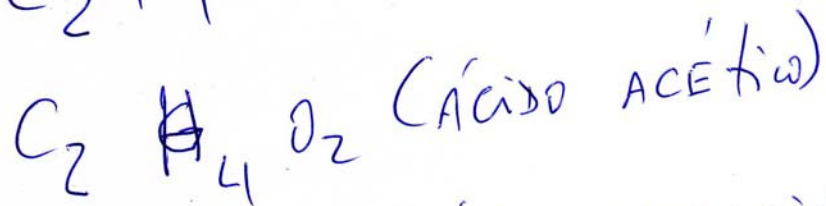
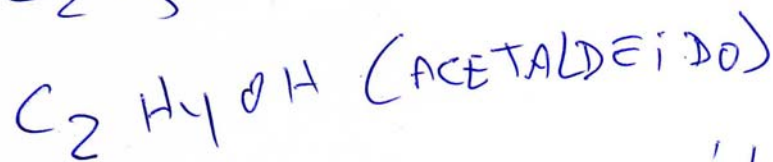
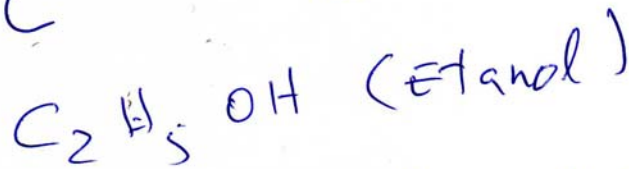
ADP, AMP, AMP<sub>c</sub>

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CARBOHIDRATOS



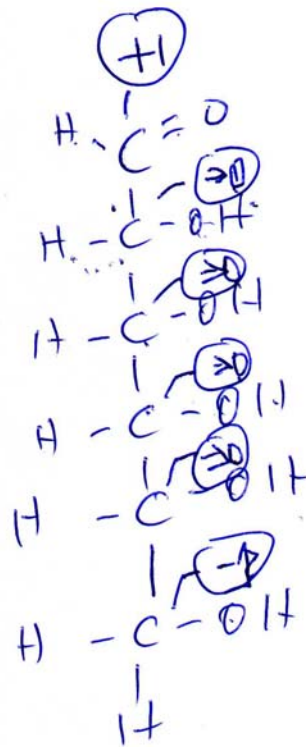
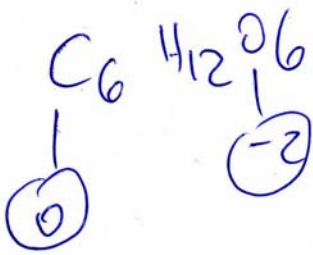
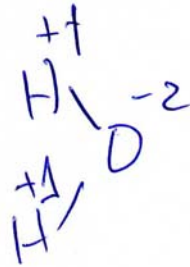
→ NÚMERO DE OXIDAÇÃO



Como determina

(19)

Fórmula mínima



$$C_{médio} = \underline{\underline{zero}}$$



QUEM QUEIMA MAIS

15

PODER CALÓRICO

ETANOL, GASOLINA,  
(UELA), GÁS  
BUTANO

OLHOU O COMPOSTO

DEVE SABER

TERRA MEIO OXIDANTE



REDUÇÃO / OXIDAÇÃO

↓  
PERDE  
ELECTRONS

↓  
GANHA  
ELECTRONS

REVER CONCEITOS REDOX