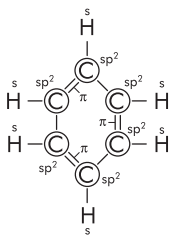




Aula 20

20.01) 46

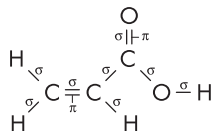


- 01. Falsa.
  - 02. Verdadeira.
  - 04. Verdadeira.
  - 08. Verdadeira.
  - 16. Falsa.
  - 32. Verdadeira.
  - 64. Falsa.
- 3 ligações  $\pi$  (puro)  
 6 orbitais não-híbridos p-puro  
 $(C - H) \rightarrow \sigma (s - sp^2)$

$$12 \sigma \begin{cases} 6\sigma(s - sp^2) \\ 6\sigma(sp^2 - sp^2) \end{cases}$$

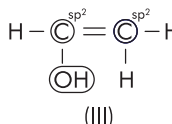
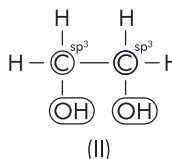
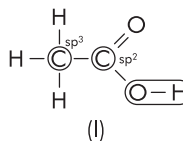
C ( $sp^2$ ) híbridos  
 Todos são carbonos insaturados (=).

20.02) E



$$\begin{cases} 8\sigma \\ 2\pi \end{cases}$$

20.03) 13

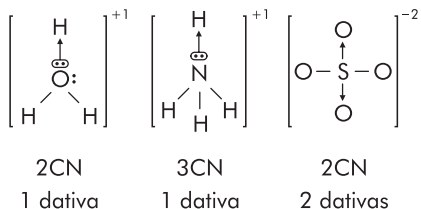


- 01. Verdadeira.
- 02. Falsa.
- 04. Verdadeira.
- 08. Verdadeira.
- 16. Falsa.

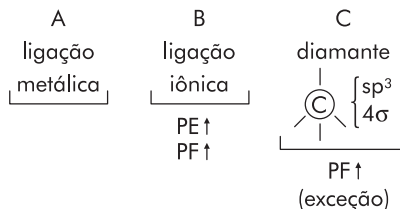
Testes

Aula 17

17.01) A



17.02) B

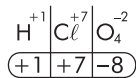
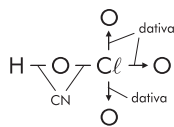








17.20) D

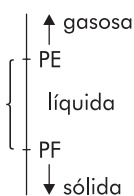


ácido perclórico (composto covalente)



## Aula 18

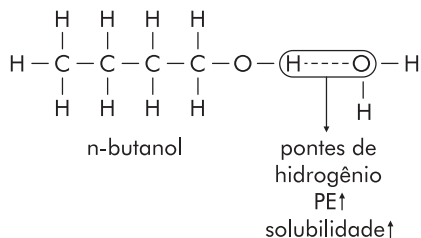
18.01) C



25 °C

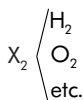
- |                                      |         |
|--------------------------------------|---------|
| I. N <sub>2</sub>                    | gasosa  |
| II. C <sub>3</sub> H <sub>8</sub>    | gasosa  |
| III. C <sub>6</sub> H <sub>6</sub>   | líquida |
| IV. C <sub>4</sub> H <sub>9</sub> OH | líquida |
| V. Hg                                | líquida |

18.02) D



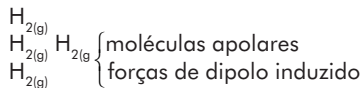
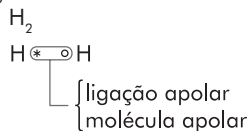
18.03) A

moléculas apolares

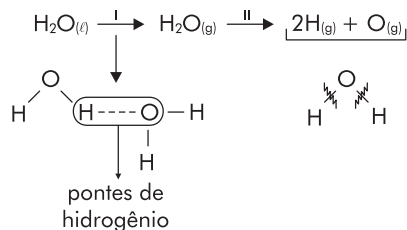


molécula apolar  
dipolo induzido – dipolo induzido

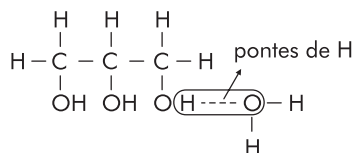
18.04) D



18.05) B

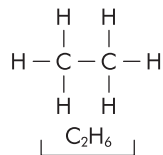


18.06) D



II. Rompimento das pontes de hidrogênio formadas entre glicerina e H<sub>2</sub>O.

18.07) C



etano  
moléc. apolar  
dipolo induzido (Van der Waals)

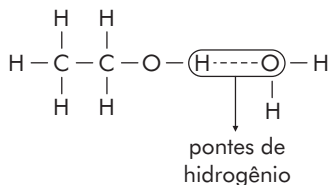
18.08) C

- H<sub>2</sub>O<sub>(v)</sub> – ponte de H
- HF – ponte de H
- H<sub>2</sub>S – sem ponte de H
- H<sub>2</sub>O<sub>(s)</sub> – ponte de H
- C<sub>2</sub>H<sub>5</sub>OH<sub>(l)</sub> – ponte de H

18.09) C

- CH<sub>4</sub> – hidrocarboneto
- C<sub>6</sub>H<sub>6</sub> – hidrocarboneto
- CH<sub>3</sub>CH<sub>2</sub>OH – álcool
- CH<sub>3</sub>OCH<sub>3</sub> – éter

e)  $\text{CH}_3\text{CHO}$  – aldeído



18.10) A

I.  $\text{K}_{(s)}$  —————  $n^\circ$  ⑦  
metal

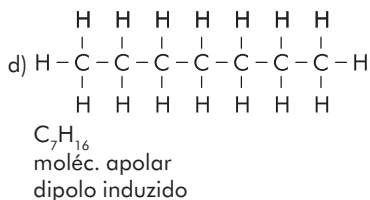
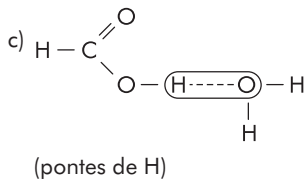
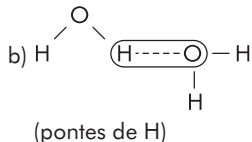
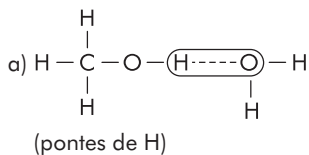
II.  $\text{Ba}^{+2}$  |  $\text{Br}_2^{-1}$  ————— ⑤  
metal | não-metal

III.  $\ddot{\text{N}}\text{H}$   $3^{(7)}$  ————— ⑧  
moléc. polar  $\left\{ \begin{array}{l} \text{H} \\ \text{F} \\ \text{O} \\ \text{N} \end{array} \right.$

IV.  $\text{CCl}_4$   $4^{(4)}$  ————— ⑥  
moléc. polar dipolo induzido

- 5) iônica
- 6) Van de Waals
- 7) metálica
- 8) pontes de hidrogênio
- 9) covalentes simples

18.11) D



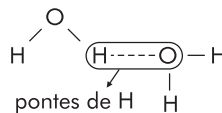
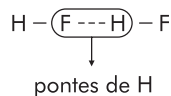
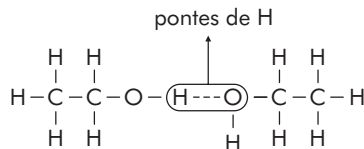
e)  $\text{C}_6\text{H}_{12}\text{O}_6$   $\text{H}_2\text{O}$

pontes de H

18.12) D

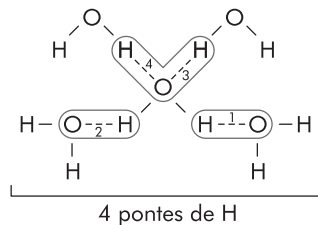
- $\text{I}_2$  – moléc. apolar – dipolo induzido
- $\ddot{\text{N}}\text{H}_3$  – moléc. polar – pontes de hidrogênio
- $\text{HCl}$  – moléc. polar – dipolo-dipolo
- $\text{CH}_4$  – moléc. apolar – dipolo induzido

18.13) A



pontes de H  $\Rightarrow$  PE  $\uparrow$  solubilidade  $\uparrow$

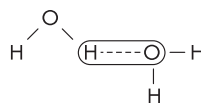
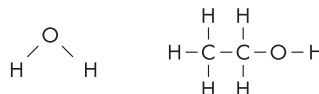
18.14) C



18.15) B

- $\text{H}_2\text{O}$  – pontes de H
- $\text{H}_2\text{S}$  – sem ponte de H
- $\text{H}_2\text{Se}$  – sem ponte de H
- $\text{H}_2\text{Te}$  – sem ponte de H
- Pontes de H  $\Rightarrow$  PE  $\uparrow$  solubilidade  $\uparrow$

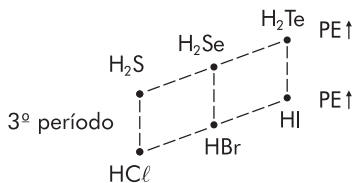
18.16) A



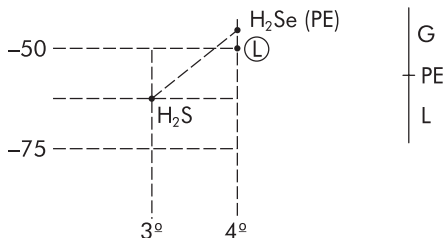
{ molécula menor  
maior associação (Cada molécula de  $\text{H}_2\text{O}$  faz quatro pontes.)

18.17) 31

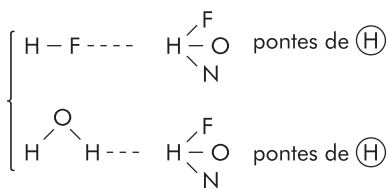
01. Verdadeira.



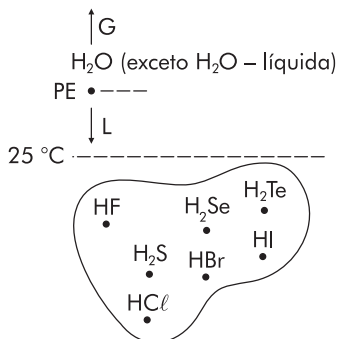
02. Verdadeira.



04. Verdadeira.



08. Verdadeira.



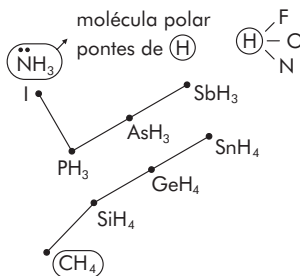
{ todos gases (25 ºC)  
1 atm

16. Verdadeira.

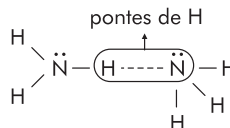


{ molécula pequena  
PE ↑  
pontes de H

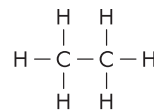
18.18) C



{ molécula apolar  
dipolo induzido



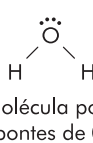
18.19) B



molécula apolar  
dipolo induzido

$$\begin{array}{|c|c|} \hline C_2 & H_6 \\ \hline 12 & 6 \\ \hline \end{array}$$

massa molar =  
30 g/mol



molécula polar  
pontes de H

$$\begin{array}{|c|c|} \hline H_2 & O \\ \hline 2 & 16 \\ \hline \end{array}$$

massa molar =  
18 g/mol

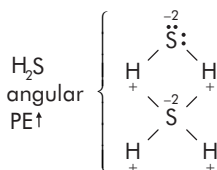
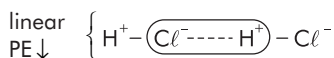
18.20) B

SiH<sub>4</sub> – molécula apolar (tetraédrica)  
dipolo induzido

PH<sub>3</sub> – molécula polar (piramidal)  
dipolo-dipolo

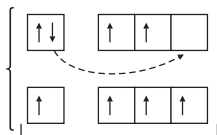
H<sub>2</sub>S – molécula polar (angular)  
dipolo-dipolo

HCl – molécula polar (linear)  
dipolo-dipolo

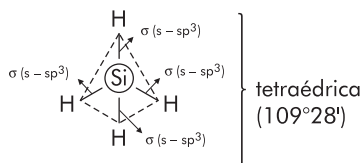


Aula 19

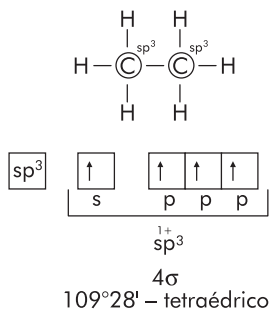
19.01) B



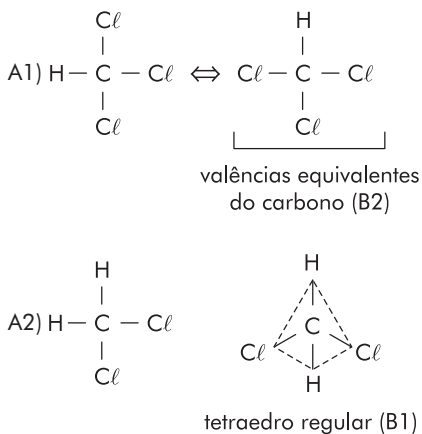
19.02) C



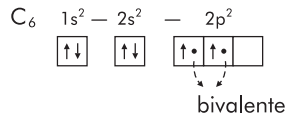
19.03) D



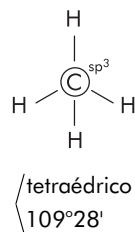
19.04) B



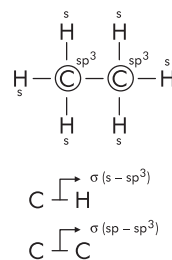
19.05) E



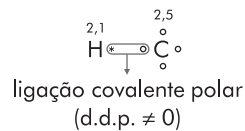
19.06) E



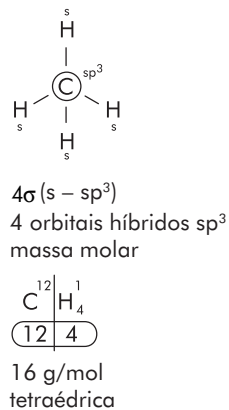
19.07) A



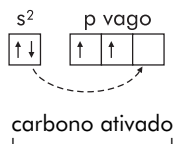
19.08) C



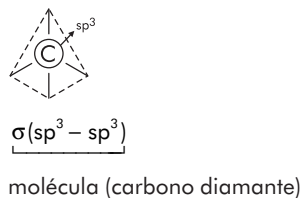
19.09) 12



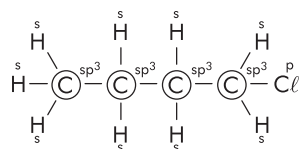
19.10) B



19.11) E



19.12) E



$\sigma(s - sp^3)$  entre H - C  
 $\sigma(sp^3 - sp^3)$  entre C - C  
 $\sigma(sp^3 - p)$  entre C - Cl

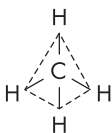
19.13) 25



- 01. **Correto.** ( $sp^3$ )
- 02. **Incorreto.**  $HCCl_3$  (clorofórmio)
- 04. **Incorreto.** ( $sp^2$  - trigonal)
- 08. **Correto.**



16. **Correto.**

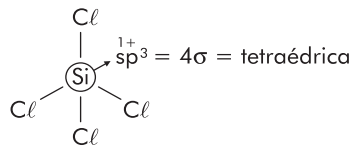


19.14) 51

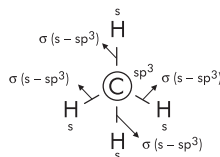
- 01. **Correto.**
- 02. **Correto.**
- 04. **Incorreto.** (estado hibridizado)
- 08. **Incorreto.** (estado hibridizado)

16. **Correto.**

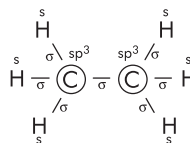
32. **Correto.**



19.15) D



19.16) 38



- 01. **Falsa.**
- 02. **Verdadeira.**

$$7\sigma \left( \begin{array}{l} 6\sigma(s - sp^3) \\ 1\sigma(sp^3 - sp^3) \end{array} \right)$$

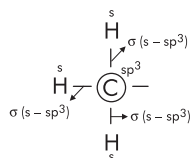
04. **Verdadeira.**

$$1\sigma(sp^3 - sp^3)$$

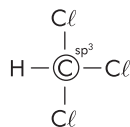
08. **Falsa.** 7 ligações covalentes

16. **Falsa.**

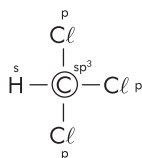
32. **Verdadeira.**

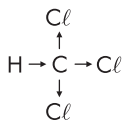
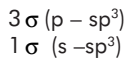


19.17) 47



$sp^3 \Rightarrow 4\sigma$  - tetraédrica (espacial)



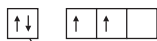


$\mu_R \neq 0$

{ moléc. polar  
pouco solúvel em  $H_2O$

19.18) 47

01. **Correto.**  
02. **Correto.**

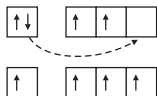


04. **Correto.**

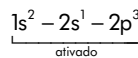


$sp^3$   
 $4\sigma$

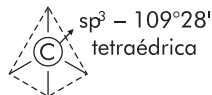
08. **Correto.**



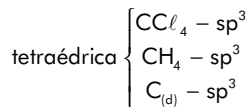
16. **Incorreto.**



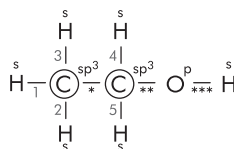
32. **Correto.**



19.19) B



19.20) C



5  $\sigma$  (s -  $sp^3$ )

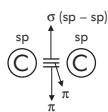
\* 1  $\sigma$  ( $sp^3 - sp^3$ )

\*\* 1  $\sigma$  (p -  $sp^3$ )

\*\*\* 1  $\sigma$  (s - p)

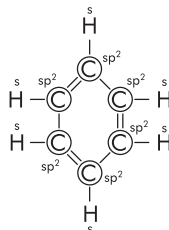
## Aula 20

20.01) B



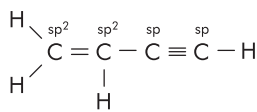
{ C(sp)  
 $\sigma$ (sp - sp)  
 $2\pi$

20.02) 27



{ 6 carbonos  $sp^2$  (planares)  
 $sp^2 \Rightarrow 120^\circ$  (planar)  
 $\pi$  (orbital p puro) está em ressonância.  
 $\pi$  (orbital p puro  $\Leftrightarrow$  nuvem)

20.03) C



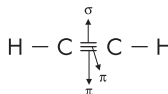
20.04) 53

{ etino  $\Rightarrow H - C \equiv C - H$   
acetileno  $\Rightarrow C_2H_2$

01. **Correta.**

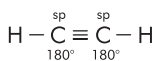
02. **Incorreta.**

04. **Correta.**



08. **Incorreta.**

16. **Correta.**

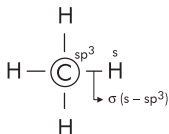


32. **Correta.**

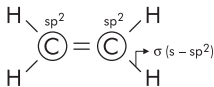
64. **Incorreta.**

20.05) 88

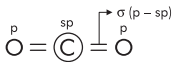
01. **Incorreta.**



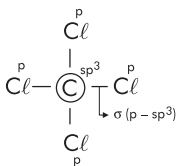
02. **Incorreta.**



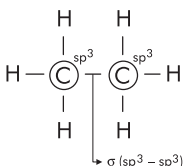
04. **Incorreta.**



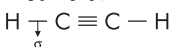
08. **Correta.**



16. **Correta.**



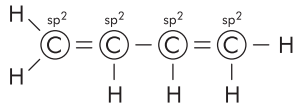
32. **Incorreta.**



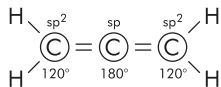
64. **Correta.**



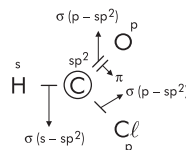
20.06) A



20.07) 38

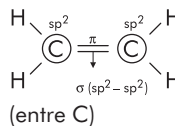


20.08) A

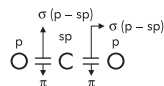
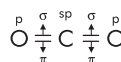


20.09) C

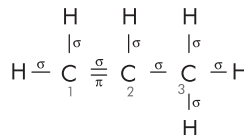
etileno (eteno)



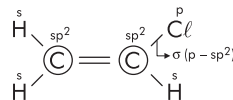
20.10) E



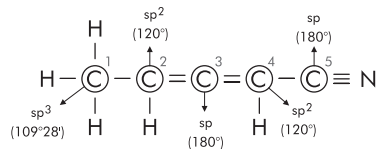
20.11) C



20.12) E

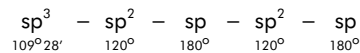


20.13) D

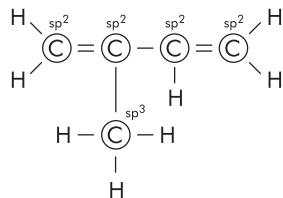
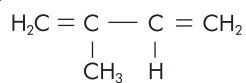


20.14) C

A resposta está na questão 20.13:

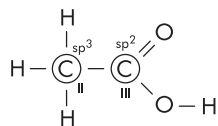
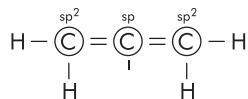


20.15) A



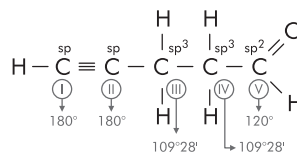
{ 4 carbonos hibridizados  $\Rightarrow$   $sp^2$   
1 carbono hibridizado  $\Rightarrow$   $sp^3$

20.16) E

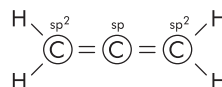


C (I) =  $sp$   
C (II) =  $sp^3$   
C (III) =  $sp^2$

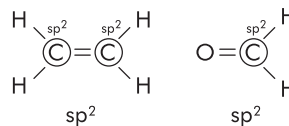
20.17) B



20.18) A



20.19) B



20.20) E

