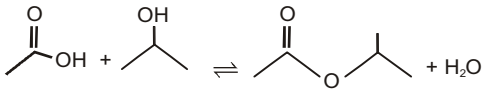
3ª Série / Vestibular

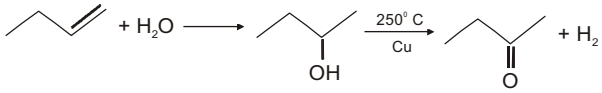
GABARITO COMENTADO

QUÍMICA

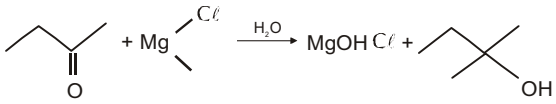
21. Letra B.

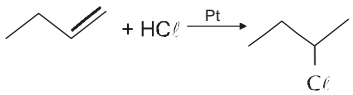


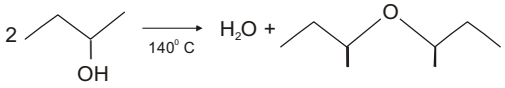
22. Letra C.

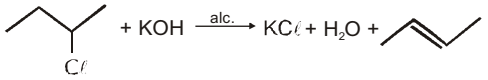


23. Letra B.

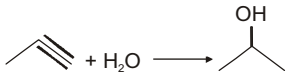
(A) 

(C) 

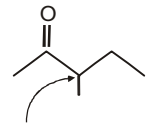
(D) 

(E) 

24. Letra E.

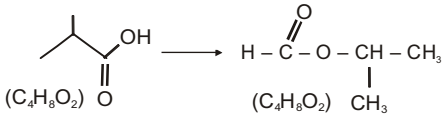


25. Letra D.



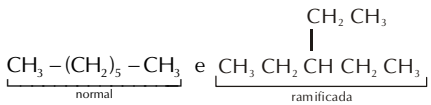
carbono quiral

26. Letra A.

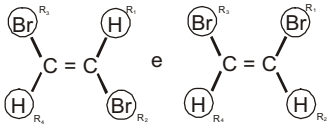


27. Letra B.

1 – Isomeria plana de cadeia



2 – Isomeria geométrica (cis – trans)



$R_1 \neq R_2$ $\quad R_1 \neq R_2$

$R_3 \neq R_4$ $\quad R_3 \neq R_4$

3 – $\underbrace{CH_3\,(CH_2)_2\,CH_3}_{\text{F. molecular} = C_4H_{10}}$ e $\underbrace{CH_3\,CH = CH\,CH_3}_{\text{F. molecular} = C_4H_8}$

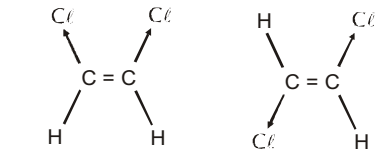
Fórmulas moleculares (≠)

4 – $CH_3\,CH_2\,O\,CH_2\,CH_3$ e $CH_3\,(CH_2)_2\,CH_2\,OH$

(éter) (álcool)

Isômeros Funcionais

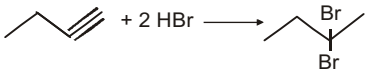
28. Letra A.



cis (polar) trans (apolar)

maior P. E. (60° C)

29. Letra A.



30. Letra A.

I – Certo: IV → $C_4H_{11}N$

Butilamina: $C_4H_{11}N$

II – Errado → 1,3-dicloropropano

III – Errado → éter assimétrico

IV – Errado → é uma amina

V – Errado → N-isopropil N-isopentil butanamida

31. Letra A.

E^0 oxid do hidrogênio → zero (padrão)

voltímetro = + 0,44 V → E^0 oxid. ferro

Logo: oxida (Fe anodo)

reduz (H^+ catodo)

E^0 red = – 0,44 V

32. Letra A.

$NaC\ell \rightarrow Na^+ + C\ell^-$

$H_2O \rightarrow H^+ + OH$

anodo: $2\,C\ell^- - 2e^- \rightarrow C\ell_2$

catodo: $2H^+ + 2e^- \rightarrow H_2$

33. Letra A.

$$^{39}_{19}K + {}^{1}_{0}n \longrightarrow \underbrace{^{36}_{17}X}_{\text{cloro}} + {}^{4}_{2}\alpha$$

34. Letra B.

$Ag_2S \rightarrow$ catodo (red.)

$A\ell \rightarrow$ anodo (oxid.)

$$A\overset{+}{g}_2\,S + 2e^- \longrightarrow 2\,Ag^0 + S^{=}$$

35. Letra E.

$$M = {}^{m}\!/_{v} \cdot mol \;\therefore\; {}^{3,36}\!/_{1,60} = 0,056\ mol/L$$

$$Ka = M\alpha^2 \;\therefore\; 1,8 \times 10^{-5} = 0,056 \cdot \alpha^2$$

$$\alpha^2 = 3,21 \times 10^{-4} \;\therefore\; \alpha = \sqrt{3,21 \times 10^{-4}}$$

$\alpha = 1,79 \times 10^{-2}$

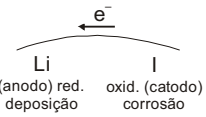
$[H^+] = 0,056 \times 1,79 \times 10^{-2}$

$[H^+] = 10^{-3}$

pH = 3

36. Letra E.

Li $\rightarrow$ maior E^0 red



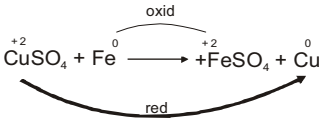
I – Falso.

II – Falso. $\Delta E = +0,54 - (-3,05) = +3,59$ V

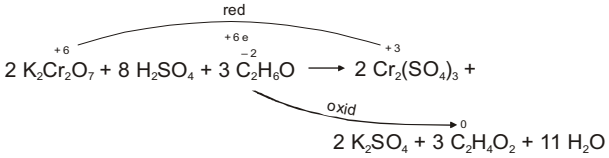
III – Correto.

IV – Correto.

37. Letra C.



38. Letra D.



$$\begin{cases} Cr_2^{+6} \xrightarrow{+6e^-} Cr_2^{+3} \\ C_2^{-2} \xrightarrow{4^2} C_2^0 \end{cases} \rightarrow \begin{cases} 2\,Cr_2 \longrightarrow 2\,Cr_2 \\ 3\,C_2 \longrightarrow 3\,C_2 \end{cases}$$

Soma: 2 + 8 + 3 + 2 + 2 + 3 + 11 = 31

O aumento da temperatura do sistema indica liberação de calor durante a transformação química $\rightarrow$ exotérmica.

39. Letra D.

Houve a quebra do urânio (fissão nuclear) formando Sr e Xe.

40. Letra A.

– Após dissolvermos $NaNO_3$ em H_2O, diminui a temperatura da solução, ou seja, absorve calor ($\Delta H > 0$).

– Após dissolvermos $Ca(OH)_2$ em H_2O, aumenta a temperatura da solução, ou seja, libera calor ($\Delta H < 0$).