3ª Série / Vestibular — QUÍMICA

GABARITO COMENTADO

21. Letra B.

$$^{238}_{92}U \xrightarrow{\alpha} {}^{234}_{90}X \xrightarrow{\beta} {}^{(A)}_{91(z)}Y \quad \Rightarrow \quad ^{234}_{91}Y$$

22. Letra A.

$$100\% \xrightarrow{5\,a} 50\% \xrightarrow{5\,a} 25\% \xrightarrow{5\,a} 12{,}5\% \xrightarrow{5\,a} 6{,}25\% \xrightarrow{5\,a} 3{,}125\%$$

25 anos

23. Letra E.

$$^{27}_{13}A\ell + {}^{4}_{2}\alpha \longrightarrow {}^{31}_{15}P + \underbrace{{}^{0}_{0}X}_{\text{gama}}$$

24. Letra C.

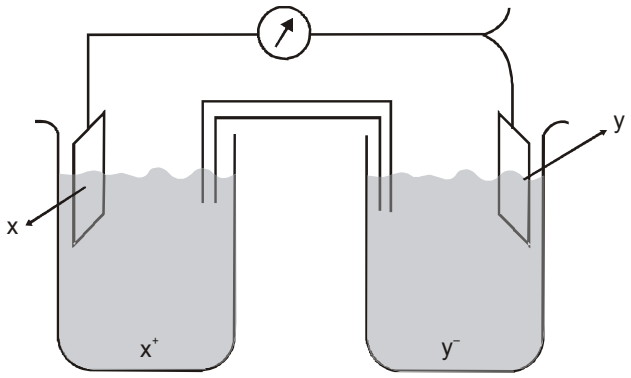
$$1600\text{ g} \xrightarrow{6\,h} 800\text{ g} \xrightarrow{6\,h} 400\text{ g} \xrightarrow{6\,h} 200\text{ g} \xrightarrow{6\,h} 100\text{ g}$$

24 h

25. Letra E.

$$^{238}_{92}U \xrightarrow{^{1}_{0}n} {}^{239}_{92}U$$

26. Letra E.



anodo (–) oxid. — catodo (+) red

27. Letra D.

$$\begin{cases}\text{anodo (–): oxidação (perde } e^-)\\ \text{catodo (+): redução (ganha } e^-)\end{cases}$$

28. Letra A.

$$Cu^0 + Fe^{+3} \longrightarrow Cu^{++} + Fe^{+2}$$

red (Cu⁰ → Cu⁺⁺); oxid (Fe⁺³ → Fe⁺²)

29. Letra E.

$$A\ell + Hg^{++} \longrightarrow A\ell^{+3} + Hg$$

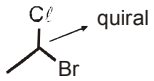
catodo: red ($Hg^{++} \rightarrow Hg$); anodo: oxid ($A\ell \rightarrow A\ell^{+3}$)

$\Delta E = 1{,}66 - (-85)$ $\qquad \Delta E = +2{,}51$ V

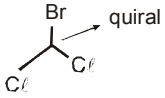
30. Letra B.

$$^{1}_{1}H + \underbrace{{}^{1}_{0}X}_{\text{nêutron}} \longrightarrow {}^{2}_{1}H$$

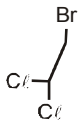
31. Letra D.

I – 

II – 

III – 

IV – 

V – 

32. Letra E.

Isóloga → varia de H_2 (mesma função)

$$C_4H_{10} \underset{H_2}{\frown} C_4H_8 \underset{H_2}{\frown} C_4H_6 \underset{H_2}{\frown} C_4H_4$$

33. Letra E.

I – função (álcool e éter)
II – posição (orto e meta)
III – cadeia (normal e ramificada)

34. Letra C.

$$\underbrace{X}_{0{,}1\text{ mol}} + \underbrace{O_2}_{19{,}2\text{ g}} \longrightarrow \underbrace{CO_2}_{8{,}96\text{ L}} + \underbrace{H_2O}_{3\times10^{23}\text{ moléculas}}$$

↓

1 mol → 192 g — 89,6 L — 30×10^{23} moléculas

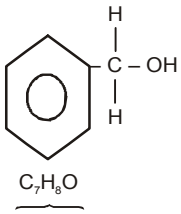
↓ — ↓ — ↓

$\underbrace{C_4H_{10}O}$ $\quad \frac{192}{32}$ $\quad \begin{cases}1\text{ mol} \text{ — } 22{,}4\text{ L}\\ x \text{ — } 89{,}6\text{ L}\end{cases}$ $\quad \begin{cases}1\text{ mol} \text{ — } 6\times10^{23}\\ y \text{ — } 30\times10^{23}\end{cases}$

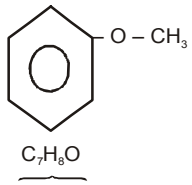
↑ 6 — x = 4 mols — y = 5 mols

$$X + 6\,O_2 \rightarrow 4\,CO_2 + 5\,H_2O$$

35. Letra A.

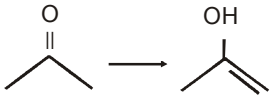


C_7H_8O



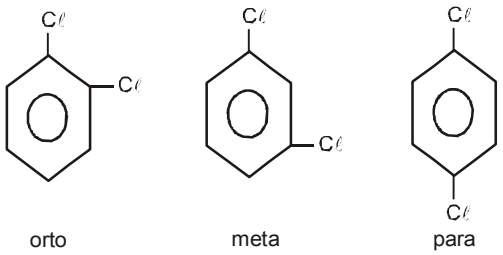
C_7H_8O

36. Letra B.



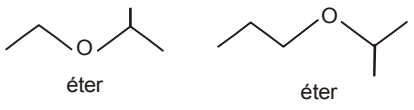
cetona — enol

37. Letra B.



orto meta para

38. Letra D.

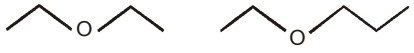


éter éter

$C_5H_{12}O$ $C_6H_{14}O$

CH_2

39. Letra A.



$C_4H_{10}O \rightarrow C_5H_{12}O$

40. Letra C.

PV = nRT

0,5 . 24,6 = 29/mol . 0.082 . 300

$12,3 = \frac{713,4}{mol}$ mol = 58 g (metil propano: $\underbrace{C_4H_{10}}_{mol=48+10=58\ g}$)