Química E – Extensivo – V. 8

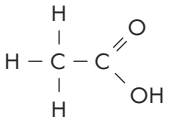
Resolva

Aula 29

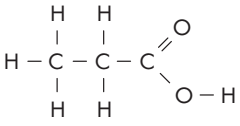
29.01) E

alceno $\xrightarrow[\text{enérgica}]{[O]}$ ácido acético e ácido propanóico

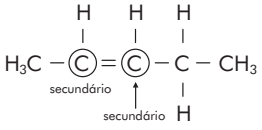
ácido acético



ácido propanóico



U



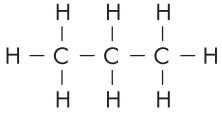
penteno-2

Aula 30

30.01) $C \equiv C - H \xrightarrow[\text{redução}]{H_2} ?$

$C \overset{\pi}{\underset{\pi}{\equiv}} C - H \xrightarrow[\text{parcial}]{H_2} C = C - C$

propino — propeno

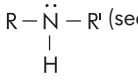
$C \overset{\pi}{\underset{\pi}{\equiv}} C - H \xrightarrow[\text{total}]{H_2}$ 

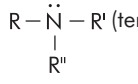
propeno — propano

Aula 31

31.01) Método Hofmann

$:NH_3 + Rx \xrightarrow{-Hx} R - \ddot{N}H_2$ (primária)

$RNH_2 + R'x \xrightarrow{-Hx}$  (secundária)

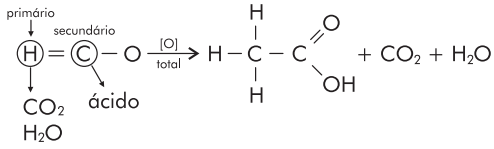
$R_2NH + R''x \xrightarrow{-Hx}$ 

(terciária)

Testes

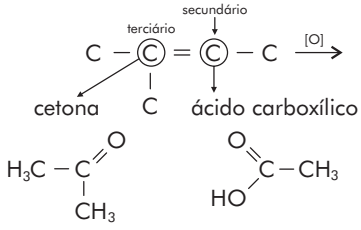
Aula 29

29.01) A

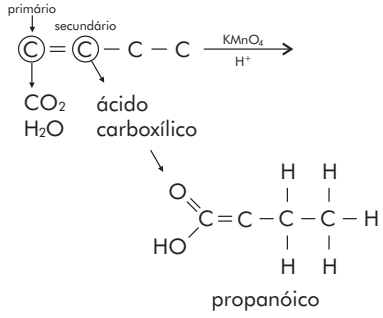


29.02) E

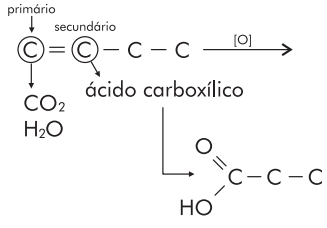
2-metil-2-buteno



29.03) D

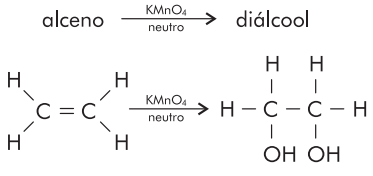


29.04) B

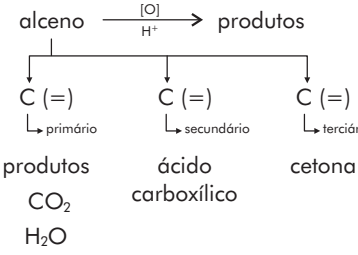


29.05) D

alceno (alqueno)

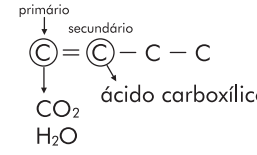


29.06) A

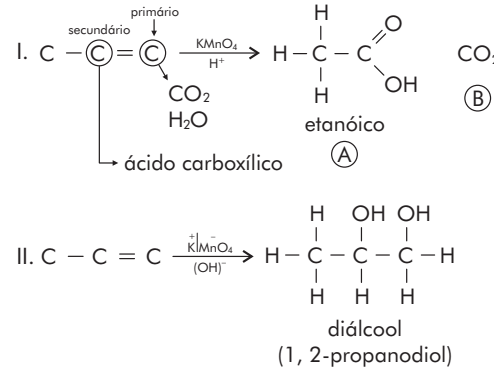


29.07) C

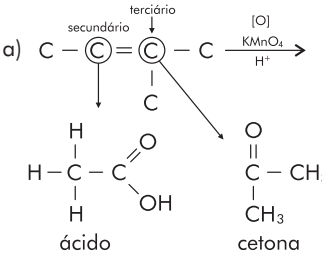
I. **Incorreta**.
II. **Incorreta**.
III. **Correta**.

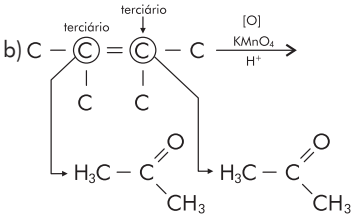


29.08) B

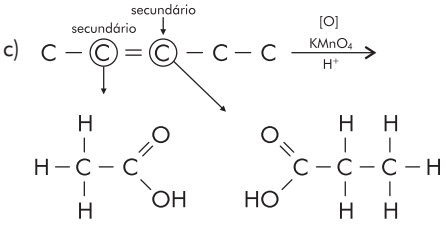


29.09) a)



b) 

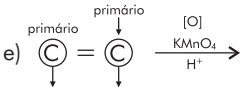
cetona cetona

c) 

ácido carboxílico ácido carboxílico

d) $H_3C - CH = CH_2 + [O] \xrightarrow[OH^-]{KMnO_4}$

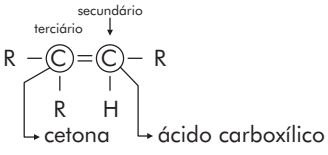
$H_3C - \underset{OH}{CH} - \underset{OH}{CH_2}$ Diálcool

e) 

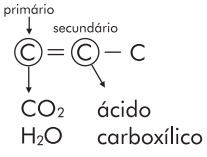
CO_2 CO_2
H_2O H_2O

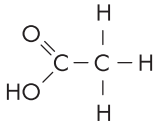
$CO_2 \Rightarrow$ óxido

29.10) B



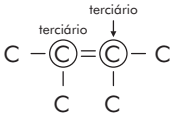
29.11) A





29.12) a) $H_3C - \underset{\underset{O}{\|}}{C} - CH_3 + H_3C - \underset{\underset{O}{\|}}{C} - CH_3$

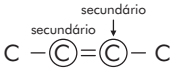
U



dimetil-2-buteno

b) $H_3C - \overset{\overset{O}{\|}}{C} - OH + H_3C - \overset{\overset{O}{\|}}{C} - OH$

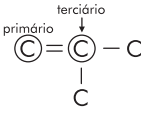
U



2-buteno

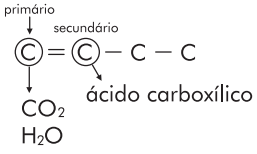
c) $H_3C + CO_2 + H_3C - \underset{\underset{O}{\|}}{C} - CH_3$

U

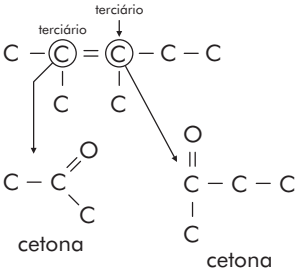


metilpropeno

29.13) B



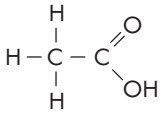
29.14) D

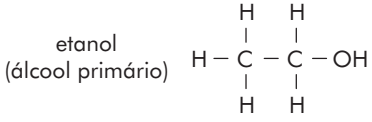


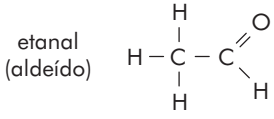
2, 3-dimetilpenteno-2

Aula 30

30.01) B







30.02) B

álcool secundário $\xrightarrow{[O]}$ cetona

30.03) B

cetona $\xrightarrow{\text{redução}}$ álcool secundário

30.04) B

álcool primário $\xrightarrow{[O]}$ aldeído $\xrightarrow{[O]}$ ácido carboxílico

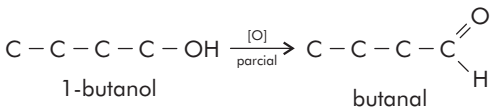
álcool secundário $\xrightarrow{[O]}$ cetona

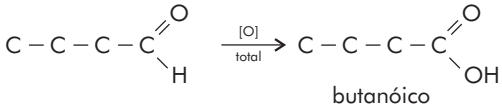
30.05) 96

mistura { etano $\xrightarrow[\text{total}]{[O]}$ Nada ocorre.
etanal $\xrightarrow[\text{total}]{[O]}$ etanóico
etanóico $\xrightarrow[\text{total}]{[O]}$ Nada ocorre.

etano + etanóico + etanóico

30.06) C

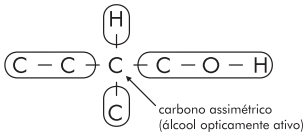




30.07) A

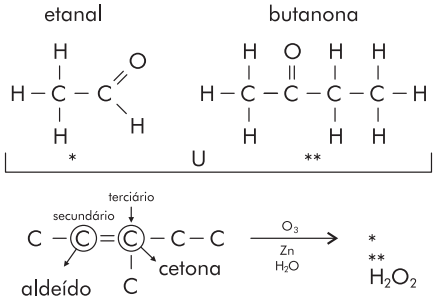
$C_5H_{12}O \xrightarrow[\text{total}]{[O]}$ ácido carboxílico

álcool primário



2-metil-1-butanol

30.08) E



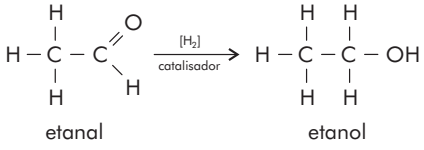
30.09) C

álcool primário $\underset{[H_2]}{\overset{[O]}{\rightleftharpoons}}$ aldeído $\underset{[H_2]}{\overset{[O]}{\rightleftharpoons}}$ ácido carboxílico

$[H_2]$ = red.

álcool secundário $\underset{[H_2]}{\overset{[O]}{\rightleftharpoons}}$ cetona

30.10) C

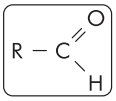


30.11) 26

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

$\underbrace{C_xH_y}_{\text{hidrocarboneto}} + O_2 \longrightarrow CO_2 + H_2O$

04. **Falsa**.
08. **Verdadeira**.

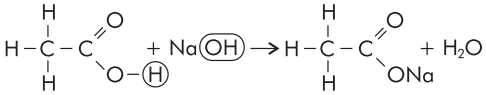
aldeído  mais reativo

ponta

cetona 

meio de carbonos

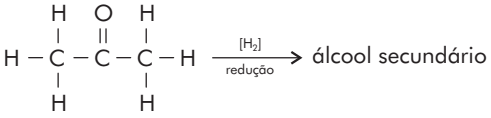
16. **Verdadeira**.



etanal sal

32. **Falsa**.

30.12) A



propanona

30.13) A

álcool primário $\underset{red.}{\overset{ox.}{\rightleftharpoons}}$ aldeído $\underset{red.}{\overset{ox.}{\rightleftharpoons}}$ ácido carboxílico

álcool secundário $\underset{red.}{\overset{ox.}{\rightleftharpoons}}$ cetona

30.14) 12

ácido etanóico

$\begin{cases} \text{aldeído} \xrightarrow{[O]} \text{ácido etanóico} \\ \text{álcool primário} \xrightarrow[\text{total}]{[O]} \text{ácido etanóico} \end{cases}$

30.15) B

propanona $\underset{red.}{\overset{H_2}{\rightleftharpoons}}$ 2-propanol

cetona álcool secundário

30.16) C

álcool etílico (álcool primário)

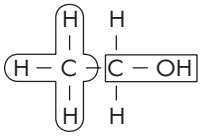
álcool primário $\underset{red.}{\overset{ox.}{\rightleftharpoons}}$ aldeído $\underset{red.}{\overset{ox.}{\rightleftharpoons}}$ ácido carboxílico

etanol $\underset{red.}{\overset{ox.}{\rightleftharpoons}}$ etanal $\underset{red.}{\overset{ox.}{\rightleftharpoons}}$ etanóico

álcool etílico aldeído acético ácido acético

30.17) 28

etanol $\underset{red.}{\overset{ox.}{\rightleftharpoons}}$ etanal $\underset{red.}{\overset{ox.}{\rightleftharpoons}}$ etanóico



etanol
álcool etílico
metilcarbinol

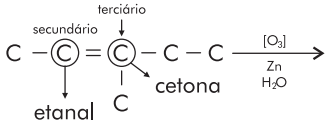
30.18) C

etanol $\xrightarrow{ox.}$ etanal $\xrightarrow{ox.}$ etanóico

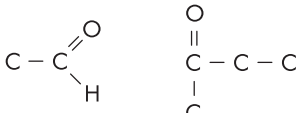
(vinho) ácido acético

30.19) D

álcool primário $\xrightarrow[\text{total}]{[O]}$ ácido carboxílico

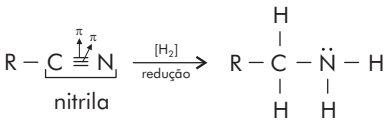
30.20) 

etanal cetona



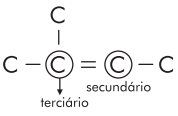
etanal butanona

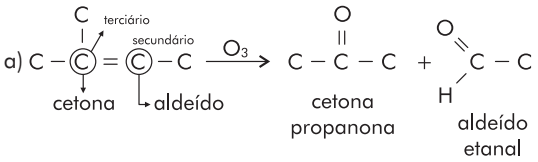
30.21) A



nitrila amina primária

Obs.: Ligação π se rompe.

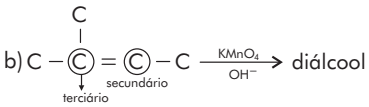
30.22) 

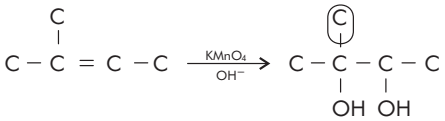
a) 

cetona aldeído

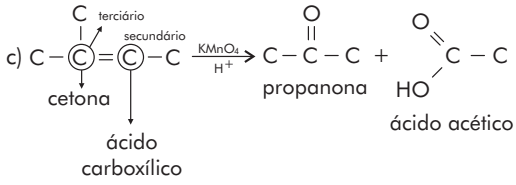
cetona propanona

aldeído etanal

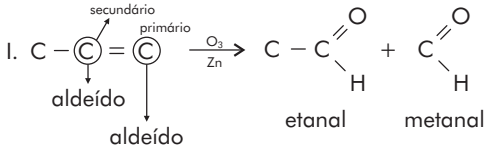
b)  diálcool

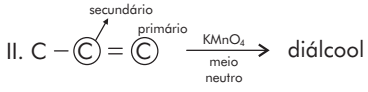


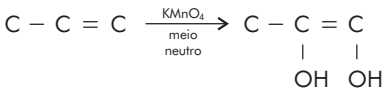
2-metil-2, 3-butanodiol



30.23) B

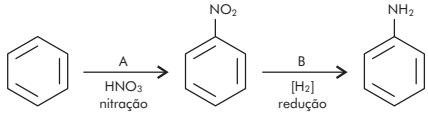






propanodiol-1, 2

30.24) B



30.25) E

álcool terciário $\underset{red.}{\overset{ox.}{\rightleftharpoons}}$ Nada ocorre.

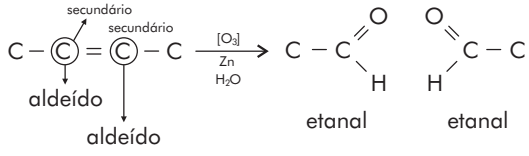
30.26) A

C_nH_{2n} ⟨ alceno / ciclano

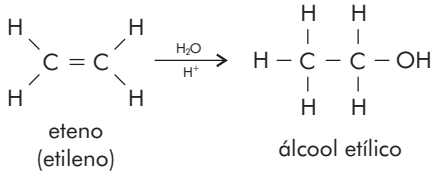
composto C_nH_{2n}

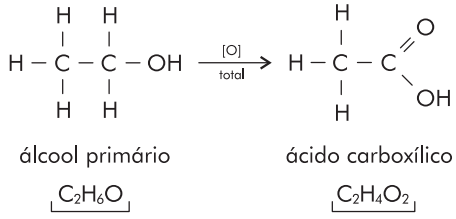
⟨ I. Teste de Baeyer positivo.
II. Ozonólise produz um único aldeído.

Alceno



30.27) D

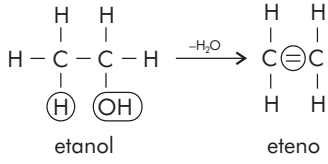


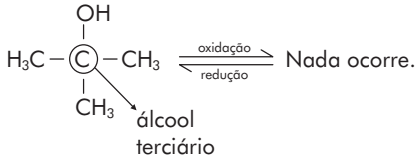


C_2H_6O $C_2H_4O_2$

30.28) B

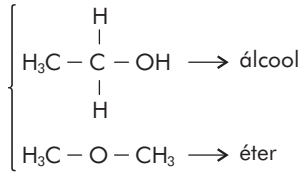
álcool primário (mais ácido) $\xrightarrow[ZnC\ell_2]{HC\ell}$ Não reage.

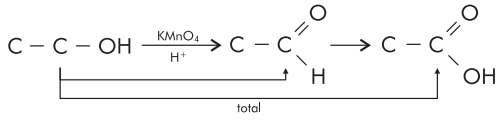


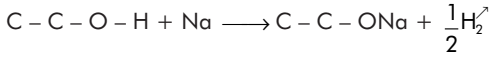


30.29) B

C_2H_6O ⟨ álcool / éter







Aula 31

31.01) B

éster + H_2O ⟶ ácido + álcool

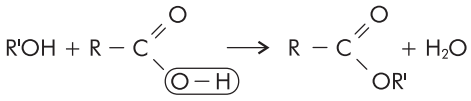
éster + H_2O ⟶ A + B

31.02) A

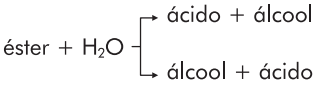
ácido + álcool ⟶ éster + H_2O

esterificação

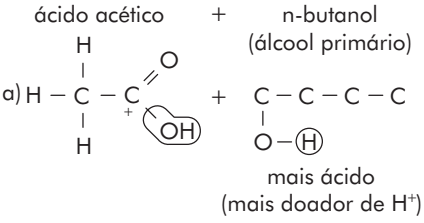
31.03) B

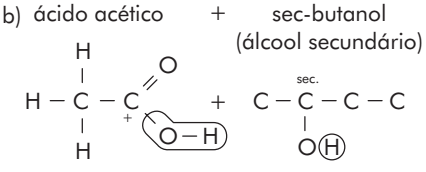


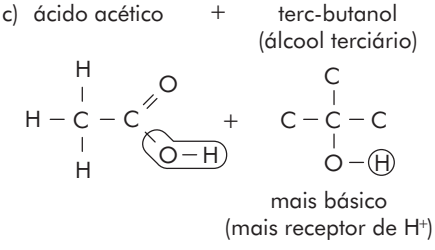
31.04) 42



31.05) A



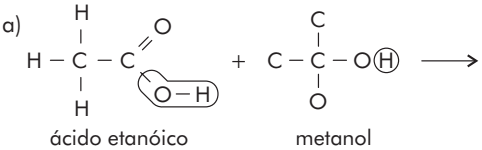


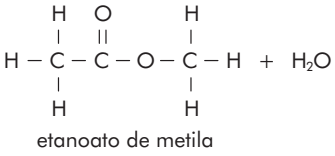


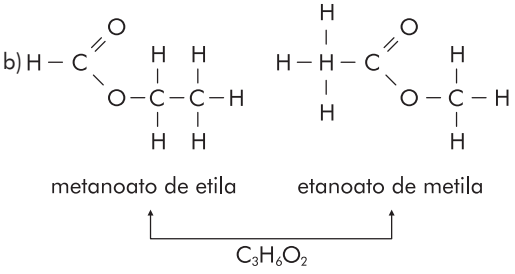
álcool primário > álcool secundário > álcool terciário

31.06) etanoato de metila

(ácido / álcool)



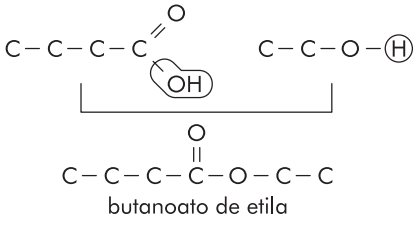




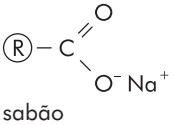
31.07) A

butanoato de etila

(ácido butanóico / álcool etanol)



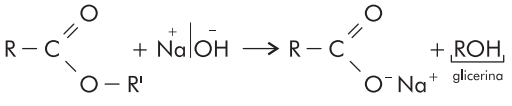
31.08) D



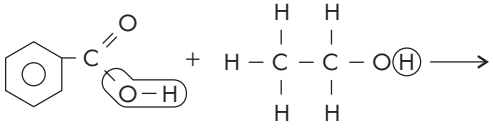
sabão

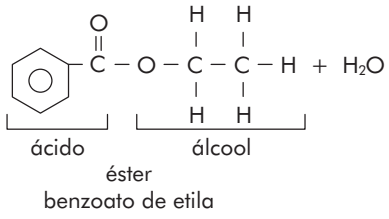
R → elevado número de carbonos (radical)

31.09) A



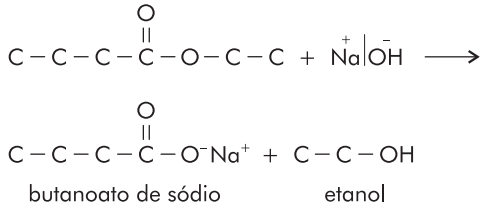
31.10) C





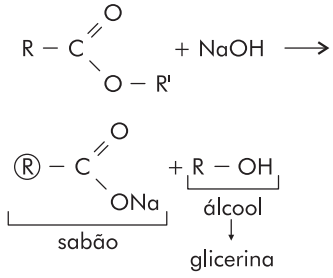
benzoato de etila

31.11) B

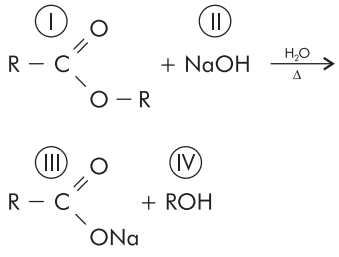


butanoato de sódio etanol

31.12) A

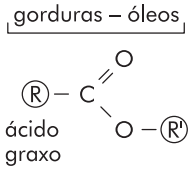


31.13) 63



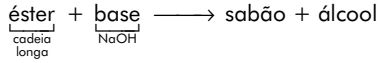
01. **Verdadeira**.
02. **Verdadeira**. NaOH (base inorgânica forte)
04. **Verdadeira**.
08. **Verdadeira**.
16. **Verdadeira**.
32. **Verdadeira**.
64. **Falsa**. ácido + álcool $\rightleftharpoons$ éster + H_2O

31.14) D

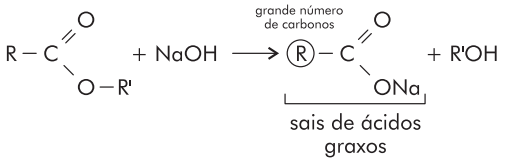


ésteres derivados de álcoois com número de carbono variável.

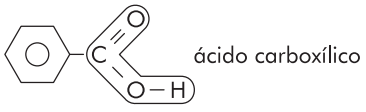
31.15) B



31.16) E

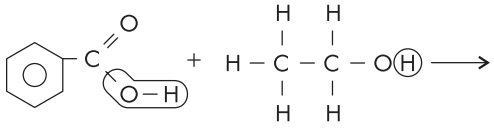


31.17) 22

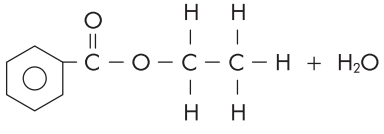


ácido carboxílico $\xrightarrow[\text{total}]{\text{red.}}$ álcool primário

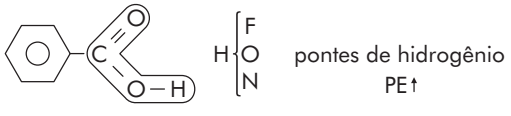
ácido carboxílico $\xrightarrow[\text{total}]{\text{red.}}$ álcool aromático (primário)



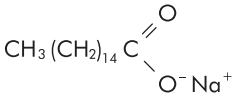
ácido carboxílico álcool



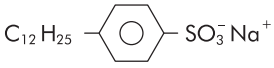
benzoato de etila



31.18) 45

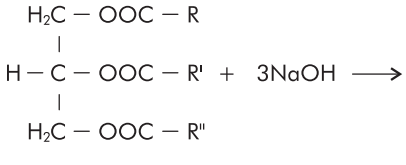


sabão



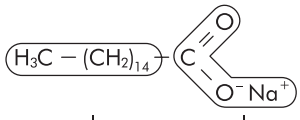
detergente

01. **Verdadeira**.



glicerol

02. **Falsa**.



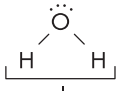
apolar apolar

04. **Verdadeira**.

sabão
detergente
cadeia normal (biodegradável)

08. **Verdadeira**. detergente → cadeia ramificada (não é biodegradável).

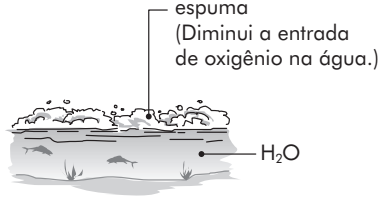
16. **Falsa**.



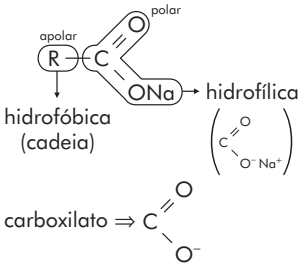
polar

Polar dissolve polar.

32. **Verdadeira**.



31.19) A



carboxilato

Ca, Mg (H_2O dura) sais insolúveis
ppt ↓

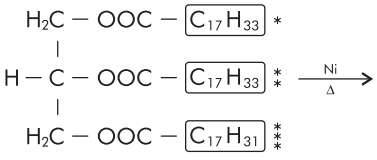
Obs.: precipitado (ppt)

31.20) B

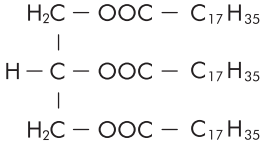
- $NaHCO_3$ (sal)
- óleo vegetal
- H_2O

éster + base ⟶ sal + álcool
saponificação

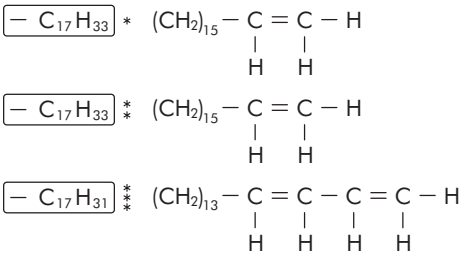
31.21) C

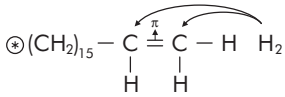


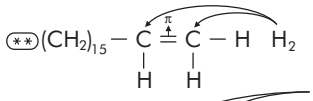
componente de um óleo

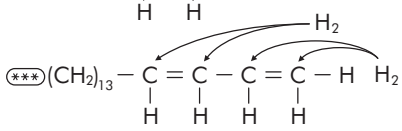


componente de uma gordura





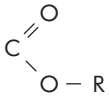


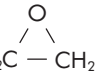


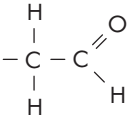
$\left\{ C \overset{\pi}{=} C \right.$ ligação (π) $\Rightarrow$ adição

31.22) D

I. **Incorreto.** $H_3C - \overset{O}{\overset{\|}{C}} - CH_3$ cetona

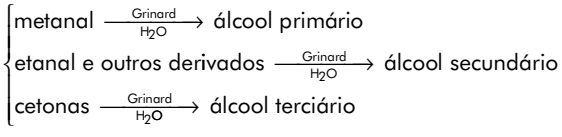
II. **Incorreto.**  éster

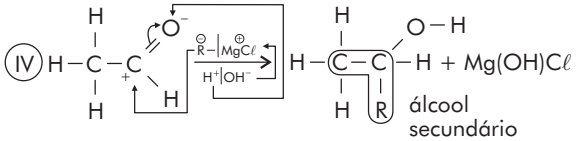
III. **Incorreto.**  éter

IV. **Correto.**  aldeído ≠ metanal

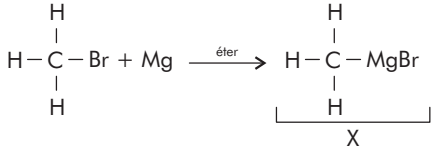
aldeído ≠ metanal

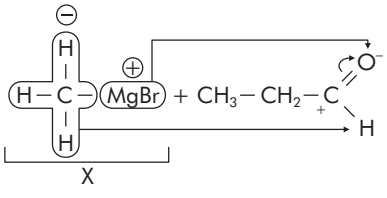
Esquema:

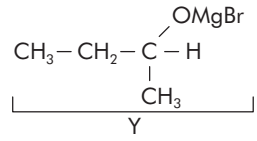


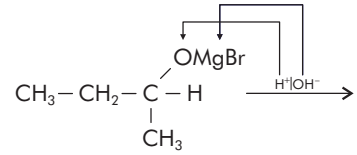


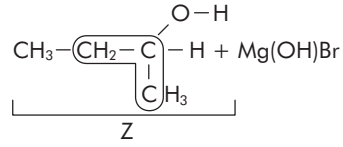
31.23) E



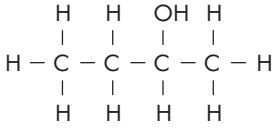






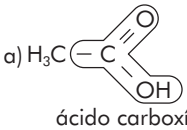


álcool secundário

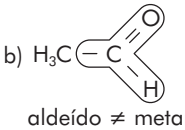


2-butanol

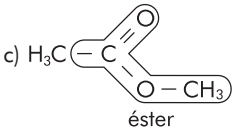
31.24) B

a) 

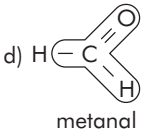
ácido carboxílico

b) 

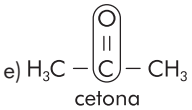
aldeído ≠ metanal

c) 

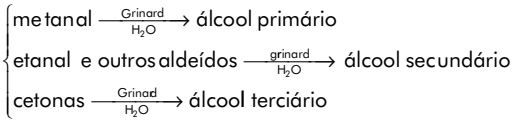
éster

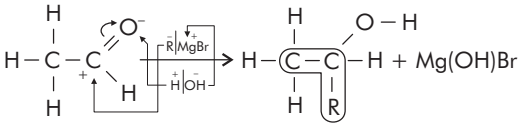
d) 

metanal

e) 

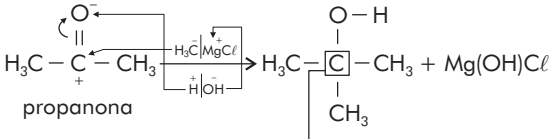
cetona





álcool secundário

31.25) E



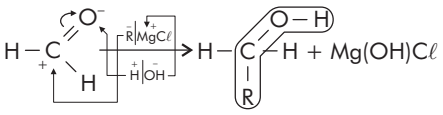
propanona

álcool terciário
terc-butanol

31.26) D

álcool primário = ?

Usar composto de Grinard.



álcool primário

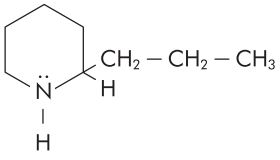
31.27) A

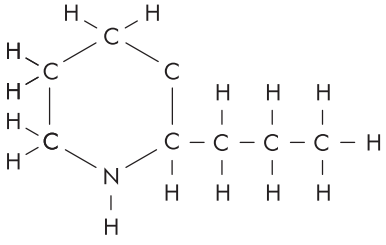
$H_3N: + H_3C - CH_2 - Br \longrightarrow H_3C - CH_2 - NH_2 + HBr$

alquilação do amoníaco
(reação de Hofmann)

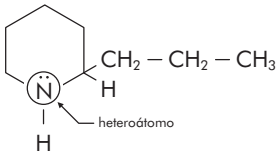
Aula 32

32.01) 25

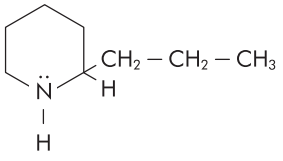




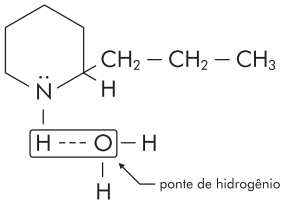
$C_8H_{17}N \Rightarrow C_8H_{17}N$ (12, 1, 14) → (96, 17, 14) → 127 g/mol



composto nitrogenado heterocíclico



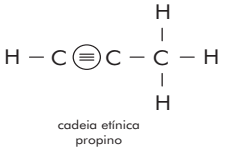
amina secundária



32.02) 35

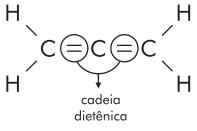
Alcino (3C)

C_nH_{2n-2}



Alcadieno (3C)

C_nH_{2n-2}

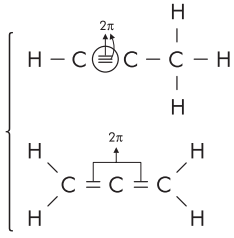


01. **Correta.** $C_3H_{\textcircled{4}}$

02. **Correta.**

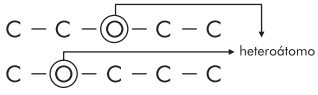
isômeros C_3H_4 { etínica (=) / dietênica (==)

04. **Incorreta.**

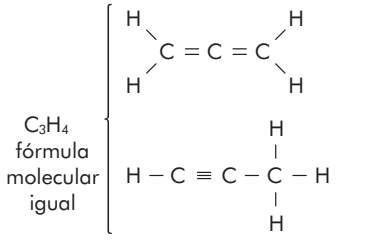


08. **Incorreta.** Ambos são hidrocarbonetos (C_xH_y).

16. **Incorreta.** Isômeros de compensação (metameria).



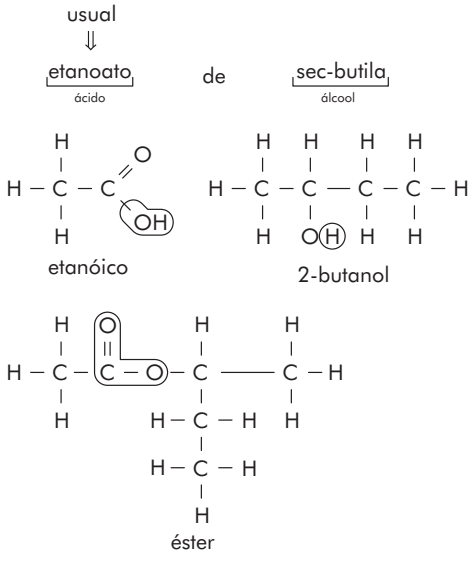
32. **Correta.**



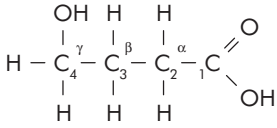
fórmula estrutural diferente

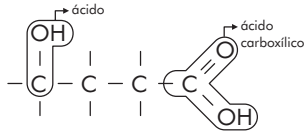
32.03) 16

Acetato de sec-butila

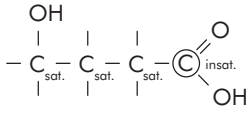


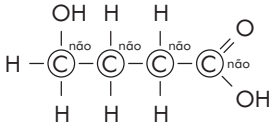
32.04) 28





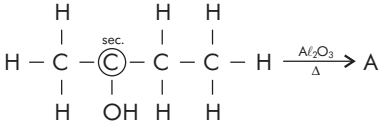
{ 4-hidroxibutanóico / γ (gama)-hidroxibutanóico





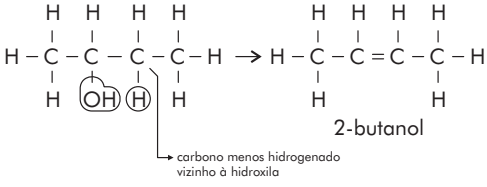
Não é carbono assimétrico.

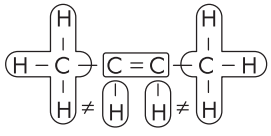
32.05) 54



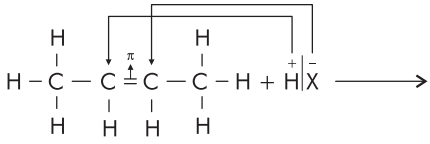
2-butanol

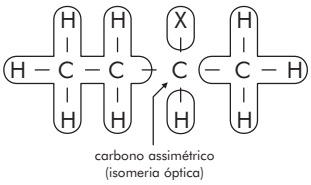
$A + HX \longrightarrow B$



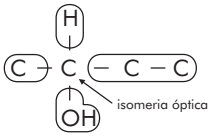


⇒ isometria geométrica ou cis-trans



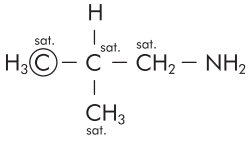


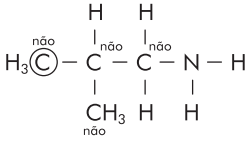
composto B



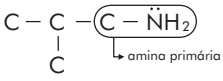
2-butanol

32.06) 78

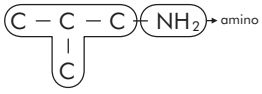




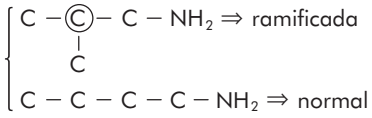
Não é carbono assimétrico.



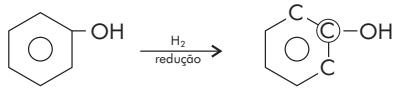
radical alcoíla ou alquila



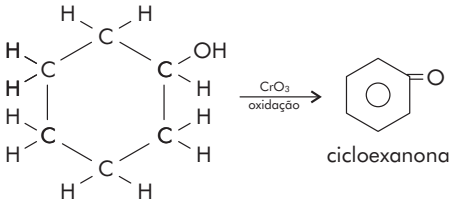
isômero de cadeia



32.07) 03



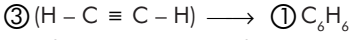
fenol álcool secundário



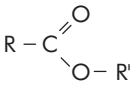
cicloexanol cicloexanona

32.08) 42

01. **Incorreta.**



02. **Correta.**

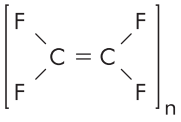


ésteres de ácido carboxílicos (= insaturados) óleos

04. **Incorreta.**

- PVC – artificial
- sacarose – natural
- poliéster – artificial

08. **Correta.**

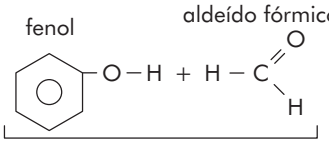


teflon
politetrafluoretileno

16. **Incorreta.** Vulcanização ⇒ reação do látex natural com quantidades controladas de enxofre (S).

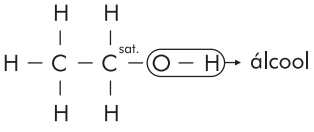
32. **Correta.**

baquelite ⇒ condensação

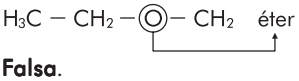


32.09) 48

01. **Falsa.**



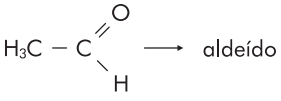
02. **Falsa.**



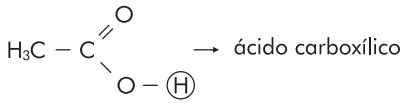
04. **Falsa.**

CH_4 → hidrocarboneto

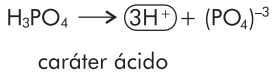
08. **Falsa.**



16. **Verdadeira.**

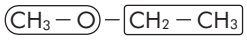


32. **Verdadeira.**



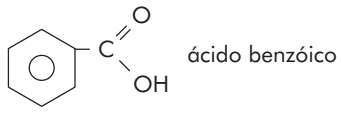
32.10) 92

01. **Incorreta.**

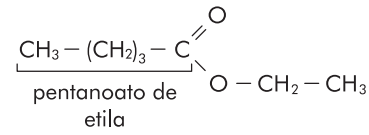


02. **Incorreta.**

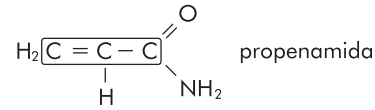
04. **Correta.**



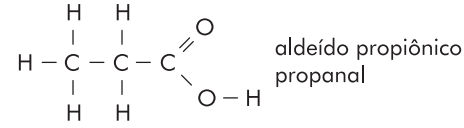
08. **Correta.**



16. **Correta.**



32. **Incorreta.**



64. **Correta.**