

ΕΠΑΝΑΛΗΠΤΙΚΑ ΘΕΜΑΤΑ Ο.Ε.Φ.Ε. 2003

ΘΕΜΑΤΑ ΧΗΜΕΙΑΣ Γ' ΛΥΚΕΙΟΥ ΘΕΤΙΚΗΣ ΚΑΤΕΥΘΥΝΣΗΣ ΑΠΑΝΤΗΣΕΙΣ

Θέμα 1^ο

A.

1. δ 2. β 3. δ

B.

Άρα $1s^2 2s^2 2p^3$ (:X)

1. VA ομάδα $Z = 7$
2. Η εξωτερική στιβάδα ... $2s^2 2p^3$ συνεπώς όλες οι δυνατές τετράδες (n, ℓ, m_ℓ, m_s)
3. $Mg < Be < X$
4. $3Mg^{+2} + 2X^{-3} \rightarrow 3Mg^{+2}, 2X^{-3}$

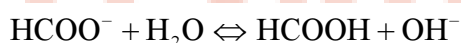
Γ.

1. γ 2. δ 3. α

Θέμα 2^ο

A.

1. α) ο ηλεκτρολύτης είναι το $HCOOK$



2. το α

B.

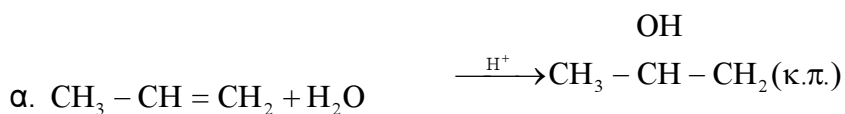
1. στο α

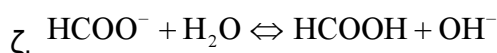
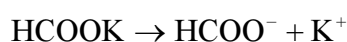
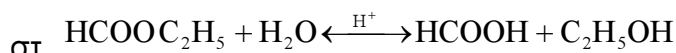
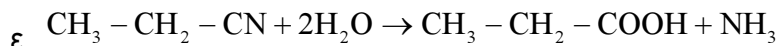
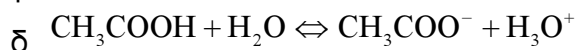
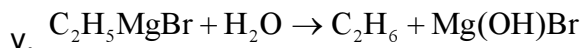
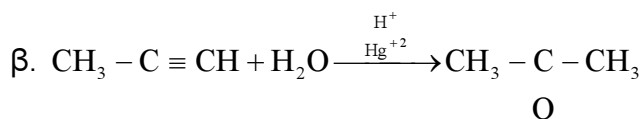


2. $H - C_{(1)} - C_{(2)} \equiv C_{(3)} - C_{(4)} = 0 \begin{array}{l} 8\sigma \\ 3\pi \end{array}$



- 3.

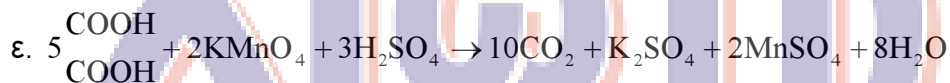
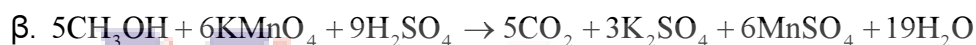
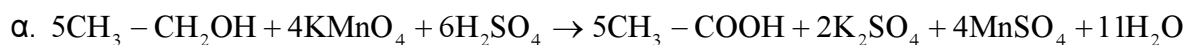




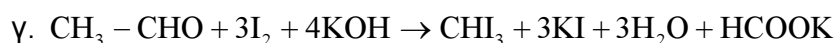
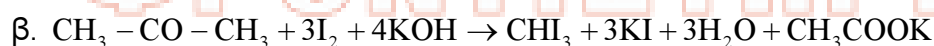
Θέμα 3^ο

A.

1.

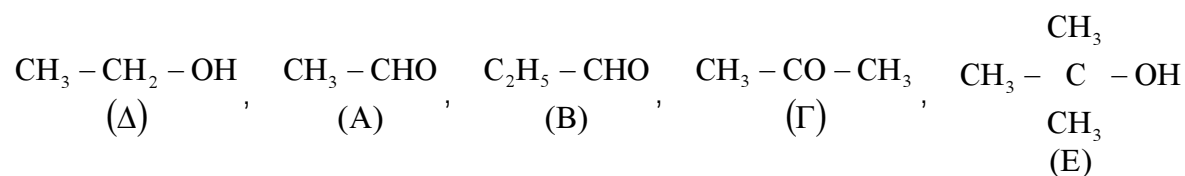


2.

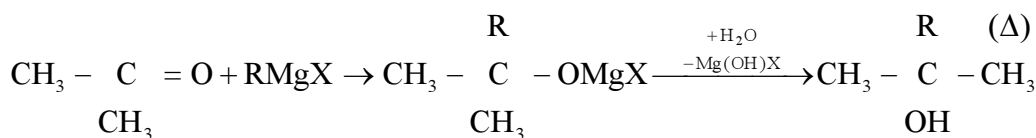
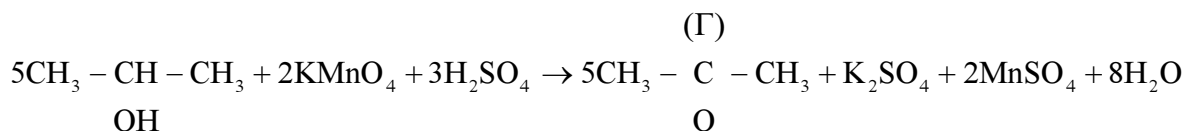
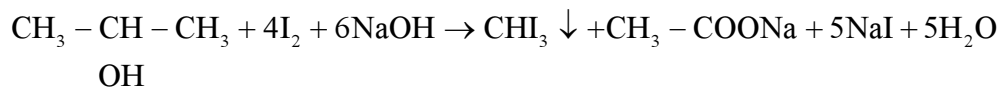
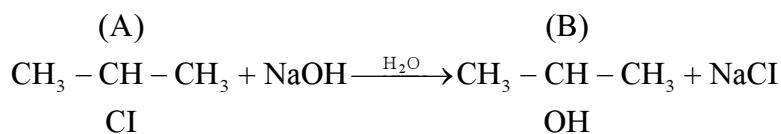


B.

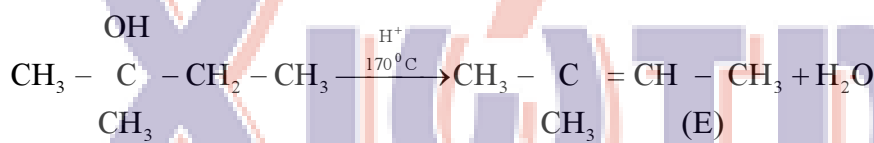
	A	B	Γ	Δ	E
I ₂ / NaOH	+	-	+	+	-
KMnO ₄ / H ⁺	+	+	-	+	-
Na	-	-	-	+	+
Tollens	+	+	-	-	-



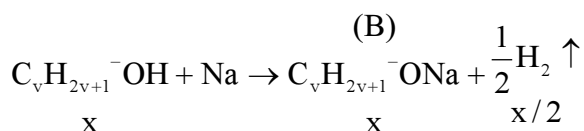
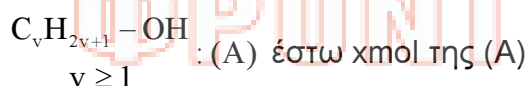
Γ.



$$v + 3 = 5 \rightarrow v = 2 \quad \text{R} : \text{C}_2\text{H}_5 -$$



Θέμα 4^ο

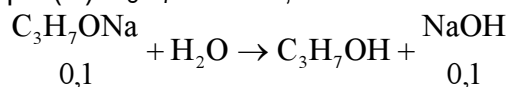


$$\frac{x}{2} \cdot 22,4 = 1,12 \rightarrow x = 0,1 \text{ mol}$$

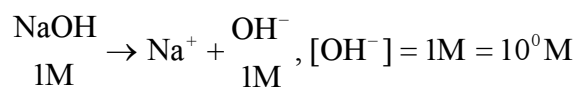
$$\alpha. \text{Mr(A)} = \frac{6}{0,1} = 60 : 60 = 14v + 18 \rightarrow 14v = 42 \rightarrow v = 3$$

$$\text{M.T. } \text{C}_3\text{H}_7\text{OH} \text{ προπανόλη } m_{\text{Na}} = 0,1 \cdot 23 = 2,3 \text{ g}$$

β. (B) $\text{C}_3\text{H}_7\text{ONa}$ 0,1 mol



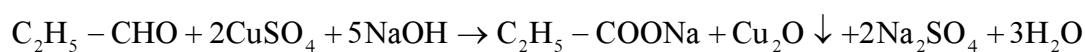
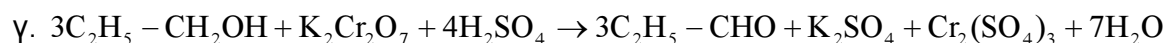
$$\text{NaOH } 0,1\text{mol ή } C = \frac{0,1}{0,1} = 1\text{M}$$



$$\text{pOH} = -\log[\text{OH}^-] = 0, \text{pH} + \text{pOH} = 14 \rightarrow \text{pH} = 14$$

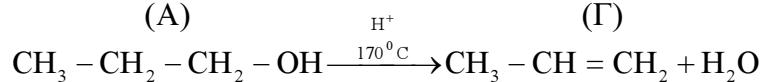
(A)

(B)

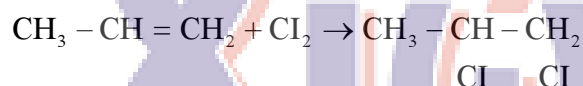


(A)

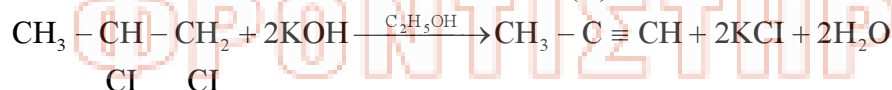
(Γ)



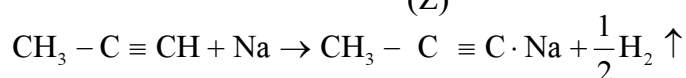
(Δ)



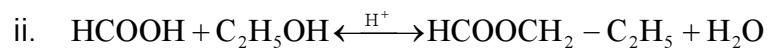
(E)



(Z)



δ.



αρχ.	0,1	0,1	-	-
αντ	ω	ω	-	-
παρ	-	-	ω	ω
Χ.Ι.	0,1 - ω	0,1 - ω	ω	ω

$$K_{c_1} = 4 = \frac{[\text{HCOOC}_3\text{H}_7] \cdot [\text{H}_2\text{O}]}{[\text{HCOOH}][\text{C}_3\text{H}_7\text{OH}]} = \frac{\frac{\omega}{\nu} \cdot \frac{\omega}{\nu}}{0,1 - \omega \cdot 0,1 - \omega} = \left(\frac{\omega}{0,1 - \omega} \right)^2 \rightarrow$$

$$\rightarrow 2^2 = \left(\frac{\omega}{0,1 - \omega} \right)^2 \rightarrow 2 = \frac{\omega}{0,1 - \omega} \rightarrow \omega = 0,06 (\text{προσέγγιση})$$

$$\alpha = \frac{0,06}{0,1} = 0,6 \text{ ή } 60\%$$

ΧΙΩΤΗΣ
ΦΡΟΝΤΙΣΤΗΡΙΑ