

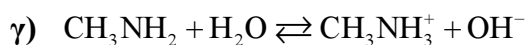
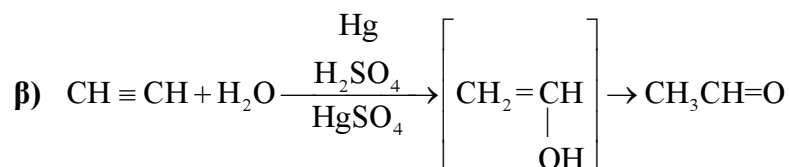
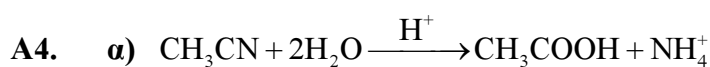
ΧΗΜΕΙΑ - ΒΙΟΧΗΜΕΙΑ
ΤΕΧΝΟΛΟΓΙΚΗΣ ΚΑΤΕΥΘΥΝΣΗΣ
(ΚΥΚΛΟΣ ΤΕΧΝΟΛΟΓΙΑΣ ΚΑΙ ΠΑΡΑΓΩΓΗΣ)
4 ΙΟΥΝΙΟΥ 2014
ΑΠΑΝΤΗΣΕΙΣ

ΘΕΜΑ Α

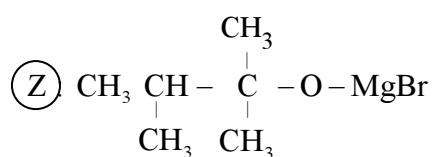
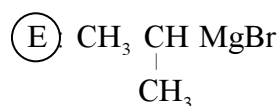
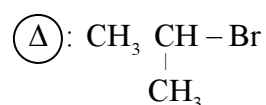
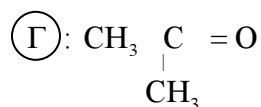
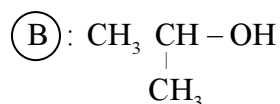
A1. γ

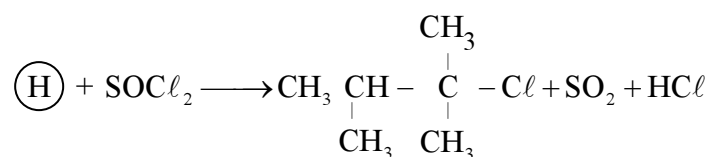
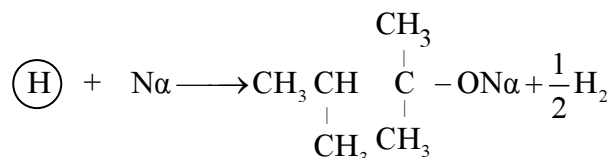
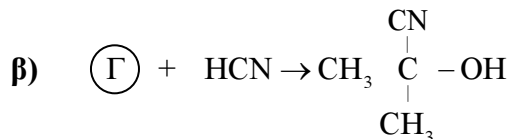
A2. δ

A3. α) → Σ, β) → Λ, γ) → Λ

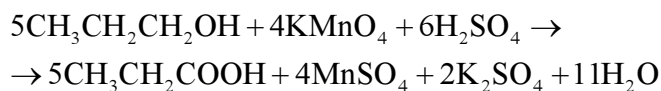
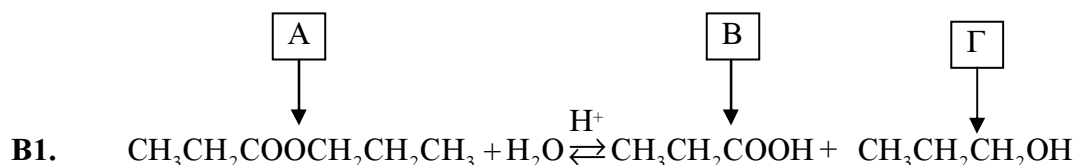


A5. α) (A): $\text{CH}_3\text{CH} = \text{CH}_2$





ΘΕΜΑ Β



B2. Ostwalol

$$[\text{H}_3\text{O}^+] = \sqrt{K_a \cdot C} \quad \dots \Rightarrow \boxed{K_a = 10^{-5}}$$



στο ισοδύναμο σημείο:

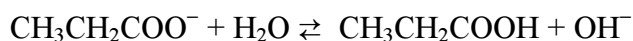
ισομοριακά διαλύματα

$$\Rightarrow \boxed{[\text{CH}_3\text{CH}_2\text{COOH}] = 0,2 \text{ M}}$$

$$[V_{\text{o}\xi} = 0,05 \text{ L}, \quad V_{\text{NaOH}} = 0,05 \text{ L} \quad C_o \cdot V_o = C_b \cdot V_o \Rightarrow C_{\text{o}\xi} = C_b]$$

Συγκεντρώσεις στο Ι.Σ.

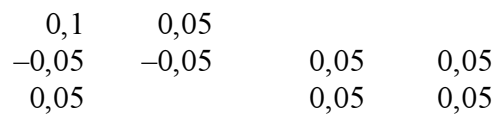
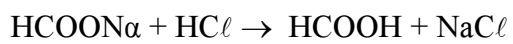
$$[\text{CH}_3\text{CH}_2\text{COONa}] = 0,1 \text{ M} \Rightarrow [\text{CH}_3\text{CH}_2\text{COO}^-] = 0,1 \text{ M}$$



$$\dots [\text{OH}^-] = \sqrt{K_b \cdot C}$$

$$[\text{OH}^-] = \sqrt{10^{-9} \cdot 0,1} \Rightarrow [\text{OH}^-] = 10^{-5} \Rightarrow \text{pOH} = 5 \Rightarrow \boxed{\text{pH} = 9}$$

B4. $[\text{HCl}] = 0,05 \text{ M}$



$$\text{P.}\Delta: [\text{H}_3\text{O}^+] = K_a \cdot \frac{0,05}{0,05}$$

$$[\text{H}_3\text{O}^+] = 10^{-4} \Rightarrow \text{pH} = 4.$$

Συγκεντρώσεις όλων των ιόντων στο τελικό P.Δ.

$$[\text{HCOO}^-] \simeq 0,05 \text{ M}$$

$$[\text{Na}^+] = 0,1 \text{ M}$$

$$[\text{Cl}^-] = 0,05 \text{ M}$$

$$[\text{H}_3\text{O}^+] = 10^{-4} \text{ M}$$

$$[\text{OH}^-] = 10^{-10} \text{ M}$$

και φυσικά για το μόριο HCOOH : $[\text{HCOOH}] \simeq 0,05 \text{ M}$