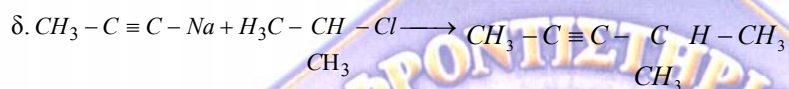
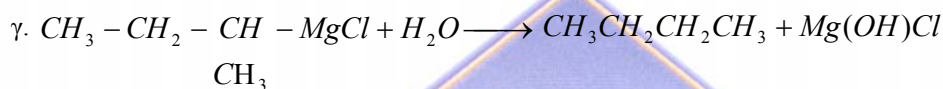
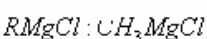
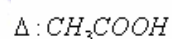
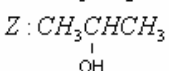
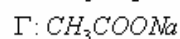
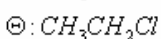
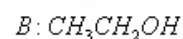
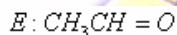


1

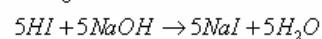
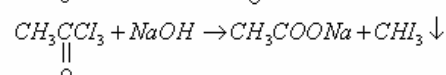
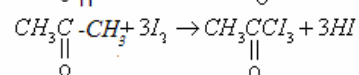
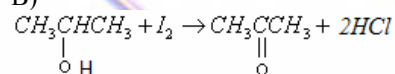


ΘΕΜΑ 3

3.1.A)

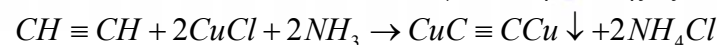


B)



3.2.

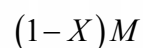
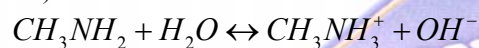
Το αλκίνιο είναι το αιθίνιο $\text{CH} \equiv \text{CH}$ γιατί το προϊόν της αλείδωνεται με δ/μα Tollens



$$n = \frac{2.6}{26} = 0.1 \text{ mole } \text{CH} \equiv \text{CH} \text{ δίνουν } 0.1 \text{ mole } \text{CuC} \equiv \text{CCu} \text{ ή } m = 0.1 \cdot 151 = 15.1 \text{ gr}$$

ΘΕΜΑ 4

4.1A)

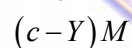
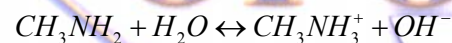


$$\text{pH} = 12 \Rightarrow \text{pOH} = 2 \Rightarrow [\text{OH}^-] = X = 10^{-2} M$$

$$\text{άρα } Kb = 10^{-4}$$

B)

$$10^{-4} = 10^8 [\text{H}_3\text{O}^+]^2 \Rightarrow [\text{H}_3\text{O}^+] = 10^{-11} \Rightarrow [\text{OH}^-] = 10^{-3}$$



$$Kb = \frac{Y^2}{c-Y} \Rightarrow c = 10^{-2} M$$

4.2.A)

$$C_1V_1 + C_2V_2 = C_{\text{τελ}}(V_1 + V_2) \quad (1)$$

$$pH = 11,5 \Rightarrow [OH^-] = 10^{-2,5}$$

$$Kb = \frac{Z}{C_{\text{τελ}} - Z} \Rightarrow C_{\text{τελ}} = 0,1M$$

$$\text{Άρα από (1): } \frac{V_1}{V_2} = \frac{1}{10}$$

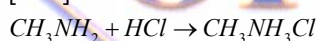
B)

$$[CH_3NH_3^+] = [OH^-] = 10^{-2,5} M$$

$$[H_3O^+] = 10^{-11,5} M$$

4.3.

$$[HCl] = C'$$



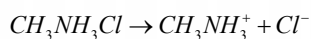
$$1M \quad C'M$$

Διερεύνηση:

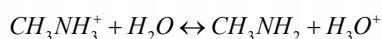
$$1 > C' :$$

απορρίπτεται γιατί $pH > 7$

$$1 = C' :$$



$$1M \quad 1M \quad 1M$$

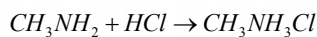


$$(1-\omega)M \quad \omega M \quad \omega M$$

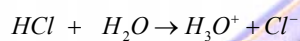
$$K_a = 10^{-10} = \frac{\omega^2}{1-\omega} \Rightarrow pH = 5 \quad \text{δεκτή}$$

οπότε $C' = 1M$, άρα $n_{HCl} = 0,1mole$

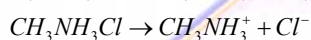
$$C' > 1:$$



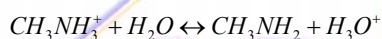
$$- \quad (C' - 1)M \quad 1M$$



$$(C' - 1)M \quad (C' - 1)M \quad (C' - 1)M$$



$$1M \quad 1M \quad 1M$$



$$(1-G)M \quad GM \quad GM$$

$$[H_3O^+] = C' - 1 + G \approx (C' - 1)M$$

$$C' - 1 = 10^{-5} \Rightarrow C' = 1 + 10^{-5} \approx 1M$$

όπως στην προηγούμενη περίπτωση