

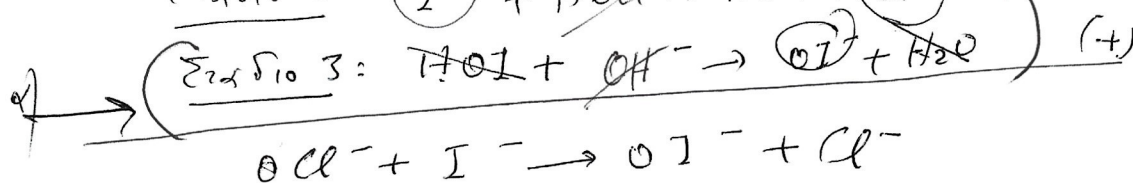
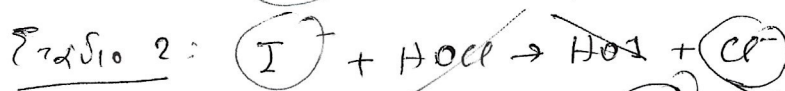
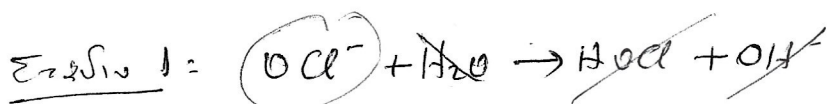
ΘΕΜΑ (Α):

$A_1) \theta \quad A_2) \beta \quad A_3) \gamma \quad A_4) \alpha \quad A_5) \gamma$

ΘΕΜΑ (Β)

(B₁)
 i) α) $v \downarrow$ β) $\downarrow$
 ii) α) $v = \uparrow$ β) $\omega \downarrow$
 iii) α) $v \downarrow$ β) $\omega \downarrow$
 iv) α) $v \downarrow$ β) $\omega \downarrow$

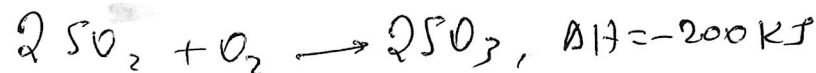
(B₂)



β) HOCl, HOI, OH⁻

ΘΕΜΑ (Γ): $\alpha \text{ mol SO}_2, \beta \text{ mol O}_2 \quad \alpha + \beta = \frac{11,2}{22,4} = 0,5$

(Γ₁)

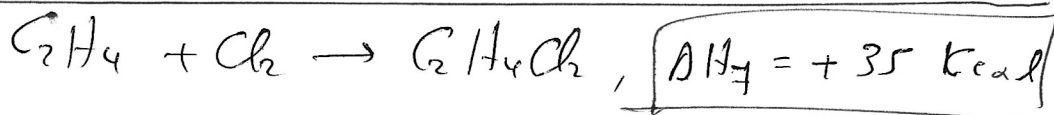
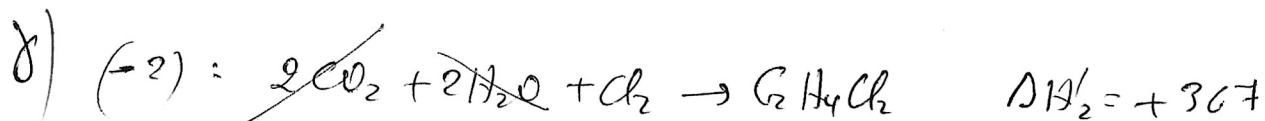
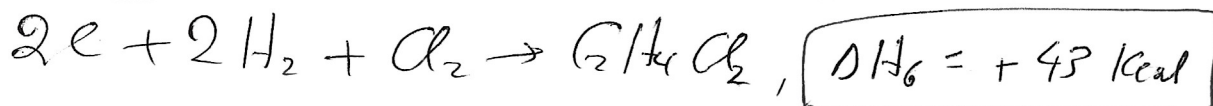
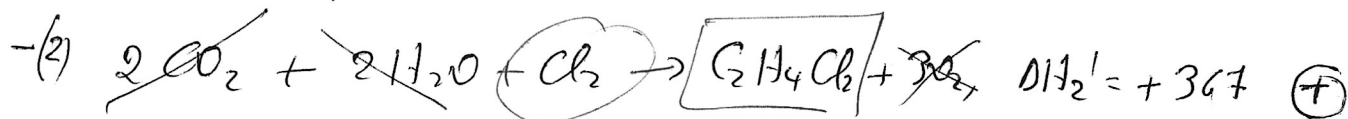
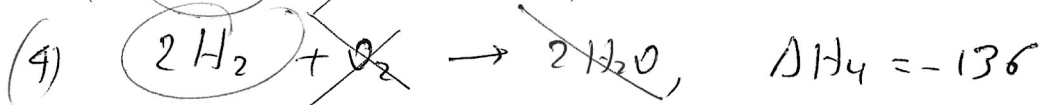
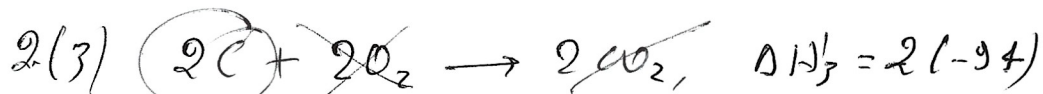
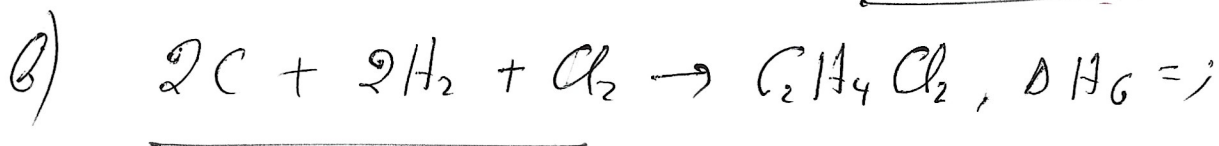
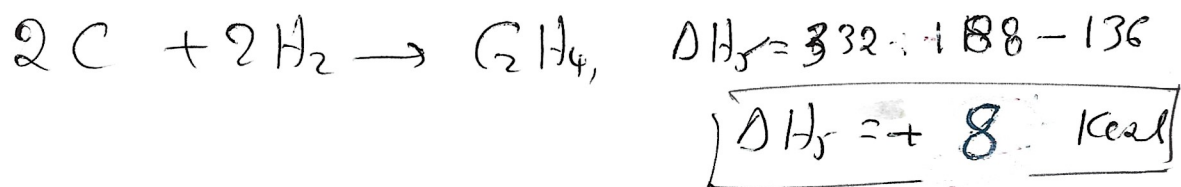
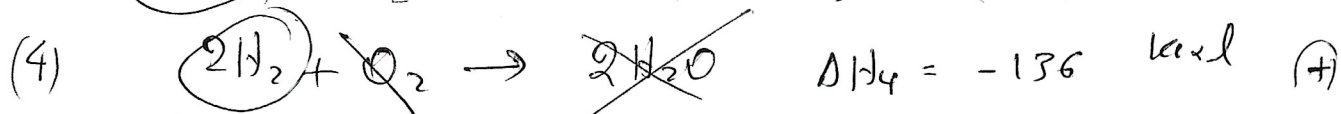
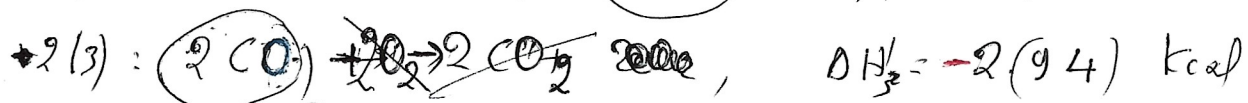
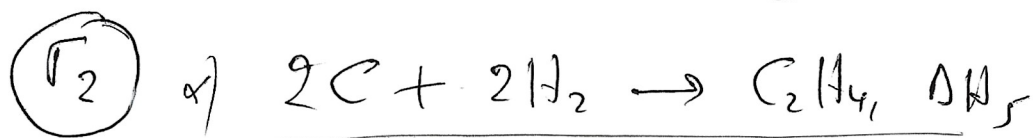


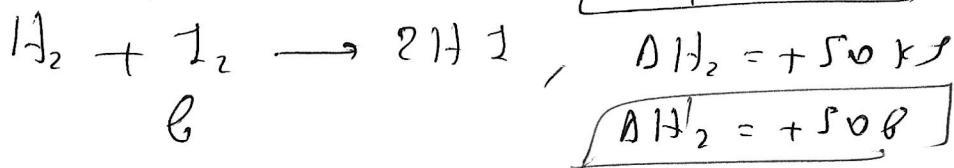
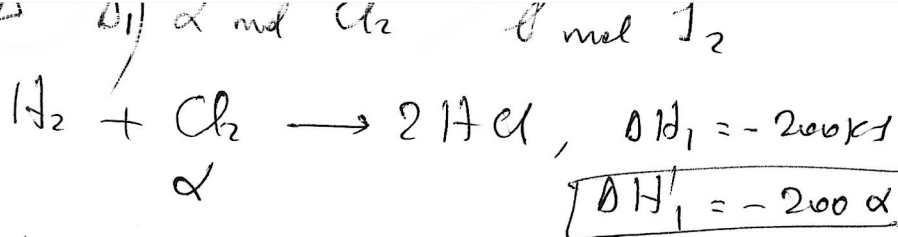
$$\begin{array}{ccc} \alpha & \beta & \\ -2x & -x & 2x \\ \alpha - 2x & \beta - x & 2x \end{array} \quad \Delta H' = -200x \quad \left. \vphantom{\begin{array}{ccc} \alpha & \beta & \\ -2x & -x & 2x \\ \alpha - 2x & \beta - x & 2x \end{array}} \right\} -200x = -200 \quad \boxed{x = 0,1}$$

α) $m_{\text{SO}_3} = 2x \cdot M_r = 0,2 \cdot 80 = 16 \text{ g}$

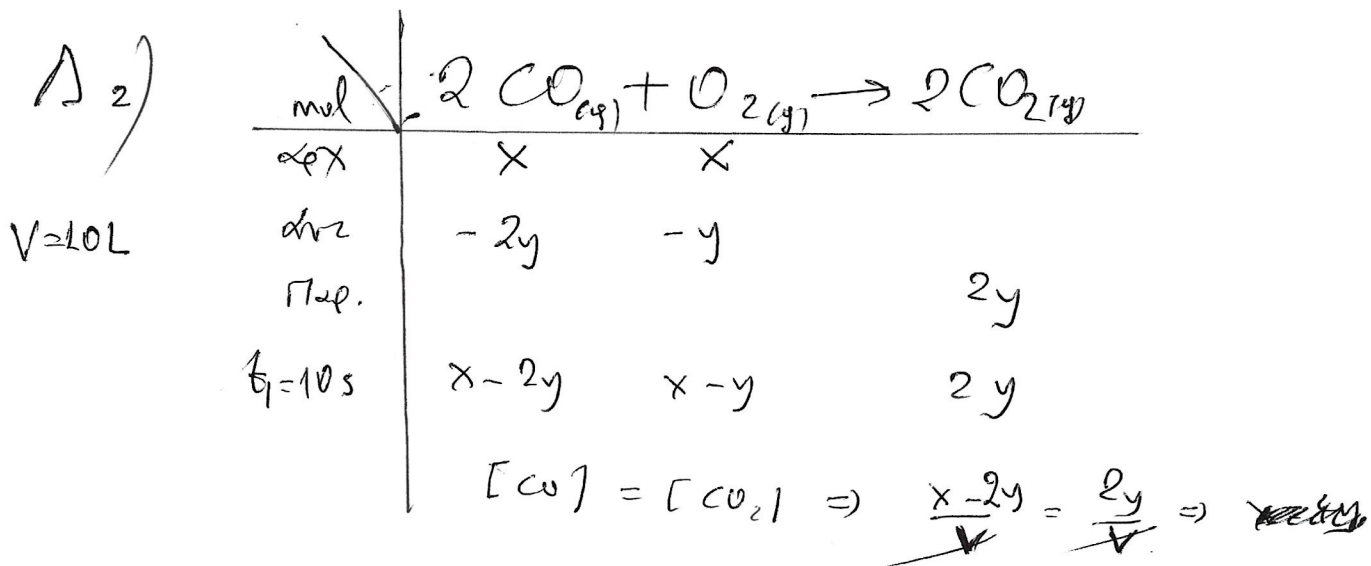
β) α) $n_{\text{SO}_2} = \alpha = 2x = 0,2 \text{ mol} \Rightarrow n_{\text{O}_2} = 0,3 \text{ mol}$

β) β) $n_{\text{O}_2} = \beta = 0,1 \text{ mol O}_2 \Rightarrow n_{\text{SO}_2} = 0,4 \text{ mol}$





$$[\Delta H'_1] = \Delta H'_2 \Rightarrow +200\alpha = 50\beta \Rightarrow \frac{\beta}{\alpha} = \frac{20}{5} = \frac{4}{1}$$



$$\frac{2y}{10} = 0,2 \Rightarrow 2y = 2 \Rightarrow \boxed{y = 1}$$

$\gamma)$
 $\frac{X - 2 \cdot 1}{10} = 0,2 \Rightarrow \boxed{X = 4}$

$$\epsilon) \quad \nu_{\text{CO}} = - \frac{\Delta[\text{CO}]}{\Delta t} = - \frac{(0,2 - 0,4)}{10} = 0,02 \frac{\text{M}}{\text{s}}$$

$$\nu_{\text{O}_2} = \frac{1}{2} \nu_{\text{CO}} = 0,01 \frac{\text{M}}{\text{s}}$$

$$\nu_{\text{CO}_2} = 0,02 \frac{\text{M}}{\text{s}}$$

$$\boxed{\nu_p = \nu_{\text{O}_2} = 0,01 \frac{\text{M}}{\text{s}}}$$

$\delta)$ Δεν έχει τελεωμένη η αντίδραση αφού υπάρχουν διαθεσίμα mol ως όπλα τα αντιδρώντα

δ)

	$2\text{CO}_{(g)} + \text{O}_{2(g)} \rightarrow 2\text{CO}_{2(g)}$		
αρχ	X	X	
αμ/μολ	-2ω	-ω	2ω
t=t ₂	X-2ω	X-ω	2ω

$$[\text{O}_2] = \frac{4-\omega}{10} = 0,2 \Rightarrow 4-\omega = 2$$

$$\omega = 2$$

Οότε $\eta_{\text{CO}} = 4 - 2 \cdot 2 = 0 \Rightarrow$ η αντίδραση
 ολοκληρώθηκε. Την στιγμή $t=t_2$
 η $v_{t_2} = 0$

ε) Για να είε $2\text{mol CO}_{(g)} + 1\text{mol O}_{(g)} = 3\text{mol αερίων}$
 παράγονται $2\text{mol CO}_{2(g)} \Rightarrow$ δηλ τα
 αερίδια παραχθέντα mol αερίων είναι λιγότερα
 από τα αερίδια $\Rightarrow$ η $P_{\text{ολ}} \downarrow$
 αφού $P_{\text{ολ}} = \frac{n_{\text{ολ}} R \cdot T}{V}$