ΛΥΣΕΙΣ ΔΙΑΓΩΝΙΣΜΑΤΟΣ ΦΥΣΙΚΗΣ Α' ΛΥΚΕΙΟΥ 18/10/2020

ΘΕΜΑ Α

Α1) α Α2) γ Α3) δ Α4) β

Α5) Λ, Σ, Σ, Σ, Λ

ΘΕΜΑ Β

Β1) α) $\Delta x = x_{τελ} - x_{αρχ} = x_4 - x_1 = (-5m) - (+5m) \Rightarrow \Delta x = -10m$

β) $S_1 = 5m$, $S_2 = 20m$, $S_3 = 5m$

$S_{ολ} = S_1 + S_2 + S_3 = 30m$

Β2) $U_A = \frac{4x_1}{t}$ και $U_B = \frac{2x_1}{t}$, Άρα $U_A = 2U_B$, Σωστό το (β)

Β3) $x = 10 - 20t$ (SI)

Ι) $U = -20m/s$, Σωστό το (δ)

ΙΙ) Για $t_1 = 1s$: $x_1 = -10m$, Για $t_2 = 5s$: $x_2 = -90m$

Άρα $\Delta x = x_2 - x_1 = -80m$, Σωστό το (α)

ΘΕΜΑ Γ

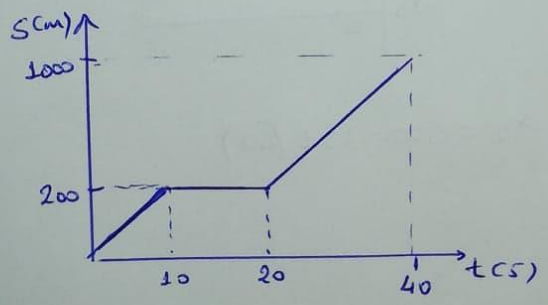
Γ1) 0-10s : $\Delta x_1 = E_1 = 200m$, $S_1 = 200m$

10s-20s : $\Delta x_2 = E_2 = 0$, $S_2 = 0$

20s-40s : $\Delta x_3 = E_3 = 800m$, $S_3 = 800m$

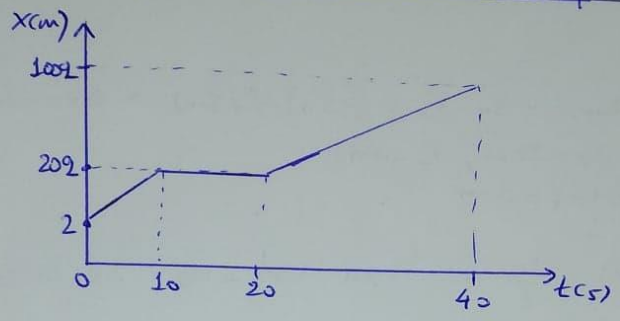
Γ2) $U_μ = \frac{S_{ολ}}{t_{ολ}} = \frac{1000m}{40s} \Rightarrow U_μ = 25m/s$

Γ3)



Γ4)

Δt(s)	$t_{αρχ}$(s)	$x_{αρχ}$(m)	$t_{τελ}$(s)	$x_{τελ}$(m)	Δx(m)
0-10	0	2	10	202	200
10-20	10	202	20	202	0
20-40	20	202	40	1002	800



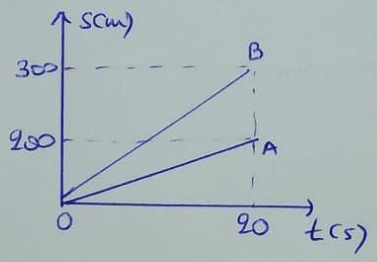
ΘΕΜΑ Δ

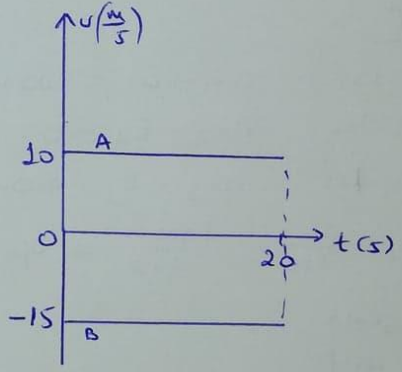
Δ1) $S_1 + S_2 = d \Rightarrow U_1 t + U_2 t = d \Rightarrow t = 20s$

$S_1 = U_1 t = 10 \cdot 20 \Rightarrow S_1 = 200m$

$S_2 = U_2 t = 15 \cdot 20 \Rightarrow S_2 = 300m$

Δ2)





Δ3) $x_1 = 10t\,(SI)$, $x_2 = 500 - 15t\,(SI)$