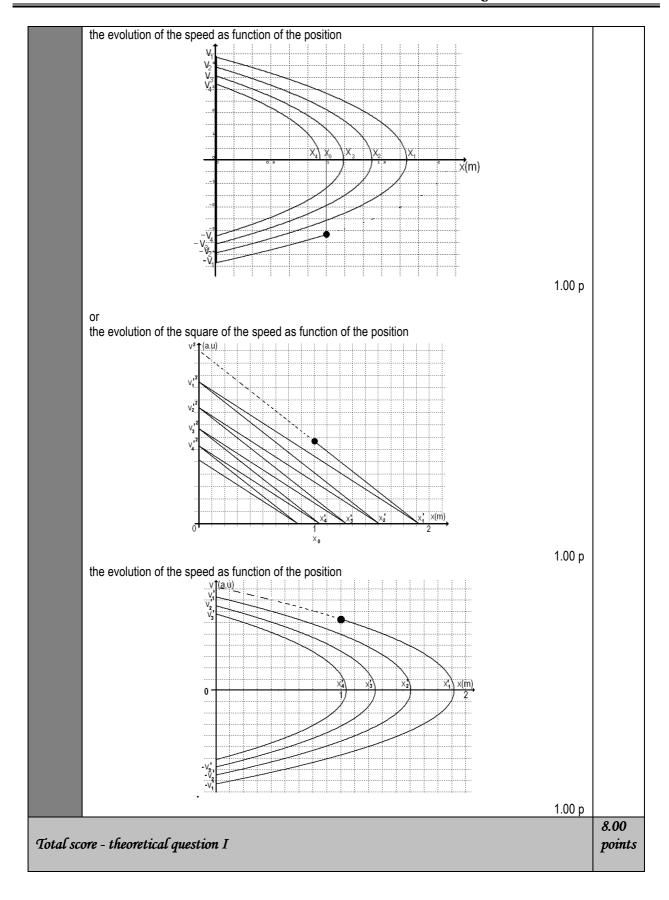
MARKING SCHEME FOR ANSWERS TO THE THEORETICAL QUESTION I

$\begin{cases} W(x_0) = D \cdot F_i \\ U(x_0) + E_c = D \cdot F_i \\ F_x \cdot x_0 + E_c = D \cdot F_i \end{cases}$ $D = \frac{ F_x \cdot x_0 + E_c}{F_i}$ final result $D = 20m$ 0.50 p I.b. For: $U(x) = F_x \cdot x$ 1.00 p 1.00 p	Part	MARKING SCHEME - THE THEORETICAL QUESTION I-JUMPING PARTICLE	Total Scores
$D = \frac{ F_x \cdot x_0 + E_c}{F_f}$ final result $D = 20m$ 0.50 p $U(x) = F_x \cdot x$ 1.00 p $\frac{E(x)}{F(x)} = \frac{1}{F(x)} = \frac{1}$	l.a.	the distance D covered by the particle to the stop	2.00 points
$D = \frac{ F_x \cdot x_0 + E_c}{F_t}$ final result $D = 20m$ 0.50 p I.b. For: $U(x) = F_x \cdot x$ $E(x) = \frac{1}{5} \text{ A.U.}$ The evolution of the square of the speed as function of the position $V^2 = \frac{1}{5} \text{ A.U.}$		$\begin{cases} W(X_0) = D \cdot F_f \\ U(X_0) + E_c = D \cdot F_f \\ F_x \cdot X_0 + E_c = D \cdot F_f \end{cases}$ 1.00 p	
I.b. For: $U(x) = F_x \cdot x$ $= [x] A.U.$		$D = \frac{ F_x \cdot x_0 + E_c}{F_f} $ 0.50 p	
$U(x) = F_X \cdot x$ 1.00 p Dint		final result $D = 20 m$ 0.50 p	
Lc. For: the evolution of the square of the speed as function of the position 1.00 p 4.00 point	l.b.		2.00 points
For : the evolution of the square of the speed as function of the position $ V_1^2 = V_2^2 $ (a.u) $ V_2^2 = V_3^2 $		E(8)	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	I.c.	For : the evolution of the square of the speed as function of the position	4.00 points



Professor Delia DAVIDESCU, National Department of Evaluation and Examination—Ministry of Education and Research-Bucharest, Romania Professor Adrian S.DAFINEI, PhD, Faculty of Physics – University of Bucharest, Romania