Consider a mass-spring system, where the oscillation is describe by $x = A \cos \omega t$. The kinetic energy is $K = \left(\frac{1}{2}\right) m \left(\frac{dx}{dt}\right)^2$. The potential energy is $U = \frac{k x^2}{2}$. The maxima are $K_{max} = \frac{m (\omega A)^2}{2}$, and $U_{max} = \frac{k A^2}{2}$.

Which choice below gives the total energy of oscillations?

A) $E = K_{max} = U_{max} = \frac{m (\omega A)^2}{2}$.
B) $E = K_{max} + U_{max} = m (\omega A)^2$.
C) $E = K_{max} + U_{max} = k A^2$.

The total energy $E = K + U$, of the mass-spring system is a conserved quantity. 
$E$ stays the same throughout the oscillations. 
When the mass passes the point $x = 0$, its potential energy is 0 and its kinetic energy is at its maximum. 
At the maximum stretch, its potential energy is maximum and its kinetic energy is 0. 
Answer A. 

13.02-06 Total Energy of Simple Harmonic Motion 2004-3-24