

QUESTION

A 2.2-kg object is suspended from a spring with $k = 18 \text{ N/m}$. The mass is pulled 0.35 m downward from its equilibrium position and allowed to oscillate. What is the maximum kinetic energy of the object?

- A) 0.25 J
- B) 0.50 J
- C) 1.1 J
- D) 2.0 J
- E) 4.0 J

Answer

C)

Explanation

Let $k = 18 \text{ N/m}$
 $x = 0.35 \text{ m}$

$$\begin{aligned} \text{KE} &= \frac{1}{2} kx^2 \\ &= \frac{1}{2} (18)(0.35)^2 \\ &= \frac{1}{2}(18)(0.1225) \\ &= \frac{1}{2}(2.205) \\ \text{KE} &= \mathbf{1.1025 \text{ J}} \end{aligned}$$

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