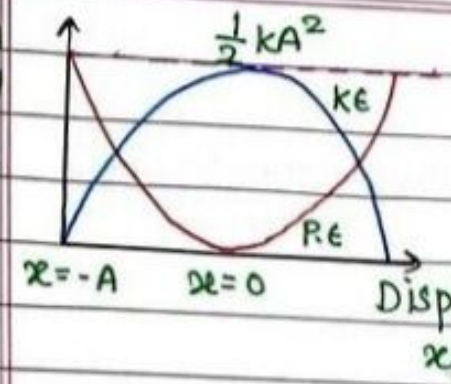


$$KE = \frac{1}{2}mv^2$$

$$KE = \frac{1}{2}\omega^2 m\,(A^2-x^2)$$

$$PE = \frac{1}{2}kx^2$$

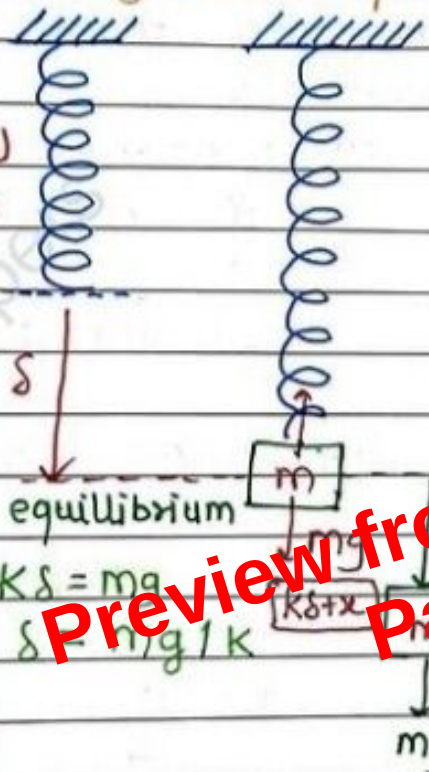
$$TE = PE + KE$$

$$= \frac{1}{2}kx^2 + \frac{1}{2}m\omega^2(A^2-x^2)$$

$$= \frac{1}{2}kx^2 + \frac{1}{2}k(A^2-x^2)$$

$$T = \frac{1}{2}kA^2 \ldots\ldots \text{constant}$$

Spring Block System



$K\delta = mg$

$\delta = mg/k$

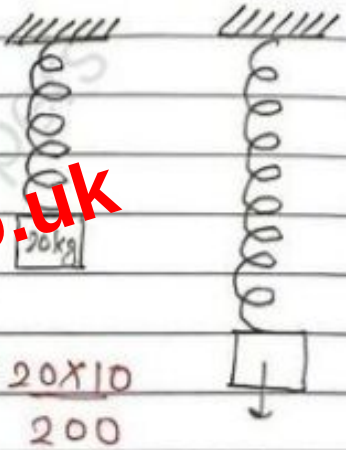
$F_{net} = mg - k(\delta+x)$

$= mg - k\delta - kx$

$F_{net} = -kx$

$$T = 2\pi\sqrt{\frac{m}{k}}$$

Ques) ⇒

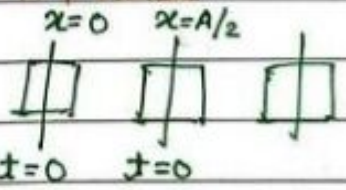


soln :→

$\delta = \frac{20\times10}{200}$

$\delta = 1m$

PHASE



$x = A\sin(\omega t+\phi)$

$x = A\sin(\omega t+30°)$

$t=0$

$x = A\sin 30°$

$x = \frac{A}{2}$

$x = A\sin\omega t$

$t=0,\ x=0$