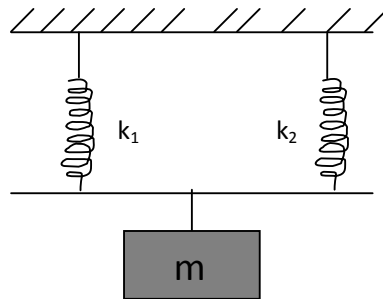


PHYSICS

- The dimensions of entropy are
 (A) $M^0L^{-1}T^0K$ (B) $M^0L^{-2}T^0K^2$ (C) $MLT^{-2}K$ (D) $ML^2T^{-2}K^{-1}$
- In a vernier calipers, p divisions of its main scale match with (p+1) divisions on its vernier scale. Each division of the main scale is k units. Using the vernier principle, its least count will be
 (A) $k \Rightarrow (1/p)$ (B) $(k+1)/p$ (C) $(p+1)/k$ (D) $k/(p+1)$
- The torque of a force $\vec{F} = 7\vec{i} + 5\vec{j} + 3\vec{k}$ acting at a point $\vec{r} = 7\vec{i} + 2\vec{j} + 3\vec{k}$ is
 (A) $\vec{i} + 24\vec{j} + 34\vec{k}$ (B) $18\vec{i} + 24\vec{j} + 34\vec{k}$
 (C) $15\vec{i} + 24\vec{j} + 34\vec{k}$ (D) $5\vec{i} + 2\vec{j} + 34\vec{k}$
- Two springs of force constants k_1 and k_2 are connected as shown in figure below. The time period of vertical oscillation of mass m is given by



- (A) $2\pi \sqrt{\frac{m}{(k_1 + k_2)}}$ (B) $2\pi \sqrt{\frac{m(k_1 + k_2)}{k_1 k_2}}$
 (C) $2\pi \sqrt{\frac{m(k_1 + k_2)}{k_1 k_2}}$ (D) $2\pi \sqrt{\frac{m}{(k_1 + k_2)}}$

SPACE FOR ROUGH WORK