

As the temperature is increased, the time period of a pendulum

- (a) increases as its effective length increases even though its centre of mass still remains at the centre of the bob.
- (b) decreases as its effective length increases even though its centre of mass still remains at the centre of the bob.
- (c) increases as its effective length increases due to shifting of centre of mass below the centre of the bob.
- (d) decreases as its effective length remains same but the centre of mass shifts above the centre of the bob.

As $L' = L \propto \Delta T$

As 'T' is increased, ΔT is positive and hence, length increases.

Also, $T = 2\pi \sqrt{\frac{L}{g}}$ for a simple pendulum

As $T \propto \sqrt{L}$

\Rightarrow Time period increases.