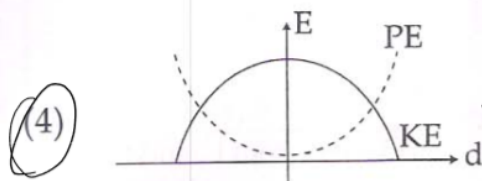
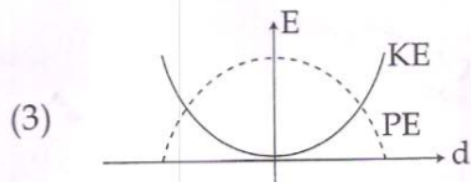
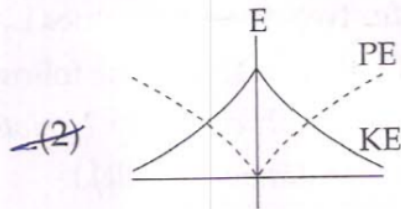
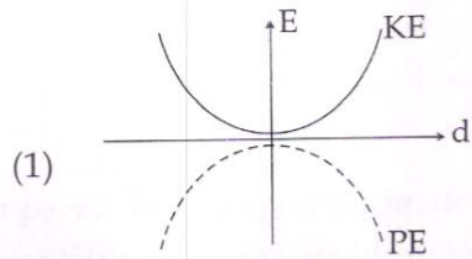


4. For a simple pendulum, a graph is plotted between its kinetic energy (KE) and potential energy (PE) against its displacement d . Which one of the following represents these correctly? (graphs are schematic and not drawn to scale)



Correct option

For simple pendulum,

$$v = 0 \text{ when } d \text{ is max}$$

$$\therefore K.E. = 0 \text{ when } d \text{ is max}$$

$$K.E. \text{ is max when } d = 0$$

Also, P.E. increases when d is max, as pendulum swings.

Also, there is no sharp jump in K.E. or P.E. during the motion. Hence (4) is

correct