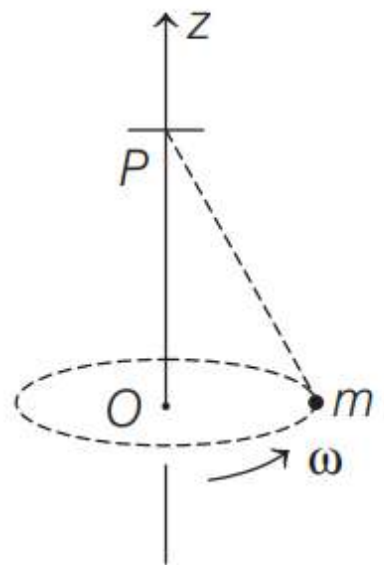


A small mass  $m$  is attached to a massless string whose other end is fixed at  $P$  as shown in the figure. The mass is undergoing circular motion in the  $x$ - $y$  plane with centre at  $O$  and constant angular speed  $\omega$ . If the angular momentum of the system, calculated about  $O$  and  $P$  are denoted by  $\mathbf{L}_O$  and  $\mathbf{L}_P$  respectively, then



(2012)

- (a)  $\mathbf{L}_O$  and  $\mathbf{L}_P$  do not vary with time
- (b)  $\mathbf{L}_O$  varies with time while  $\mathbf{L}_P$  remains constant
- (c)  $\mathbf{L}_O$  remains constant while  $\mathbf{L}_P$  varies with time
- (d)  $\mathbf{L}_O$  and  $\mathbf{L}_P$  both vary with time

Sol 4 Read solution of problem 3 and use a fact from class NOTES.

Ans C