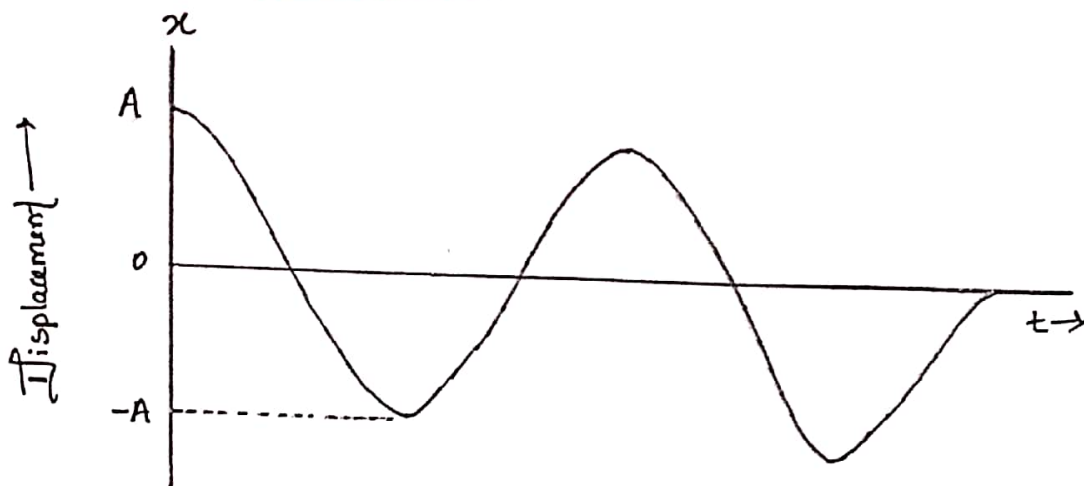


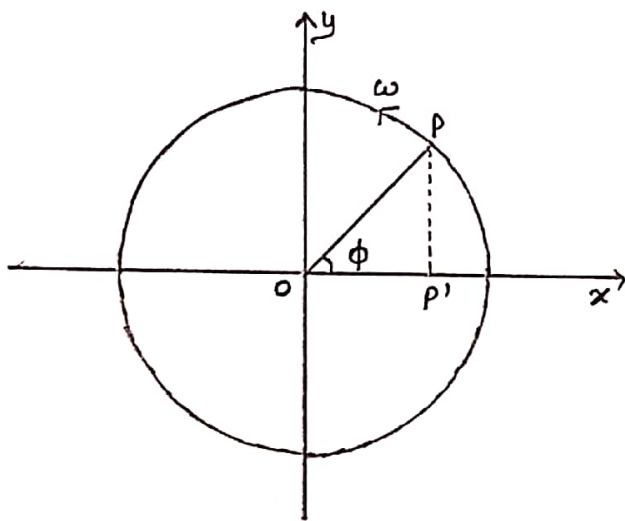
# Chapter-14; Oscillations

## 1) Simple harmonic motion

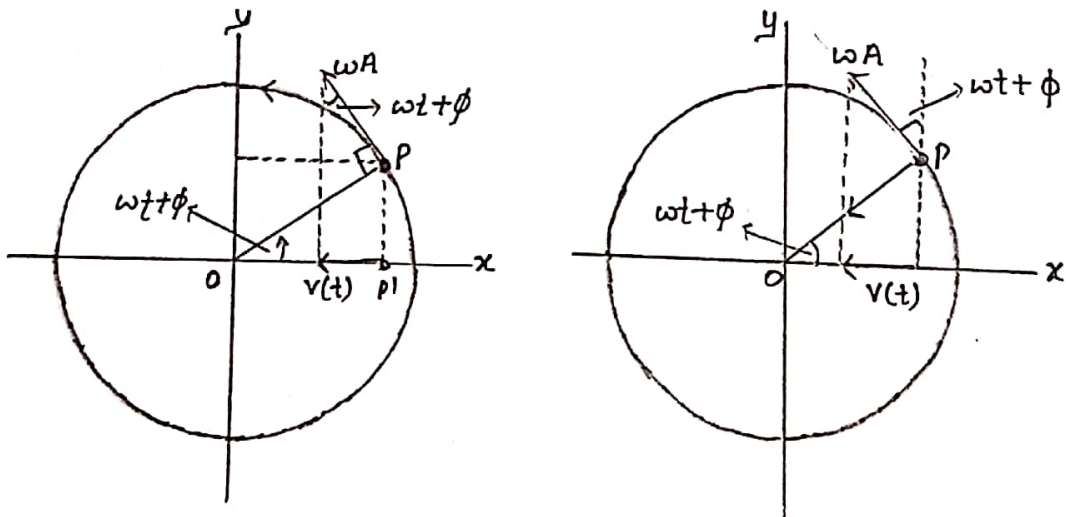


Displacement as a continuous function of time for simple harmonic motion.

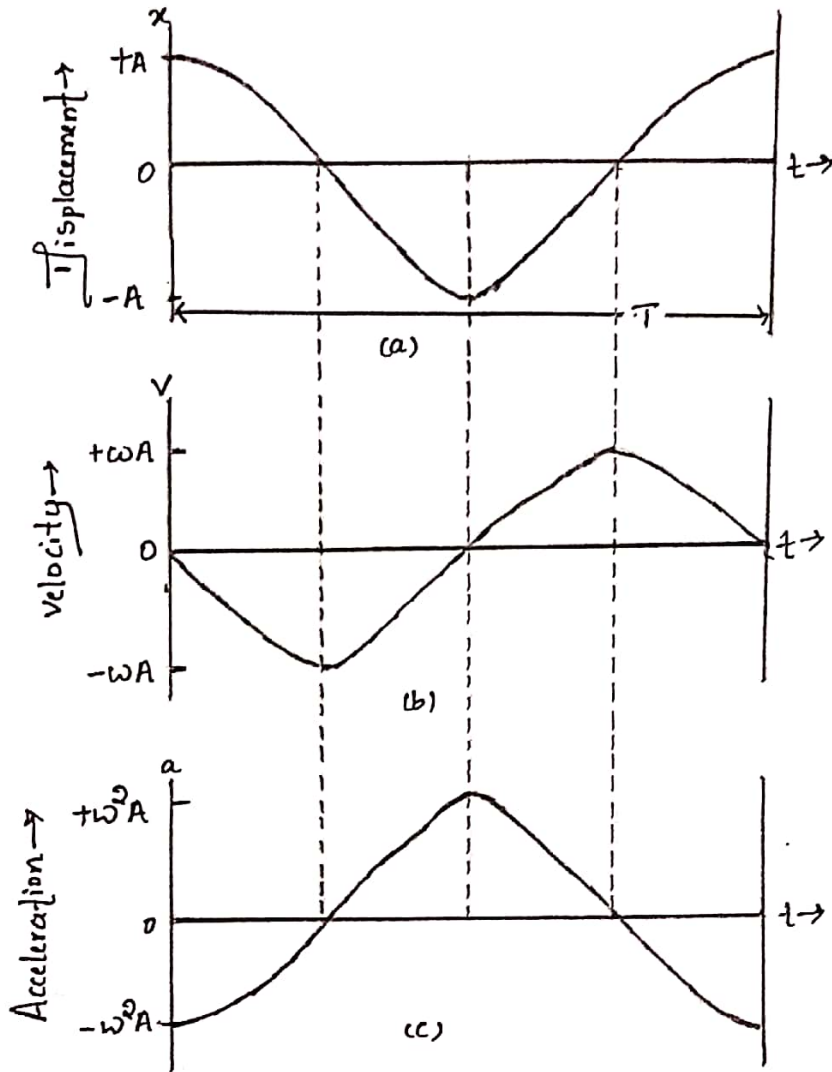
## 2) Simple harmonic motion and uniform circular motion.



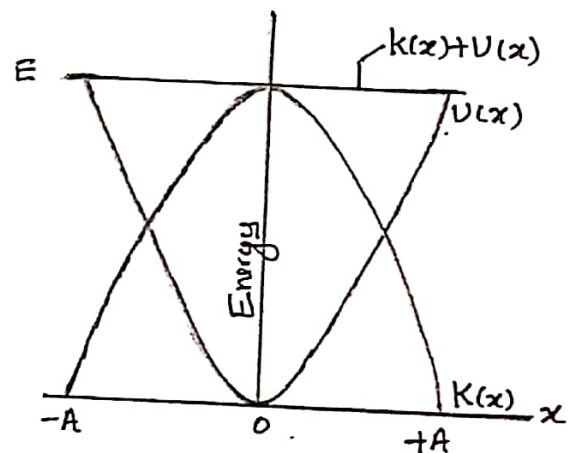
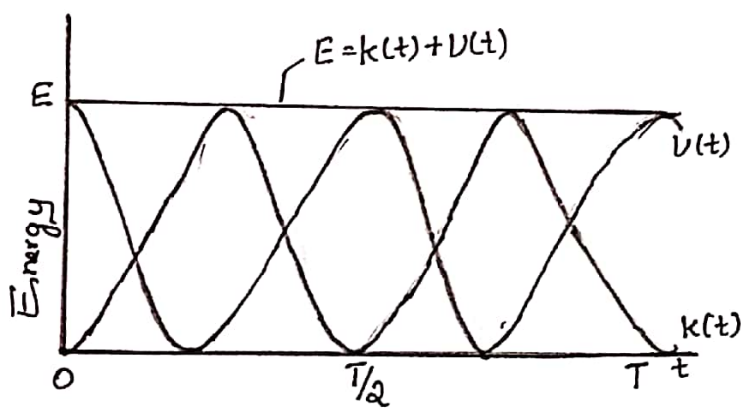
## 3) Velocity and Acceleration in simple harmonic motion.



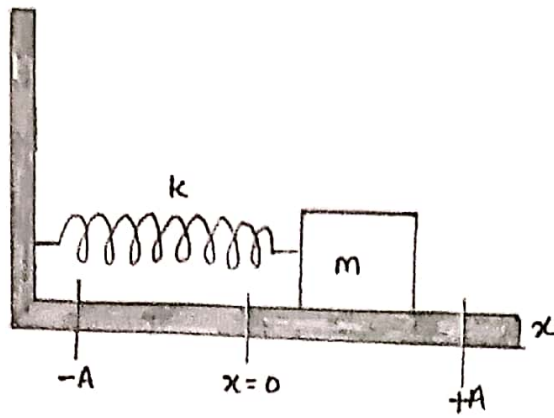
4) Displacement, velocity and acceleration of a particle in simple harmonic motion have the same period  $T$ , but differ in phase.



5) Energy in simple harmonic motion.

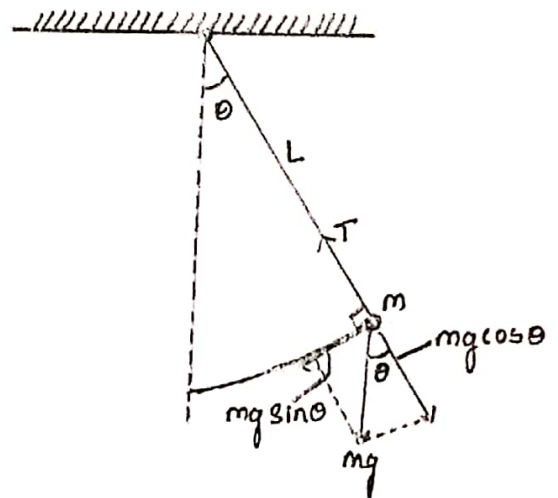
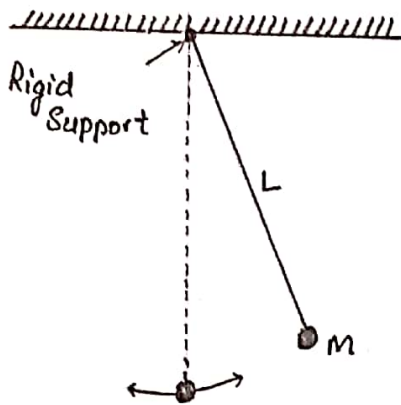


6) Oscillation due to a spring.



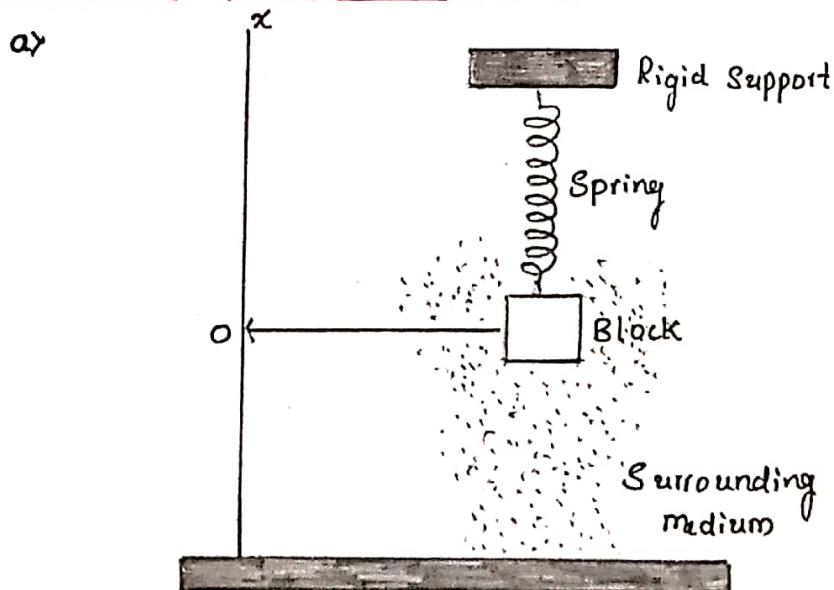
$$T = 2\pi \sqrt{\frac{m}{k}}$$

7) The simple pendulum

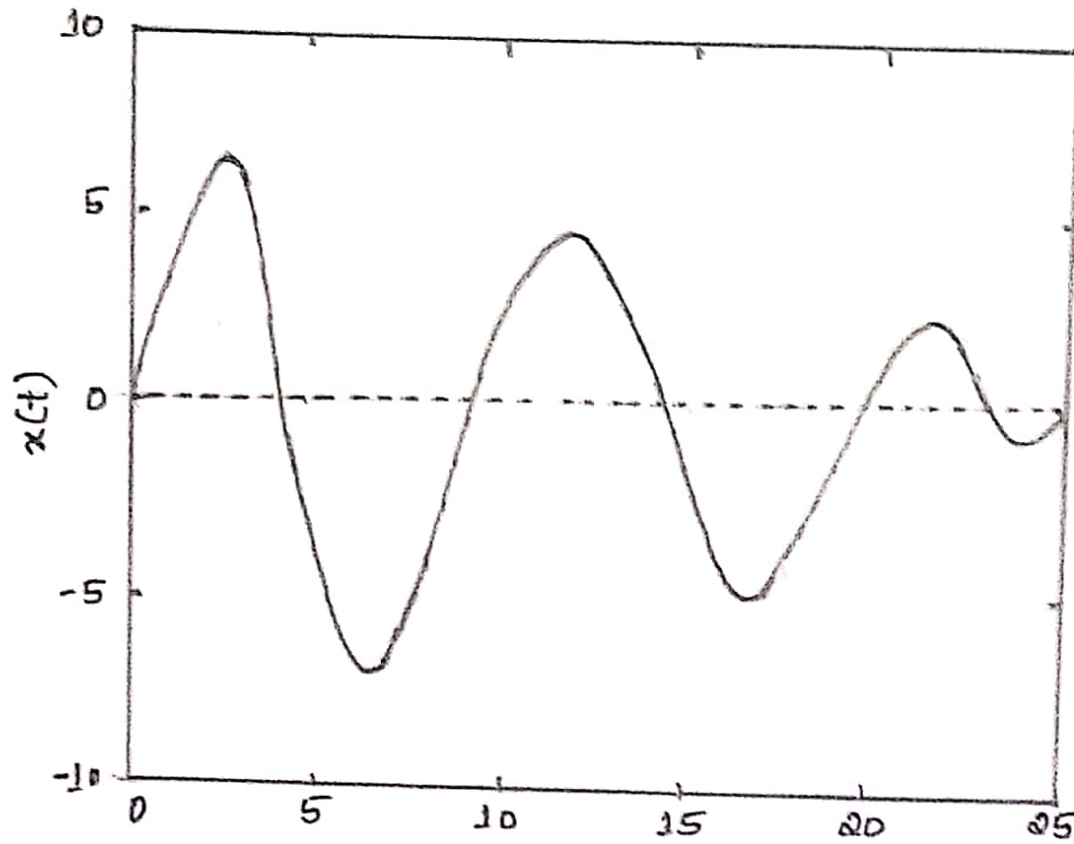


$$T = 2\pi \sqrt{\frac{L}{g}}$$

8) Damped simple harmonic motion.



b)



A damped oscillator is approximately periodic with decreasing amplitude of oscillation. with greater damping oscillations die out faster.