

Objective Type Questions & Answers

Select the correct answer from the following choices:

1) In S.H.M. the acceleration of a body is directly proportional to,

- a. applied force b. amplitude c. displacement d. restoring force

2) Any type of vibratory motion is called,

- a. oscillatory motion b. translatory motion
c. rotator motion d. simple harmonic motion

3) The maximum distance of the vibrating body from the mean position when the body is executing S.H.M. is called,

- a. frequency b. time period c. displacement d. amplitude

4) A body executing S.H.M. has displacement equal to,

- a. $x_0 \sin \omega t$ b. $x_0 \cos \omega t$ c. $x_0 \sin^2 \omega t$ d. $x_0 \cos^2 \omega t$

5) In S.H.M. the velocity of the particle is maximum at,

- a. extreme position b. mean position
c. intermediate position d. none of these

- a. $mg\cos\theta$ b. $mg\sin\theta$ c. $mg\sec\theta$ d. $mg\tan\theta$

13) If the mass of the bob of a simple pendulum is double, its time period,

- a. becomes one half b. becomes double
c. becomes four times d. remains same

14) The time period of the simple pendulum is independent of the,

- a. mass b. length
c. acceleration due to gravity d. restoring force

15) If the mass attached to the spring increases, then its time period,

- a. increases b. decreases
c. remains constant d. none of these

16) Simple harmonic motion is a type of,

- a. rectilinear motion b. circular motion
c. angular motion d. rotational motion

17) When the bob of the simple pendulum is at the extreme position, it has,

- a. K.E. b. P.E.
c. both P.E. & K.E. d. none of these

18) When the bob of the simple pendulum is at the mean position, the value of the P.E. is,

- a. zero b. minimum c. maximum d. infinite

19) Total energy of a particle executing S.H.M. at any displacement x is given by,

- a. kx b. $\frac{1}{2} kx$ c. kx_0 d. $\frac{1}{2} kx_0^2$

20) The frequency of a body of mass m attached to a spring constant k is given by,

- a. $2\pi\sqrt{\frac{m}{k}}$ b. $2\pi\sqrt{\frac{k}{m}}$ c. $\frac{1}{2\pi}\sqrt{\frac{k}{m}}$ d. $\frac{1}{2\pi}\sqrt{\frac{m}{k}}$

21) Angular frequency ω is given by the expression,

- a. $\omega = \frac{v}{r}$ b. $\omega = \frac{2\pi}{T}$
c. $\omega = \sqrt{\frac{k}{m}}$ d. all of these

22) In microwave oven, the heating is produced by the phenomenon of,

- a. damped oscillations b. resonance
c. forced oscillations d. free oscillations

23) The vibrations of a factory floor caused by the running of the factory of a heavy machinery is,

a. due to uneven floor

b. due to rough surface of the floor

c. forced oscillations

d. due to bad construction

24) When damping is small, the amplitude of vibration at resonance will be,

a. small

b. large

c. unchanged

d. none of these

