THE VILLAGE
INTERNATIONAL SCHOOL
"We Nurture Dreams"

1. The velocity of sound is maximum in
   a) Water
   b) Air
   c) Metal
   d) Same in all

2. The length of second's pendulum on the surface of earth is 1 m. the length of same pendulum on the surface of moon, where acceleration due to gravity is (1/6)th of the g on the surface of earth is
   a) 36 m
   b) 1/6 m
   c) 1/36 m
   d 6 m

ASSERTION AND REASON TYPE QUESTIONS:

3. **Assertion**: The time period of a simple pendulum on a satellite orbiting the earth is infinite.
   Reason: The time period of a satellite T α 1/g

4. **Assertion**: Energy of a particle executing simple harmonic motion is entirely potential energy at the extreme position.
   Reason: Particle at extreme position is at rest.

5. **Assertion**: In S.H.M., the velocity is maximum when acceleration is minimum.
   Reason: Displacement and velocity of S.H.M. differ in phase by π/2.

6. **Assertion**: In simple harmonic motion, the motion is 'to and fro' and periodic.
   Reason: Velocity of particle is $v = w\sqrt{r^2 - x^2}$ where x is displacement and r is amplitude.

VERY SHORT ANSWER TYPE QUESTIONS:

1) The maximum velocity of a particle, executing S.H.M with amplitude of 7mm is 4.4 m/s. What is the period of oscillation?
2) At what points is the energy entirely kinetic and potential in S.H.M? What is the total distance travelled by a body executing S.H.M in a time equal to its time period, if its amplitude is A?
3) A particle executes SHM with amplitude A. At what distance from the mean position its KE is equal to PE?
4) An observer standing at the sea coast observes 54 waves reaching the coast per minute. If the wavelength of the eave is 10 m, what is wave velocity?
5) A girl is swinging in the sitting position. How will the period of the swing change if she stands up?
6) Write any three characteristics of stationary waves: