Physics - FSC Part 1 Physics Chapter 7 Short Questions Preparation

Q1. Why the amplitude of lead bob is greater than pith ball as the bobs having equal size and length set into vibration?

Ans 1: It is because the mass of lead bob is much greater than the very light pith ball, so lead bob can travel to greater extent in air against the resistive and retarding forces. Lead bob has greater inertia.

Q2. Define resonance.Write its one example.

Ans 1: When the frequency of the applied force is equal to the natural frequency of simple harmonic oscillator, the periodic amplitude of the motion may become extraordinary large. This phenomenon is called resonance.

1. A swing is a good example of mechanical resonance.
2. Turning a radio is the example of electrical resonance.

Q3. Can we realize an ideal simple pendulum?

Ans 1: No, we can't realize an ideal simple pendulum. Because an ideal simple pendulum should consist of a heavy but small metallic bob suspended from a frictionless rigid support by means of long, weightless and inextensible string.

Q4. Define vibratory motion.

Ans 1: The to and fro motion of a body about a fixed point is called the vibratory or oscillatory motion.

Q5. Define (a) resonance (b) damping

Ans 1: Resonance: When the frequency of the applied force is equal to the natural frequency of simple harmonic oscillator, the periodic amplitude of the motion may become extraordinary large. This phenomenon is called resonance.
Damping: The oscillations in which the amplitude decreases steadily with time are called damped oscillations and this phenomenon is called damping

---

Q6. Describe some common phenomena in which resonance plays an important role.

Ans 1:

- A swing is a good example of mechanical resonance.
- Tuning of the radio is the best example of electrical resonance.
- Another good example of resonance is the heating and cooking of food very efficiently and evenly by microwave oven.

Q7. Describe free vibrations.

Ans 1: A Body is said to be executing free vibrations when it oscillates without the interference of an external force.

Q8. What is slinky spring ?

Ans 1: A large and loose spring coil is called slinky-spring. It can be used to demonstrate the effect of the motion of the source in generating waves in a medium.

Q9. Write one advantage and one disadvantage of resonance.

Ans 1: Advantage: A swing is a good example of mechanical resonance. If a series of regular pushes are given to the swing , its motion can be built up enormously .
Disadvantages: The rhythmic march of column of soldiers on a bridge of long span might set up oscillations of dangerously large amplitude in the bridge structure. Bridge can be collapsed due to violent resonance oscillations. They are advised break their steps.

Q10. Define Simple Harmonic Oscillator and driven harmonic oscillator.

Ans 1: The oscillator motion taking place under the action of restoring force is known as simple harmonic motion.A body such as simple pendulum , executing SHM is called simple harmonic oscillator
A physical system undergoing forced vibrations is know as driven harmonic oscillator.
