

## Physics - FSC Part 1 Physics Chapter 7 Short Questions Preparation

Q1. How the phenomenon of resonance is produced?

**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. Tuning a radio is the example of electrical resonance.

Q2. What are damped oscillations?

**Ans 1:** The oscillations in which the amplitude decreases steadily with time are called damped oscillations.  
Fro example

- The shock absorber of a car
- Motion of any microscopic system

Q3. How cooking of food is possible in micro-wave oven?

**Ans 1:** Food can be easily cooked in a microwave oven. The waves produced in this type of oven have a frequency of 2450 MHz. At this frequency the waves are absorbed due to resonance by water and fat molecules in the food.

Q4. Describe free vibrations.

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

Q5. What are damped oscillations? Give some of its applications.

**Ans 1:** The oscillations in which the amplitude decreases steadily with time are called damped oscillations  
For example

- The shock absorber of a car
- Motion of any microscopic system

Q6. 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.
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Q7. Why the enthalpy of neutralization has the same value for any strong acid with any strong base?

**Ans 1:**

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Q8. 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.

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Q9. What is the total distance travelled by an object moving with SHM in a time equal to its period, if its amplitude is A?

**Ans 1:** The total distance travelled by an object moving with SHM in its time period is  $4A$ , where  $A$  is amplitude of vibration.

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Q10. What is driven harmonic oscillator?

**Ans 1:** The physical system undergoing forced vibrations is known as driven harmonic oscillator.

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