

# 36 Lecture - PHY101

## Important Mcqs

What is interference?

- a. The bending of waves around an obstacle
- b. The interaction of two or more waves resulting in a pattern of alternating bright and dark regions
- c. The reflection of waves off a surface
- d. The transmission of waves through a medium

Answer: b

**What is the difference between constructive and destructive interference?**

- a. Constructive interference occurs when waves cancel each other out, while destructive interference occurs when waves add up to produce a higher amplitude.
- b. Constructive interference occurs when waves add up to produce a higher amplitude, while destructive interference occurs when waves cancel each other out.
- c. Constructive and destructive interference have the same effect on waves.
- d. None of the above.

Answer: b

**What is the double-slit experiment?**

- a. An experiment that demonstrates the diffraction of light waves
- b. An experiment that demonstrates the reflection of light waves
- c. An experiment that demonstrates the interference of light waves
- d. An experiment that demonstrates the refraction of light waves

Answer: c

**What is diffraction?**

- a. The interaction of two or more waves resulting in a pattern of alternating bright and dark regions

- b. The bending of waves around an obstacle or through an aperture
- c. The reflection of waves off a surface
- d. The transmission of waves through a medium

**Answer: b**

**What is the relationship between the size of an obstacle or aperture and the amount of diffraction?**

- a. The larger the obstacle or aperture, the greater the diffraction
- b. The smaller the obstacle or aperture, the greater the diffraction
- c. The size of the obstacle or aperture does not affect the amount of diffraction
- d. None of the above

**Answer: a**

**What is X-ray diffraction used for?**

- a. To determine the atomic structure of crystals
- b. To study the behavior of sound waves
- c. To study the reflection of light waves
- d. To study the transmission of waves through a medium

**Answer: a**

**What is the difference between interference and diffraction?**

- a. Interference occurs when waves encounter an obstacle or aperture, while diffraction occurs when waves from different sources interact with each other.
- b. Interference and diffraction are the same thing.
- c. Interference occurs when waves from different sources interact with each other, while diffraction occurs when waves encounter an obstacle or aperture.
- d. None of the above.

**Answer: c**

**Can sound waves diffract around corners?**

- a. Yes, because their wavelength is much smaller than that of light waves.

- b. No, because their wavelength is much smaller than that of light waves.
- c. Yes, because their wavelength is much larger than that of light waves.
- d. No, because their wavelength is much larger than that of light waves.

**Answer: c**

**Can light waves diffract around corners?**

- a. Yes, because their wavelength is much smaller than that of sound waves.
- b. No, because their wavelength is much smaller than that of sound waves.
- c. Yes, because their wavelength is much larger than that of sound waves.
- d. No, because their wavelength is much larger than that of sound waves.

**Answer: b**

**What is the principle behind the operation of optical devices such as lenses and mirrors?**

- a. The principle of reflection
- b. The principle of refraction
- c. The principle of interference
- d. The principle of diffraction

**Answer: b**