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