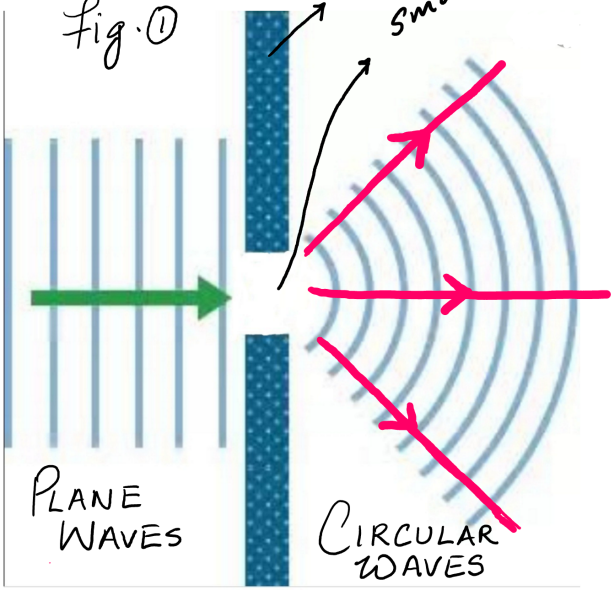
DIFFRACTION 1 waves7

17 January 2021 22:19

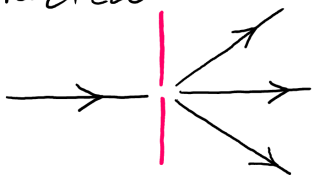
barrier

small gap / narrow opening / slit / aperture

fig. ①



- Diffraction is observed in fig ①
- During diffraction, the wavelength (λ), speed (v) and frequency (f) remains Unchanged.
- A simplified diagram if asked in exams can be constructed as shown in fig ②



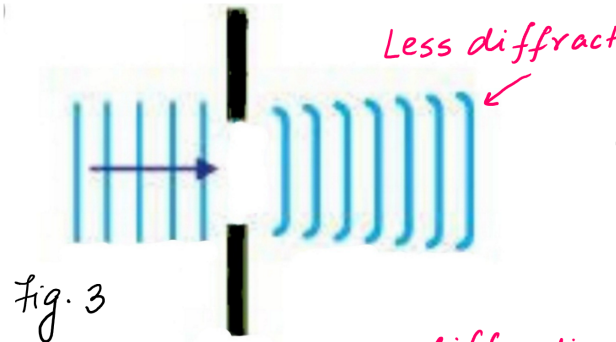


fig. 3

In fig 3 & fig 4 we can observe that the amount of diffraction / amount of Spreading depends on the Size of the gap / slit / aperture in comparison with the wavelength

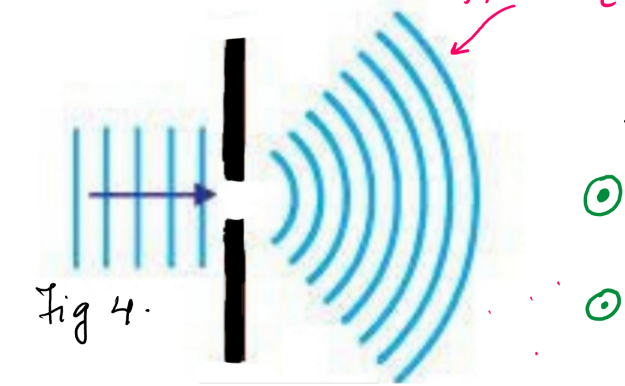


fig 4.

- ⊙ Size of gap ($\approx$) λ (comparable) → significant diffraction occurs → fig ④
- ⊙ Size of gap $>> \lambda$ → Less diffraction occurs → fig ③