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Wave Theory

Hand Notes For JEE Mains, Advance, NEET UG, Class 11 & 12 etc…

Hand Notes

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WAVE THEORY

WAVE → It is distarbance Wich is create in medium & transfered energy from one place to another place Without any transportation of matter.

 # classification of Waves →

|1| → A/c to Medium →

[A] → Mechanical Wave → If medium is necessory for Wave propagation of Wave. (A/R AIIMS)

Ex → Sound Wave, Wave develop in a string.

 # Property of Medium for Mechanical Wave propagation →

|i| → Elasticity → due to elasticity Medium particle regain its Initial position.

|ii| → Inertia → due to inertia Medium particle transfered energy.

|iii| → Resistance & density of Medium is min & Low.

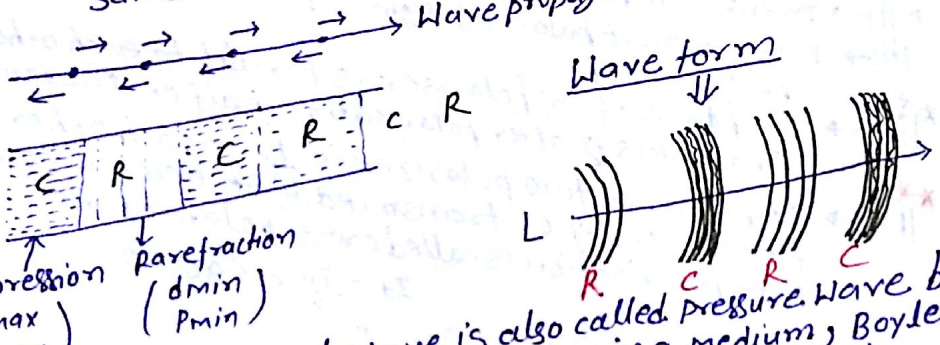
[B] → NON-Mechanical Wave → If Medium is not necessory for Wave propagation.

Exemplar
Ex → Light Wave, EM Wave (γ-ray, X-ray, U.V, visible, I.R, M.W, R.W)

2002 BHU ***
NOTE → Non-mechanical Wave propagate in a vaccum as Well as in medium but mechanical Wave propagate only in Medium. (Not in vaccum)

|2| → A/c to Medium particle vibration →

[A] → Longitudnal Wave : → If medium particle vibrate in the same direction of Wave propagation.



AIIMS
NOTE → Longitudnal Wave is also called pressure Wave bcoz it produce pressure & density difference in a medium, Boyles law is not Obeyed, bulk Modulus of air oscilate (same)

Exemplar
A sound Wave is passing through air column in the form of compression & Rarefaction → There is no transfer of Heat bcoz We can assume Adiabatic process.

Ex → Sound Wave, Wave in a Spring.