

# 11. ELECTRO MAGNETIC WAVES

## IMP DEFINITIONS & FORMULAS

- Electromagnetic waves (EMW)** are generated due to vibrations between an electric field and a perpendicular magnetic field. Electromagnetic waves are Transverse waves.
- EMW carry energy and momentum.
- Micro waves:** Short wavelength radio waves with frequencies in GHz are called micro waves.  
**Uses:** Air-craft navigation, micro wave ovens, speed guns
- Infrared rays:** Electromagnetic waves of lower frequencies adjacent to visible light are called infrared rays.  
**Uses:** Earth satellites, remote controls, treatment of skin diseases.
- Ultraviolet rays:** Electromagnetic waves of higher frequencies adjacent to visible light are called ultraviolet rays.  
**Uses:** Eye surgery, water purifiers etc. Ultraviolet rays harm human eyes, skin etc.
- Ozone layer** of atmosphere is protecting human life from ultraviolet rays of sun.
- X-rays:** Electromagnetic waves of wavelength from  $10^{-3}$  nm to 10 nm  
**Uses:** Cancer curing, taking the photographs of bones, in research for molecular structure of matter.

## BULLET MASTER'S

## PHYSI BEATS!

### 11) ELECTROMANGETIC WAVES [1 VSAQ]

☞ **IMP VSAQ :** Uses of Infrared rays and Microwaves

- కంటికి కనిపించకుండా, చెవులకు వినిపించకుండా, శరీరానికి స్పర్శ తగలకుండా ఈ విశ్వమంతా విస్తరించి ఉన్న విశ్వ తరంగాలే **Electro Magnetic Waves**
- మానవజాతితో సహా సమస్త జీవజాతిమనుగడకు ఆధారభూతమైన ఉష్ణ శక్తిని, కాంతిని సూర్యుని నుండి నిరంతరం మనకు సరఫరా చేసేవే ఈ EMW

### 7 ELECTRO MAGNETIC WAVES:

$\gamma$ -rays, x-rays, UV rays, visible light, infrared, micro waves, radio waves

