SUBJECT - CHEMISTRY
CLASS - B.Sc (Hons) PART - III
PAPER - V
TOPIC - SPECTROSCOPY

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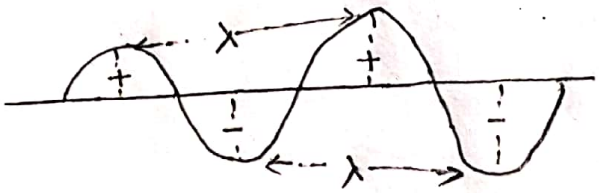
Q What are Radiation, Electromagnetic radiation and Electromagnetic spectrum?

Ans. Radiation is a stream of energy packets, called photons or quanta which travel with the velocity of light in the direction of propagation of the beam.

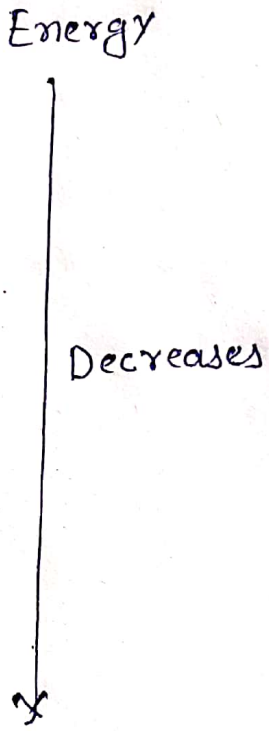
It Consists of oscillating electric and magnetic fields at right angle to each other. These fields move together like a wave whose direction of motion is perpendicular to the plane of two fields as shown in figure



Electromagnetic radiation in the propagation of energy in the form of waves. Since the propagation of energy involves electric and magnetic forces. hence the name electromagnetic is given to all forms of energy. All forms of radiated energy are classified in the form of electromagnetic spectrum. Thus the disturbances in electric and magnetic fields in space Set up electromagnetic radiation and dispersion to this radiation is called electromagnetic spectrum. When the Sun's rays are scattered in a rainbow or a prism The white light is separated into Constituent Colours called Spectrum.

This spectrum is a small part of the electromagnetic spectrum which is given bellow:

1. Cosmic rays
2. γ-rays
3. X-rays
4. Ultra Violet (UV) rays
5. Visible rays
6. Infra red rays
7. Micro waves
8. Radio waves.



These wave forms are labelled either in terms of wavelength (λ) or wave number ($\bar{\nu}$). Each type of electromagnetic radiation has both wave and particle properties.