Electromagnetic Waves

Q.No.1:
Which part of electromagnetic spectrum is used in radar systems?

CBSE Board Paper 2010

Q.No.2:
Name of physical quantity which remains same for microwaves of wavelength 1 mm and UV radiations of 1600 Å in vacuum.

CBSE Board Paper 2012

Q.No.3: Answer the following the questions:
(a) Name the em waves which are produced during radioactive decay of a nucleus. Write their frequency range.
(b) Welders wear special glass goggles while working. Why? Explain.
(c) Why are infrared waves often called as heat waves? Given their one application.

CBSE Board Paper 2014

Q.No.4: Name the parts of the electromagnetic spectrum which is
(a) suitable for radar systems used in aircraft navigation.
(b) used to treat muscular strain.
(c) used as a diagnostic tool in medicine.
Write in brief, how these waves can be produced.

CBSE Board Paper 2015

Q.No.5:
How are X-rays produced?

CBSE Board Paper 2011

Q.No.6:
(a) An em wave is travelling in a medium with a velocity $\vec{v} = v\,\hat{i}$. Draw a sketch showing the propagation of the em wave, indicating the direction of the oscillating electric and magnetic fields.

(b) How are the magnitudes of the electric and magnetic fields related to velocity of the em wave?

CBSE Board Paper 2013

Q.No.7: Why are microwaves considered suitable for radar systems used in aircraft navigation? **CBSE Board Paper 2016**

Q.No.8: How is the speed of em-waves in vacuum determined by the electric and magnetic field? **CBSE Board Paper 2017**

Q.No.9: (a) Why are infra-red waves often called heat waves? Explain.
(b) What do you understand by the statement, "Electromagnetic waves transport momentum"? **CBSE Board Paper 2018**

Q.No.10: Name the electromagnetic radiations used for (a) water purification, and (b) eye surgery. **CBSE Board Paper 2018**

Q.No.11:
(a) Identify the part of the electromagnetic spectrum used in (i) radar and (ii) eye surgery. Write their frequency range.
(b) Prove that the average energy density of the oscillating electric field is equal to that of the oscillating magnetic field.

CBSE Board Paper 2019

Q.No.12: Depict the fields diagram of an electromagnetic wave propagating along positive X-axis with its electric field along Y-axis.

CBSE Board Paper 2020

Q.No.13: Gamma rays and radio waves travel with the same velocity in free space. Distinguish between them in terms of their origin and the main application. **CBSE Board Paper 2020**