



INDIAN SCHOOL NIZWA - WORKSHEET

PHYSICS

CH: 8 EM WAVES

Name: _____

Date: _____

Class: XII Sec: A ____

1.	What are the directions of electric and magnetic field vectors relative to each other and relative to the direction of propagation of electromagnetic waves?
2.	What is displacement current?
3.	What is the difference between displacement current and conduction current?
4.	Name the current that can exist without the actual flow of charges through a region.
5.	Name the source of em waves .
6.	State the principle of production of em waves?
7.	What oscillates in em wave? Are these waves longitudinal or transverse?
8.	Explain the transverse nature of em wave.
9.	An em wave is travelling in a medium with a velocity $v = v_i$. the electric field oscillations of this wave is along y axis. 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 the velocity of the em wave?
10.	Write the properties of em waves.
11.	Explain briefly the fact that em wave carry energy. Why do we not feel the pressure due to sunshine?
12.	The magnetic field in a plane electromagnetic wave is given by $B_y = 2 \times 10^{-7} T \sin(0.5 \times 10^3 x + 1.5 \times 10^{11} t) T$ (a) What is the wavelength and frequency of the wave? (b) Write an expression for the electric field.
13.	Light with an energy flux of 18watts/cm ² falls on a reflecting surface at normal incidence. If the surface has an area of 20cm ² , find the average force exerted on the surface during a 30 min time span.
14.	Calculate the electric and magnetic fields produced by the radiation coming from a 100 watt bulb at a distance of 3m. Assume the efficiency of the bulb is 2.5% and it is a point source.
15.	Arrange in following in the descending order of wavelength: X rays, Radiowaves, Blue light, infrared radiation
16.	Arrange the following in the descending order of wavelength Gamma rays, IR rays, microwaves, yellow light, radiowaves
17.	Name the part of the em spectrum which is (a) Suitable for radar systems used in aircraft navigation (b) Treat muscular strain (c) Diagnostic tool in medicine (d) Write in brief, how these waves are produced .
18.	(a) Name the em wave used to take the photograph of bones. (b) How is this radiation produced ? (c) Mention its range of wavelength