

PHYSICS

QUESTIONS

Electromagnetic Waves

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VERY SHORT ANSWER QUESTIONS

1. Name the electromagnetic wave having maximum wavelength ?
2. On what factor does the velocity of electromagnetic wave in vacuum depend?
3. Write the speed of electromagnetic waves in terms of μ_0 and ϵ_0 .
4. Is the light emitted by an ordinary electric lamp an electromagnetic wave?
5. Give the range of microwaves? Where are they used?
6. Which waves are used in rader?
7. Why are microwave used in RADAR?
8. Which layer's of earth's atmosphere is useful for a long distance radio transmission?
9. What is the relation between field vector E and B ?
10. Which has longer wavelength : X-rays or γ -rays ?
11. Which has longer wavelength : red light or green light ?
12. What is the phase difference between electric and magnetic field vectors in electromagnetic waves?
13. What is the order of magnitude of frequency of longest and shortest waves in electromagnetic spectrum wave?
14. Name any two electromagnetic waves.
15. Why are short waves used in long distance broadcasts?
16. Name the radiation absorbed by ozone layer coming from sun.
17. Which part of the electromagnetic spectrum corresponds to wavelengths (i) 10^{-10} m (ii) 10^{-12} m.
18. Arrange the following in order of increasing frequencies : visible light , X-rays , radio waves , microwaves.
19. Name the electromagnetic spectrum involving wavelength
(i) 1 \AA (ii) 4000 \AA .
20. Name the four layers of earth's atmosphere.
21. Which part of electromagnetic spectrum has lowest wavelength ? Largest wavelength ?
22. Which part(s) , of electromagnetic spectrum corresponds to frequency
(i) 10^{20} Hz (ii) 10^{18} Hz (iii) 10^{14} Hz (iv) 10^6 Hz

SHORT ANSWER QUESTIONS

1. State four properties of electromagnetic waves.
2. Explain the terms (i) ground waves (ii) sky waves.
3. Write Maxwell's equations for electromagnetic waves.
4. How are electromagnetic waves produced ? Give the formula for frequency of waves produced.
5. What is height and role of ozone layer?
6. Have you heard about the damage of ozone layer? What factors do you think have caused this damage?
7. In a plane electromagnetic waves, the electric field oscillates at a frequency of 2.0×10^{10} Hz. What is the wavelength of the wave ?
8. The electric field vector in an electromagnetic wave travelling in free space has amplitude 120 N/C. Determine electrostatic energy density and the amplitude of the magnetic field vector.
9. An electromagnetic wave of wavelength 1 mm is propagating along x-axis. The direction of magnetic field vector is along Z-axis. What is the frequency of wave ? What is the direction of propagation of wave ?
10. Compare and contrast between X-rays and γ -rays.
11. State complete electromagnetic spectrum . Give at least one of each part.
12. What do you mean by ground waves and sky waves. Why is the transmission of signals using ground waves restricted to frequencies less than about 1500 Hz ? Why cannot T.V. signals be broadcasted using sky waves ?

Note : if any mistake on this, kindly inform on the mail id :

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Your Observation! Our Correction !!