

SIR CV RAMAN COACHING CENTRE IDAPPADI,SALEM**XLL PHYSICS UNIT -5****MODEL QUESTION PAPER****TOTAL MARK : 25 M****DATE : 05.06.2024****Choose the best correct answer (5 x 1= 5 m)**

1. Consider an oscillator which has a charged particle oscillating about its mean position with a frequency of 300 MHz. The wavelength of electromagnetic waves produced by this oscillator is

- (a) 1 m (b) 10 m (c) 100 m (d) 1000 m

2. An e.m. wave is propagating in a medium with a velocity $v = c/n$. The instantaneous oscillating electric field of this e.m. wave is along +y-axis, then the direction of oscillating magnetic field of the e.m. wave will be along:

- (a) -y direction (b) -x direction (c) +z direction (d) -z direction

3. Which of the following electromagnetic radiations is used for viewing objects through fog

- (a) microwave (b) gamma rays (c) X- rays (d) infrared

4. . Fraunhofer lines are an example of _____ spectrum.

- (a) line emission (b) line absorption (c) band emission (d) band absorption

5. Which one of them is used to produce a propagating electromagnetic wave?.

- (a) an accelerating charge (b) a charge moving with constant velocity
(c) a stationary charge (d) an uncharged particle

Answer any five questions (5 x 2 = 10m)

6. What is displacement current?

7. Why are e.m. waves non-mechanical?

8. What are electromagnetic waves?

9. Write down the integral form of modified Ampere's circuital law.

10. What are Fraunhofer lines? How are they useful in the identification of elements present in the Sun?

11. If the relative permeability and relative permittivity of a medium are 1.0 and 2.25 respectively, find the speed of the electromagnetic wave in this medium.

12. Compute the speed of the electromagnetic wave in a medium if the amplitude of electric and magnetic fields are 3×10^4 N/C and 2×10^{-4} T, respectively.

Answer all questions (2 x 5 = 10 m)

13. a) Explain the types of emission spectrum.

(OR)

b) Discuss the Hertz experiment.

14. a) Write short notes on (a) microwave (b) X-ray (c) radio waves (d) visible spectrum

(OR)

b) Write down Maxwell equations in integral form

prepared by

Dr.G.THIRUMOORTHY,M.SC,B.ED,PH.D (PHYSICS)

GOVT ARTS COLLEGE (A) SALEM -7

THIRUPHYSICS 1994@GMAIL.COM

8610560810 ,,,,,,