

Antenna and Wave Propagation

ANTENNA AND WAVE PROPAGATION
UNIT - I
ELECTROMAGNETIC RADIATION AND ANTENNA FUNDAMENTALS
PART - A (10x2 = 20 marks)

1. If the $R_r = 65 \Omega$ and loss resistance is 10% of an antenna, find efficiency?

Given:- Radiation resistance, $R_r = 65 \Omega$
Loss resistance, $R_l = 10 \Omega$

Solution:- Efficiency, $\eta = \frac{R_r}{R_r + R_l} \times 100$
 $= \frac{65}{65 + 10} \times 100 = 86.667\%$

Efficiency of an antenna $\Rightarrow \eta = 86.67\%$

2. Define: Half power beamwidth.

Ans: Half power beamwidth is defined as the "Angular width between two points on major lobe where the radiated power has fallen into half of its maximum value".

3. An antenna has the field pattern $E(\theta) = \cos^2 \theta$. find HPBW.

Given:- $E(\theta) = \cos^2 \theta$

Solution:- W.K.T $\Rightarrow \cos^2 \theta = 0.5$

Taking square on both sides $\Rightarrow \cos \theta = 0.707$

$\cos \theta = 0.707 \Rightarrow \theta = \cos^{-1}(0.707) = 45^\circ$

$\therefore \theta = 45^\circ$

$2\theta = 90^\circ \Rightarrow \text{HPBW} = 90^\circ$

21 Jul - 37 min - Uploaded by CUTM Odisha livebreathelovehiphop.com Divakar (Asst. Professor of ECE Department) of Centurion University presented. Antenna and Wave Propagation. Front Cover Sisir K. Das. Tata McGraw-Hill Education, - Antennas (Electronics) - pages. His main areas of interest are electromagnetic field theory, antennas and wave propagation, radar and microwave communication, and bio-instrumentation. Chapter 1 Radiation Fields of Wire Antennas 11 to 1. Chapter 5 Travelling Wave Antenna 5 1 to 5. 5. Chapter 2 Antenna Fundamentals 2 1 to 2. Chapter 3. Lecture Notes Antenna & Wave Propagation. CREC. Dept. of ECE. Page 3 with Non-uniform Amplitude Distributions - General considerations and Binomial Antennas wave and propagation. 1. Antennas and Propagation Key points; 2. 2 Introduction An antenna is a transducer that converts radio. Antennas & Propagation. CS Spring o Receiving antenna's equivalent to radiation pattern o Quarter-wave vertical antenna (or Marconi antenna). Antennas and Wave Propagation. Course Name. CRF Course ID. Contact Hours (Registered Sessions). Contact Hours (Synchronized Sessions). Antenna and wave Propagation, AWP Notes For exam preparations, pdf free download Classroom notes, Engineering exam notes, previous year questions for. Antennas and. Wave. Propagation. By: Harish, A.R.; Sachidananda, M. Oxford University Wave Propagation is primarily meant to fulfil the requirements of a. Course outcomes of Antenna and Wave Propagation (EC). After the successful completion of the course the student will be able to . 1. Understand the. Antenna and Wave Propagation [Kamal Kishore] on livebreathelovehiphop.com *FREE* shipping on qualifying offers. The aim of this book is to give an introduction to the . The hallmark text, often referred as antenna bible, in its fourth edition now also covers the fundamentals of wave propagation. Numerous solved examples and. Antenna and Wave Propagation (EC) to understand and apply the basic concepts of antennas like gain, beamwidth, directivity, radiation pattern, etc. In radio, an antenna is the interface between radio waves propagating through space and For line-of-sight communications or ground wave propagation, horizontally or vertically polarized transmissions generally remain in about the same. Plane wave-propagation. Reflected and refracted wave in lossless and lossy media. Transmission lines. Rectangular waveguides. Antenna and antenna. Antenna Arrays Array of two point sources, Array factor, n-element linear array Ionospheric Propagation Structure of ionosphere, Propagation of radio waves. Antenna theorems - Applicability and proofs for equivalence of directional Wave Propagation - I Concepts of propagation, Frequency ranges and types of.

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