

Antennas and Propagation

Written by Administrator

Saturday, 07 November 2009 05:27 -

Subject Code		:
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IA Marks		: 25
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No. of Lecture Hrs/Week		: 04
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Exam Hours		: 03
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Total no. of Lecture Hrs.		: 52
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Exam Marks		: 100
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PART - A

Unit - 1

Antenna Basics: Introduction, basic Antenna parameters, patterns, beam area, radiation

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intensity, beam efficiency, diversity and gain, antenna apertures, effective height, bandwidth, radiation, efficiency, antenna temperature and antenna field zones.

8 Hours

Unit - 2

Point Sources and Arrays: Introduction, point sources, power patterns, power theorem, radiation intensity, field patterns, phase patterns. Array of two isotropic point sources, non-isotropic but similar point sources, principles of pattern multiplication, examples of pattern synthesis by pattern multiplication, non-isotropic

point sources, broad side array with non uniform polar amplitude distribution, broad side versus

end fire array, direction of maxima for arrays of n isotropic point sources of equal amplitude and spacing.

10 Hours

Unit - 3

Electric dipoles and thin linear antennas: Introduction, short electric dipole, fields of a short dipole, radiation resistance of short dipole, radiation resistances of $\lambda/2$ Antenna, thin linear antenna, micro strip arrays, low side lobe arrays, long wire antenna, folded dipole antennas.

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2. **Antennas and Wave Propagation** - Harish and Sachidananda: Oxford Press 2007

Reference Books:

1. **Antenna Theory Analysis and Design** - C A Balanis, 2nd ED, John Wiley, 1997

2. **Antennas and Propagation for Wireless Communication Systems** - Sineon R Saunders, John Wiley, 2003.

3. **Antennas and wave propagation** - G S N Raju: Pearson Education 2005