Written by Administrator Saturday, 07 November 2009 07:26 -	
Subject Code	
O6TE64 IA Marks	
25	
No. of Lecture Hrs/ Week	
04	
Exam Hrs	

Written by Administrator Saturday, 07 November 2009 07:26 -
03
Total no. of Lecture Hrs.
52
Exam Marks
100
100
PART - A
Unit - 1 00000000000000000000000000000000000
Transmission – Line THEORY: The transmission Line general solution, The distortion less Line, The telephone cable, Reflection on a Line not terminated in Z
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, Open and short circuited Lines, Reflection loss, Insertion loss, T and PI sections equivalent to Lines, Constant K LPF & HPF.

6 Hours

Unit - 2&3

The Line at radio FREQUENCIES: Constants for the Line of zero dissipation, Standing waves; nodes; standing wave ratio, Input impedance of open and short circuited Lines, The quarter wave Line; impedance matching, single stub impedance matching on a Line. The smith circle diagram, Application of the Smith chart, Double stub impedance, Open and Short circuit impedances when considering dissipation, Quarter and Half wave Lines of small dissipation.

12 Hours

Unit - 4

Antenna Basics: Introduction, basic Antenna parameters, patterns, beam area, radiation intensity, beam efficiency, diversity and gain, antenna apertures, effective height, bandwidth, radiation, efficiency, antenna temperature and antenna filed zones.

6 Hours

PART - B

Written by Administrator Saturday, 07 November 2009 07:26 -UNIT - 5 Point Sources and Arrays: Introduction, point sources, power patterns, power theorem, radiation intensity, filed patterns, phase patterns. Array of two isotropic point sources, non-isotropic but similar point sources, principles of multiplication, examples of pattern synthesis by pattern multiplication, non-isotropic point sources, broad side array with non unipolar amplitude distribution, broad side versus end fire array, direction of maxima fire arrays of n isotropic point sources of equal amplitude and spacing. 8 Hours Unit - 6

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.

6 Hours

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Unit - 7

Loop, slot, patch and horn antenna: Introduction, small loop, comparison of far fields of small loop and short dipole, loop antenna general case, far field patterns of circular loop, radiation resistance, directivity, slot antenna, Balinet's principle and complementary antennas, impedance of complementary and slot antennas, patch antennas, horn antennas, rectangular horn antennas.

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unit - 8

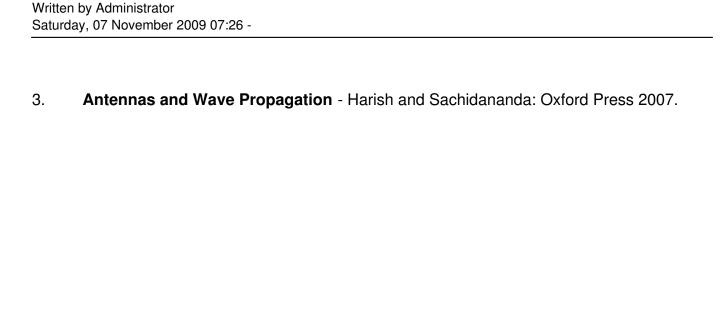
Antenna Types: Helical Antenna, Yagi-Uda array, corner reflectors, parabolic reflectors, log periodic antenna, lens antenna, antenna for special applications – sleeve antenna, turnstile antenna, omni directional antennas, antennas for satellite antennas for ground penetrating radars, embedded antennas, ultra wide band antennas, plasma antenna.(Note: No derivations for the topics in this section).

6 Hours

Text bookS:

- 1. **Network Lines and Fields** John D Ryder, 2e, PHI, 2003.
- 2. **Antennas**, John D. Krauss, III (SEI) edition, McGraw-Hill International edition, 2006.

Reference Books:



- Antenna Theory Analysis and Design C A Balanis, 2nd ED, John Wiley, 1997.
- 2. **Antennas and wave propagation -** G S N Raju: Pearson Education 2005.