for Ad hoc wireless Networks, Design goals of a transport layer protocol for Ad hoc wireless Networks.

UNIT - 7

SECURITY: Security in wireless Ad hoc wireless Networks, Network security requirements, Issues & challenges in security provisioning.

UNIT - 8

QUALITY OF SERVICE IN AD HOC WIRELESS NETWORKS: Introduction, Issues and challenges in providing QoS in Ad hoc wireless Networks, Classification of QoS solutions.

TEXT BOOK:

1. **"Ad hoc wireless Networks"**, C. Siva Ram Murthy & B. S. Manoj, Pearson Education, 2nd Edition, reprint 2005.

REFERENCE BOOKS:

1. **"Ad hoc wireless Networks"**, Ozan K. Tonguz and Gianguigi Ferrari, Wiley
2. **"Ad hoc wireless Networking"**, Xiuzhen Cheng, Xiao Hung, Ding-Zhu Du, Kluwer Academic publishers.

OPTICAL COMPUTING

Subject Code	: **10EC845**	IA Marks	: 25
No. of Lecture Hrs/Week	: 04	Exam Hours	: 03
Total no. of Lecture Hrs.	: 52	Exam Marks	: 100

UNIT - 1

MATHEMATICAL AND DIGITAL IMAGE FUNDAMENTALS: Introduction, Fourier Transform, discrete Fourier transform, basic diffraction theory, Fourier transform property of lens , sampling and quantization, image enhancement, image restoration.

UNIT - 2

LINER OPTICAL PROCESSING: Introduction, photographic film, spatial filtering using binary filters, holography, inverse filtering, Deblurring.

UNIT - 3

ANALOG OPTICAL ARITHMETIC: Introduction, Halftone processing, nonlinear optical processing, Arithmetic operations.

UNIT - 4

RECOGNITION USING ANALOG OPTICAL SYSTEMS: Introduction, Matched filter, Joint transform correlation, Phase-only filter, Amplitude modulated recognition filters, Generalized correlation filter, Melllin transform based correlation.

UNIT - 5

DIGITAL OPTICAL COMPUTING DEVICES: Introduction, Nonlinear devices, Integrated optics, Threshold devices, Spatial high modulators, Theta modulation devices.

UNIT - 6

SHADOW-CASTING AND SYMBOLIC SUBSTITUTION: Introduction, Shadow casting system and design algorithm, POSC logic operations, POSC multiprocessor, Parallel ALU using POSC, Sequential ALU using POSC, POSC image processing, Symbolic substitutions, Optical implementation of symbolic substitution, Limitations and challenges.

UNIT - 7

OPTICAL MATRIX PROCESSING: Introduction, Multiplication, Multiplication using convolution, Matrix operations, Cellular logic architecture, Programmable logic array.

UNIT - 8

ARTIFICIAL INTELLIGENT COMPUTATIONS: Introduction, Neural networks, Associative memory, Optical implementations, Interconnections, Artificial Intelligence.

TEXT BOOK:

1. **"Optical Computing An Introduction"**, Mohammed A. Karim, John Wiley & Sons, 1992.

REFERENCE BOOKS:

1. **Optical Signal Processing** by Vanderlugnt John willy & sons NY 1992.
2. **Signal Processing in Optics** - Bradly G Boore Oxford University Press 1998.

D.V.

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