UNIT - 2

SYMMETRIC CIPHERS: Symmetric Cipher Model, Substitution Techniques, Transposition Techniques, Simplified DES, Data encryption standard (DES), The strength of DES, Differential and Linear Cryptanalysis, Block Cipher Design Principles and Modes of Operation, Evaluation Criteria for Advanced Encryption Standard, The AES Cipher.

UNIT - 3

Principles of Public-Key Cryptasystems, The RSA algorithm, Key Management, Diffie - Hellman Key Exchange, Elliptic Curve Arithmetic, Authentication functions, Hash Functions.

UNIT - 4

Digital signatures, Authentication Protocols, Digital Signature Standard.

UNIT - 5

Web Security Consideration, Security socket layer (SSL) and Transport layer security, Secure Electronic Transaction.

UNIT - 6

Intruders, Intrusion Detection, Password Management.

UNIT - 7

MALICIOUS SOFTWARE: Viruses and Related Threats, Virus Countermeasures.

UNIT - 8

Firewalls Design Principles, Trusted Systems.

TEXT BOOK:
1. **Cryptography and Network Security**, William Stalling, Pearson Education, 2003.

REFERENCE BOOKS:
1. **Cryptography and Network Security**, Behrouz A. Forouzan, TMH, 2007.
2. **Cryptography and Network Security**, Atul Kahate, TMH, 2003.

OPTICAL NETWORKS

Subject Code	: **10EC833**	IA Marks	: 25

UNIT - 1
INTRODUCTION TO OPTICAL NETWORKS: Telecommunication networks, First generation optical networks, Multiplexing techniques, Second generation optical networks, System and network evolution. Non linear effects SPM, CPM, four wave mixing, Solitons.

UNIT - 2
COMPONENTS: Couplers, isolators and Circulators, Multiplexes and filters Optical amplifiers.

UNIT - 3
Transmitters, detectors, Switches, Wavelength converters.

UNIT - 4
TRANSMISSION SYSTEM ENGINEERING: System model, Power penalty, Transmitter, receiver, optical amplifiers, Crosstalk, Dispersion, Overall design Consideration.

UNIT - 5
FIRST GENERATION NETWORKS: SONET/SDH, Computer interconnects, Mans, Layered architecture for SONET and second generation networks.

UNIT - 6
WAVELENGTH ROUTING NETWORKS: Optical layer, Node design, Network design and operation, routing and wavelength assignment architectural variations.

UNIT - 7
VIRTUAL TOPOLOGY DESIGN: Virtual topology design problem, Combines SONET/WDM network design, an ILP formulation, Regular virtual topologies, Control and management, Network management configuration management, Performance management, fault management.

UNIT - 8
ACCESS NETWORKS: Network architecture overview, present and future access networks, HFC, FTTC, Optical access networks Deployment

considerations, Photonic packet switching, OTDM, Multiplexing and demultiplexing Synchronisation.

TEXT BOOK:
1. **Optical networks: A practical perspective** Kumar Sivarajan and Rajiv Ramaswamy: Morgan Kauffman 1998.

REFERENCE BOOKS:
1. **Optical Communication Networks**: Biswajit Mukherjee: TMG 1998.
2. **Optical Networks**, Ulysees Black: Pearson education 2007.

HIGH PERFORMANCE COMPUTER NETWORKS

Subject Code	: **10EC834**	IA Marks	: 25
No. of Lecture Hrs/Week	: 04	Exam Hours	: 03
Total no. of Lecture Hrs.	: 52	Exam Marks	: 100

UNIT - 1
History of Communication Networks, Networking principles, Future networks Internet, Pure TAM Network, Cable Network, Wireless.

UNIT - 2
NETWORK SERVICES AND LAYERED ARCHITECTURE: Applications, Traffic characterization and quality of services, Network services, High performance networks, Network Elements., Layered applications, Open data network model, Network architectures, Network bottlenecks.

UNIT - 3
INTERNET AND TCP/IP NETWORKS: Multicast IP, Mobile IP, TCP and UDP, Applications, FTP, SMTP. Internet success and limitations, Performance of TCP/IP Networks, Performance of circuit switched networks.

UNIT - 4
SONET, DWDM, FTH, DSL, Intelligent networks CATV.

UNIT - 5

D.N.

H.O.D.
Dept. Of Electronics & Communication
...