

MCA SEMESTER – II MCA-24 : NETWORKING – I

Teaching Scheme (Per Week)		Examination Scheme					
		Internal		External		Total	
Th. (HOURS)	Pr. (HOURS)	Th. (MARKS)	Pr. (MARKS)	Th. (MARKS)	Pr. (MARKS)	Th. (MARKS)	Pr. (MARKS)
4	--	30	--	70	--	100	--

UNIT I (25)%

Basics of Computer Networks :

Uses of Computer Networks, Network Hardware and Software, Reference Models - OSI reference model, TCP/IP reference model, Comparison between OSI and TCP/IP model, Transmission Media - Magnetic Media, Twisted Pair, Baseband and Broadband Coaxial Cable, Fiber Optics, The Telephone System – Its Structure, The Local Loop, Transmission Impairments, Modems, Multiplexing (FDM, TDM), Communications Satellites – Geosynchronous and Low-orbit Satellites, Connecting Devices – Repeater, Bridge, Router, Gateway

UNIT II (25)%

Internet Address :

Universal Identifier, Address Classes, Special Addresses, Subnet, Supernet and Masking, Delivery and Routing of IP Packets – Connection oriented Vs Connectionless services, Direct Vs Indirect Delivery, Routing Methods(Next-Hop, Network specific, Host specific, Default routing), Static Vs Dynamic routing, Mapping Internet Address to Physical Addresses (Introduction to ARP and RARP)

UNIT III (25)%

Important Issues for Computer Networks :

Ethernet Technology (Thin-Wire, Twisted-Pair, Fast Ethernet), Dynamic Host Configuration Protocol – Need for Dynamic IP, Dynamic IP assignment, DHCP Scope, DHCP Lease Mechanism, Domain Name System – Its purpose and how it works, Simple Network Management Protocol – Management Systems and Agents, Management Information Base, Introduction to Applications: TELNET, Rlogin, FTP, TFTP, TCP/IP Utilities: Ping, Ipconfig, Route, Ftp, Tftp, Arp, Netstart, Rexec

Unit IV (25)%

Network Security

Protecting resources on networks, Traditional Cryptography – Substitution Ciphers, Transposition Ciphers, One-time Pads, Fundamental Cryptographic Principles, Secret-key and Public-key Algorithms, Digital Signature, Introduction to Web Servers(IIS, Apache, Tomcat) – Security features in web servers, Introduction to Firewall and Antivirus software, Proxy Access

Books:

1. Computer Networks 3rd Edition PHI, - Andrew S. Tanenbaum
2. Computer Networks 4rd Edition PHI, - Andrew S. Tanenbaum
3. TCP/IP Protocol Suite, Tata McGraw Hill Edition - Behrouz A. Forouzan
4. Internetworking with TCP/IP-Principles, Protocols & Architectures - Douglas E. Comer
5. Security Complete - BPB Publications

Question Paper Scheme: Section – I

- Q.1 - Objective Type Unit I & II (11) Marks
 Q.2 - Unit-I OR Q.2 Unit-I (12) Marks

Q.3 - Unit-II OR Q.3 Unit-II (12) Marks

Section – II

Q.4 - Objective Type Unit III & IV (11) Marks

Q.5 - Unit-III OR Q.5 Unit-III (12) Marks

Q.6 - Unit-IV OR Q.6 Unit-IV (12) Marks