MSE-301(A) WEB ENGINEERING

Introduction: layering, DNS - encapsulation, de-multiplexing, client /server model, port numbers, standardization process, the Internet.
Link layer: introduction, Ethernet and IEEE 802 encapsulation, trailer encapsulation, SLIP, PPP- Loop back interface, MTU.
Internet protocol: introduction, IP header, IP routing, subnet addressing, subnet mask-special case of IP addresses, a subnet example.

Address Resolution Protocol: Introduction, an example, ARP cache, ARP packet format, ARP examples, Proxy ARP, ARP command.
RARP: Introduction, RARP packet format, RARP examples, RARP server design.
ICMP: Introduction, ICMP message types, ICMP address mask request and reply-ICMP timestamp request and reply- 4.4 BSD processing of ICMP Messages.

Ping Program: Introduction, ping program, IP record route option, IP time stamp option.
Trace route program: Introduction, trace route program operation, LAN output, and WAN output- IP source routing option. IP routing: Introduction, routing principles, ICMP host, and ICMP redirect errors. Dynamic Routing protocols: introduction, dynamic routing, RIP-OSPF, BGP, CIDR.

UDP: introduction, UDP header, UDP checksum, IP Fragmentation, UDP Server design.
DNS Introduction- basics, message format, simple example, pointer quires, resource records, caching, UDP. TFTP: introduction, protocol, security. BOOTP: introduction, packet format, server design, through router.

TCP: Introduction, services, headers, connection establishment and termination, timeout of connection establishment- maximum segment size- half, close, state transition diagram, reset segments, simultaneous open and close- options, server design.

SNMP Introduction, protocol, structure of management information, object identifiers, management information base, instance identification.
Telnet: rlogin protocols, examples, telnet protocol and examples. FTP, protocol, examples, SMTP protocols, examples, NFS, TCP/IP Applications.

Reference Books :
1. W. Richard Stevens, TCP/IP Illustrated Volume-I "The Protocols ", Addison W 2. Jaiswal .S, TCP\IP Principles, Architecture, Protocols And Implementation, First Edition, Galgotia Publications Pvt Ltd.

MCSE 302 (A) – Data Warehousing & Mining

Introduction : Data Mining: Definitions, KDD v/s Data Mining, DBMS v/s Data Mining , DM techniques, Mining problems, Issues and Challenges in DM, DM Application areas.

Association Rules & Clustering Techniques: Introduction, Various association algorithms like A Priori, Partition, Pincer search etc., Generalized association rules. Clustering paradigms; Partitioning algorithms like K-Medioid, CLARA, CLARANS; Hierarchical clustering, DBSCAN, BIRCH, CURE; categorical clustering algorithms, STIRR, ROCK, CACTUS.

Other DM techniques & Web Mining: Application of Neural Network, AI, Fuzzy logic and Genetic algorithm, Decision tree in DM. Web Mining, Web content mining, Web structure Mining, Web Usage Mining.

Temporal and spatial DM: Temporal association rules, Sequence Mining, GSP, SPADE, SPIRIT, and WUM algorithms, Episode Discovery, Event prediction, Time series analysis. Spatial Mining, Spatial Mining tasks, Spatial clustering, Spatial Trends.

Data Mining of Image and Video : A case study. Image and Video representation techniques, feature extraction, motion analysis, content based image and video retrieval, clustering and association paradigm, knowledge discovery.

Reference Books :

1. Data Mining Techniques ; Arun K.Pujari ; University Press.
2. Data Mining; Adriaans & Zantinge; Pearson education.
3. Mastering Data Mining; Berry Linoff; Wiley.
4. Data Mining; Dunham; Pearson education.
5. **Text Mining Applications, Konchandy, Cengage**