COMPUTER NETWORKS

QUESTION BANK

UNIT-1

1) Explain with diagram, the OSI reference model for computer network in brief.
2) What is FDM and TDM? Explain in detail with diagram.
3) Write a note on Guided Transmission Media.
4) Explain the TCP/IP Reference model in detail.
5) Listout the uses of Computer Networks and Explain.
6) Write a detailed note on Network Hardware.

UNIT-2

1) Explain pure ALOHA and slotted ALOHA Protocol with neat diagram?
2) With a neat figures, explain briefly i) Go Back N ii) Selective Repeat ARQ Protocols.
3) Find the code word C(X), using CRC for the information $d(X) = X^3+1$ with generator polynomial $g(X) = X^3+X^2+X$.
4) Write the Data link layer design issues in brief.
5) Explain CSMA and CSMA/CD Protocol in detail with appropriate flowchart.
6) Explain any two sliding window protocols in detail.
7) Explain the working of Repeaters, Hubs, Bridges, Switches, Routers and Gateways with one application for each.

UNIT-3

1) Evaluate how Traffic Shaping is important for Quality of Service in Routing.
2) Explain Distance Vector Routing and Link State Routing in detail.
3) Explain network layer design issues in detail.
4) What is the need to change from IPV4 to IPV6? Write IPV6 header and describe its field.

5) Explain Hierarchical Routing and Multicast Routing with diagram.
6) Explain the approaches to Congestion Control in Network layer.
7) Explain Tunneling and Internetwork Routing concept with diagram.

UNIT-4

1) Briefly Explain the congestion control mechanisms in the transport layer.
2) Explain TCP and UDP Header specifications along with differences between them.
3) Explain the Elements of Transport Protocols.
4) Explain Real Time Transport Protocol (RTP) in detail.

UNIT-5

1) What is the significance of DNS? Explain DNS Concept in detail.
2) Write a detailed note on Electronic Mail.
3) Write a detailed note on World Wide Web.

EXTRA:

1) Explain network software with respect to protocol hierarchies, service primitives, connection oriented Vs connection less services.
2) Explain unguided transmission media in detail.
3) Explain multiplexing in detail with a relevant diagram.
4) Describe the structure of a telephone system in detail with respect to PSTN
5) Describe error detection methods in detail (RC - one problem).
6) Explain the elementary data link protocol in detail.
7) A slotted ALOHA network transmits 300-bit frames on a shared channel of 400 kbps. What is the throughput if the system (all stations together) produces?
8) Mention and discuss collision free protocols in detail with each real time application
9) A network using CSMA/CD has a bandwidth of 20 Mbps. If the maximum propagation time (including the delays in the devices and ignoring the time needed to send a jamming signal) is 45.6 μs, what is the minimum size of the frame?
10) Describe Link State Routing and Routing in Ad Hoc Networks in detail
11) Discuss in detail the concepts of subnetting and supernetting with an example for each.
12) Discuss IPv4 and IPV6 protocol header specifications along with differences between them.
13) Explain ARP and RARP in detail.
14) Explain ICMP in detail.