<u>Subject: Computer Networks</u>   Class : SYBScIT

Unit I

1) What is Data communication? Explain different modes of data flow between devices.
2) List and Explain functions OSI model.
3) What is Data communication? Explain different network topology.
4) Draw the layered architecture of TCP/IP model. Explain functions of all the layers.

5) Explain components of data communication.
6) What do you mean by Transmission Impairments? Give the reasons of the same.
7) Write a short note on Amplitude Modulation/ Frequency Modulation/ Phase Modulation.
8) Explain the following terms of Data Transmission 1. Parallel Transmission 2. Serial transmission.
9) State and explain various types of networks. What are the different ways to access the Internet?
10) Discuss the different quality of service characteristics for overall network performance.
11) What are the different modes in which the transmission of binary data can be accomplished? Explain each mode.
12) Explain following terms with respect to Sin wave: Wavelength, Amplitude, Phase, and Frequency.
13) Write a short note on Time and frequency domains of a Sine wave.
14) Explain different types of Line coding scheme for Digital to digital signal conversion.

Unit II

1) Differentiate between Frequency Division Multiplexing (FDM) and Time Division Multiplexing (TDM).
2) Write a short note on Spread Spectrum Modulation with its Application.
3) Discuss the major classification of transmission media.
4) What is Packet Switching? Explain its methods of implementation
5) Define Error under scope of Networking and explain its types.
6) What are the functions of data link layer? What is the relationship between packets and frames? Explain the different methods of framing.
7) What is virtual circuit network? What are its characteristics?
8) Explain the three phases of communication in a circuit switched network.
9) Write a short note on Cyclic Codes.
10) Draw and explain the packet format of ARP protocol.
11) Write a short note on Circuit switched network.

Unit III

1) What is HDLC? What are the different types of frames in HDLC? Explain the different fields in HDLC frames.
2) Explain the transition phases of point-to-point protocol.
3) Discuss the addressing mechanisms of IEEE 802.11 project.
4) Explain the architecture of Bluetooth.
5) What is Virtual LAN? How are stations grouped into different VLANs? Explain.
6) Explain ALOHA system with its two versions.
7) Discuss GO BACK N ARQ in detail.

8) Differentiate between Satellite Communication and Optical Communication.
9) Explain the following Connecting devices in networking. A) Bridge   B) Hub   C) Router   d) Switch
10) Explain CSMA with Collision Detection.
11) Discuss Stop-and-Wait protocol in detail.
12) Explain CSMA with Collision Avoidance.
13) Explain different Controlled access protocols.
14) Write a short note on Cellular Telephony.
15) Write a short note on Satellite Networks.

Unit IV

1) Explain the terms 1. Connection Oriented Network Services. 2. Connectionless Network Services.
2) Draw and Explain IPv4 header structure
3) Explain the two ways of forwarding of IP packets.
4) What is dynamic host configuration protocol? Explain the DHCP message format.
5) What is routing information protocol? Explain the RIP algorithm.
6) Draw and explain the IPv6 header format.
7) What are the different transition strategies from IPv4 to IPv6? Explain.
8) List and explain different services provided by Network Layer.
9) Write a short note on Mobile IP.
10) Explain ICMPv4 protocol.
11) Explain OSPF protocol in detail.
12) Write a short note on RIP protocol.
13) Draw and Explain IPv6 header structure.

Unit V

1) Write a short note on TCP.
2) Explain Addressing Issues of transport Protocol.
3) What do you mean by Domain Name System? What is the use of the same?
4) . Explain Simple Mail Transfer Protocol (SMTP).
5) Write a short note on following: 1. TELNET   2. FTP
6) Differentiate between TCP and UDP.
7) With the help of a diagram, explain the Go-Back-N protocol.
8) Explain the persistent and non-persistent connection
9) Explain the architecture of electronic mail.
10) What is DNS? How is name-address resolution done?
11) What is secure shell? Explain the components of secure shell.
12) Explain selective repeat protocol.