**Lecture 1:**

**1.** Physical address and Logical address

**2.** Classful addressing

2.1 Classful addressing notation

2.1.1 Binary

2.1.2 Dotted decimal

2.2 Classes and IP address(IPv4)

2.2.1 Class A,B,C,D,E

2.2.2 DHCP client address

2.2.3 Loop-back address

2.3 Types of IP addresses( public and private IP address )

2.4 Assigning private IP address in land

2.5 Assigning public IP address by ISP

2.6 Subnetting and supernetting

2.6.1 Net ID

2.6.2 Subnet ID

2.6.3 Direct broadcasting address

2.6.4 Limited broadcasting address

**3.** Classless addressing

3.1Subnetting and supernetting

**Lecture 2**:

**3.** Classless addressing

3.2 Equal and variable length subnetting

3.3 Host on network

**4.** Dynamic assignment of IP address by ISP

**5.** Fault tolerance in network interface

**6.** Ping( packet internet grouper )

**7.** ARP( Address resolution protocol)

**8.** MAC address

**9.** Types of transmission

9.1 Simplex transmission

9.2 Half duplex transmission

9.3 Full duplex transmission

**10.** Transmission parameters

10.1 Transmission time

10.2 Propagation time

10.3 Total time

10.4 Bandwidth

10.5 Link utilisation

10.6 Round trip time

**11.** Trade off between propagation time and transmission time in LAN and WAN

**12.** Circuit switching and packet switching

**13.**  Physical LAN topologies

13.1 Mesh

13.2 Star

13.3 Bus

**14.** Baseband and Broadband signal

**15.** Bell lab experiment

**16.** Shannon experiment

**17.** IPv6 address(Syntax & Calculation)

**18.** IPv6 address assignment

**19.** Anycasting

**Lecture 3:**

**20.** OSI & TCP/IP Model

20.1 Application layer

20.2 Presentation layer

20.3 Session layer

20.4 Transport layer

20.5 Network layer

20.6 Data link layer

20.7 Physical layer

**21.** Data link layer

21.1 Flow control policies

21.1.1 Stop and Wait ARQ

21.1.2 Go Back N ARQ

21.1.3 Selective Repeat ARQ

21.2 Error control policies

21.2.1 Error correction policies

21.2.1.1 Hamming code

21.2.2 Error detection policies

21.2.2.1 Parity scheme

21.2.2.2 Hamming distance

21.2.2.3 Checksum

21.2.2.4 CRC(cyclic redundancy check)