1.

* What is **internet**
* Network structure.
* **Protocol**
* **Intra** and **inter** – net

2.

* **Network edge, end system, access network, communication links**
* **Access network**
* Communication link
* **Network core**
* **Network structure**

**3.**

* Network structure **figure**, network core access network

**4.**

* HOW a client communicates with another client or host ?  
  **client server network** ->[see page 32 for more]
* How **forwarding message on network structure**   
  **packet switching**

**6.**

* Physical guided media(twisted pair)
* **Queueing delay** (packet switching )

**8.**

* Math example

10.

* Math example with one hope

12.

* Packet switching vs circuit switching

13

* Mathematical explanation of **Packet switching vs circuit switching**

15.

* **How we can create network of network**How we can create network structure

16.

* **tier1,tier2, content provider**
* **why we connect all these networks**

**18.**

* **Sources of packet delay (all delays reason)**
* Queuing delay **depends on 3 terms**

20.

* **Math** example with **all delays**

23.

* Real internet delay **(Tracerout ), process**

24

* Throughput

**26**

* Why **layering** in networking (TCP layering )
* **TCP layer**

**27.**

* Encapsulation 🡪souse to destination (pic ready) 3pages

30

* **Network security**
* Types of **attacks (**Denial of services, sniffing, fake addresses**)**

31.

* Internet application Making(what we need or not need to consider making internet app)
* Application architecture **(client server, p2p)**

**33.**

* **How processes works on 2 communicating devices.**
* **Socket**

**37.**

* **Transport services** (TCP VS UDP)

39

* HTTP
* http uses TCP
* maintain no information history

**41.**

* HTTP has 2 types of connections
* Persistent & non persistent

**44.**

* RTT (round trip time)
* Non persistent HTTP response time

**45.**

* persistent connection
* **issues in non-persistent**

**46.**

* **cookies (why we use cookies)**
* 4 components of cookies
* Drawbacks of cookies

48

* **Web caching**
* In short: How web caching works

50

* How web caching works(steps)

51

* Why we use **web caching (benifits)**

54

* How web caching make internet faster.(with math)

57.

* FTP (how ftp works **in short**)

58.

* ftp working procedure

59.

* User agent, mail server, simple mail transfer protocol( SMTP )
* SMTP (reliable mail transfer protocol)

70

* How mails are sent(in short(with smtp))
* How mails are sent(example)

90

* SMTP

91.

* Mail Access protocol(pop3,IMAP(use))

FROM here 2nd Khata:

94.

* DNS
* DNS with caching (p104)

96.

* **Why not centralized DNS**

98.

* How DNS servers interacts between

100.

* Local DNS

101.

* DNS name resolution examples

104.

* DNS caching/imporove delay

106.

* DNS records(resource records (RR) ), we use type a

110.

* inserting records in DNS database example
* how people visit the website.

112.

* Attack DNS(ddos)

114.

* P2p
* How much time to distribute file from one server

116.

* How much time to distribute file in P2P
* Real life example

119

* Hash table (DHT para diagram, circular DTH, peer churn)

125. peer churn

126.

* Socket programming
* Socket programming With UDP
* Socket programming With TCP

134.

Transport layer