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Define the following:

1. Unreliable service

The internet network clear protocol has a name IP for internet protocol IP provides logical communication between host the IP service model is a best effort delivery service this means that IP mark is best to deliver segments between communicating hosts but it makes no guarantees it does not guarantee segment delivery it does not guarantee order delivery of segment and it does not get really guaranteed the integrity of the data in the segments for all the reasons it is set to be an unreliable service

2. Logical communication

This means that from an application prospective it is as it is the host running the processes

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were directly connected in reality the host may be opposite side of the planet connector while numerous routers and white train of types application processes use.

The logical communication provided by the transparent layer to send message to each other from the worry of the details of physical interest structure used to carry this messages.

2. multiplexing:

The job of gathering data chunks at the source first from different socket and consulating each data chunk with header information that will later be used in b multiplexing to create segments and passing the segments to the network is called multiplexing

3. Demultiplexing

the transport layer examines the set of field in segments to identify the receiving socket

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and the derivatives the segment to the socket the job of delivering the data in the transport layer segment in the correct socket is called de multiplexing

- reliable data transfer:
For connected oriented service provided by TCP International security to have a reliable data transfer RDT protocol to ensure delivery of all placards n all enable the receivers in order to application their RDT protocol must use pipelining

- This allows the center to have a large number of etiquette in the pipelining

Q2. Answer the following

i. Explain transport layer multiplexing and demultiplexing.

Ans: gathering data from multiple application processes of sender and following that data with handing them as a whole to the internet receiver is called multiplexing.

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delivering receive segments at receiver side to the correct app player process is called as Demultiplexing

- Prresenting data from a application at center side to an application and destination side sender must know and IP address of destination and part of the number of applications to which he want to transfer the data

- For example let us consider two messaging apps that are widely used nowadays like hike and WhatsApp suppose center and receiver has this application installed in their system suppose A1 to send the message to be in WhatsApp and hike in both order to do so A must mention the IP address of B and destination part number of WhatsApp while sending the message through WhatsApp application similarly for a hike another message from both the apps will be raped by along the appropriate headers and sent to the single message to the receiver this is called multiplexing at the destination

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received messages on web and consistent messages are sent to appropriate application by looking at the destination port number.

Q3. Explain UDP segment structure

Ans UDP header is a 8x fixed and simple header while 40cc it may vary from 20 by 60 by 48 by its content all necessary header information and remaining part consists of data UDP port number fields are 8 16-bit long.

Therefore range for port number defined from 0 to 65536 what number 0 is reserved port number helps to distinguish different requests or process.

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Q4. Explain TCP segment structure

TCP segment consists of database to send to the header edit is added to the database as shown:

- source port address
16-bit fields that hold support address of the application that is sending the data segment

-destination port address
16-bit fields holds the address of the app in the host latest receiving the data segment

-segment number
can you do it filled at whole sequence number that is the bite number of the first bite that is sent in that particular segment it is used to reassemble the message at the receiving and if the segments are received out of order

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Window size :

- This field tells the window size of the sending TCP in bytes.

Urgent pointer:

- This field is used to point to data that is urgently required that needs to reach the receiving process the earliest the value of this field is added to the sequence numberto get the white number of the last urgent byte.

QS Expanded principles of reliable data transfer

- Transport layer protocols are central piece of lead architecture this provides the logical communication between application process this process use theological communication to transfer data from transportation network and this transfer of data should be reliable and secure the data is transferred in the form of the package but the problem occurs in relevant transfer of data

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The problem of transferring the data differs not only the transport layer but also the application layer as well as in the link layer the problem occurs when reliable services runs as a and reliable service.

For example :
TCP is a reliable data transfer protocol that is implemented top of unreliable rare that is internet protocol is end-to-end network layer protocol.

in this model we have designed a sender and receiver sites for protocol over reliable channel.

reliable transfer of data that receives the data from the above their breakup message in the form of segments and put the header on each segment entrance for below layer receives

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the segment and remove the header from each segment and make it packet by adding to header.

- The data which is transferred from the above has no transfer data with corrupted or loss and are delivered in the same sequence in which they were sent to the below layer is reliable data transfer protocol.
- The service model is offered by TCP to internet application that in this transfer of data.

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Q6
Explain level data transfer protocol in detail
Same as answer 5.

Q7. Explain go back N protocol
Go back n protocol also called us go back automatic repeat frequencies is a data link there protocol that uses a sliding window method bar reliable and subsequent of data from citizen case of sliding window protocol having ascent window size of an and receiving window size of one.

The sequence number has a number as modulo for example if the sending window sizes for than the sequence number will be 0 1 2 3 0 1 2 3 0 1 and so on

The number of between the sequence number 1 5 2 to generate binary sequence
0 0 0 0 1 1 0 1 1
The size of the receiving window is 1

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Q8. Explain case study of talent for sequence and acknowledgment number.

Ans: suppose who stay initiated for Taylor session with hosts a initiatives the session it is able the client and host B labeled the server each character tied by the user will be sent to the remote hose the whole remote host will send back a copy of character which will be displayed on the tennis users when the eco bank is used the insurance with the characters in by the talent user have already been resident to the remote side each character that travels the network twice the time character is displayed on the users monitor.

The second segment is sent from the server to client itself so dual purpose it is an acknowledgment of the data the server is received by putting as an acknowledgment filter server is telling the client that it is successful received everything up through

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byte and is now waiting or the white onwards
the third segment is sent from the client to the
server
The soul purpose is to acknowledge the data is
received the server the segment has an empty
data this segment has in the acknowledgment
number because the client has received the
stream of byte through byte sequence number 79
and it is now waiting byte 80 onwards

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