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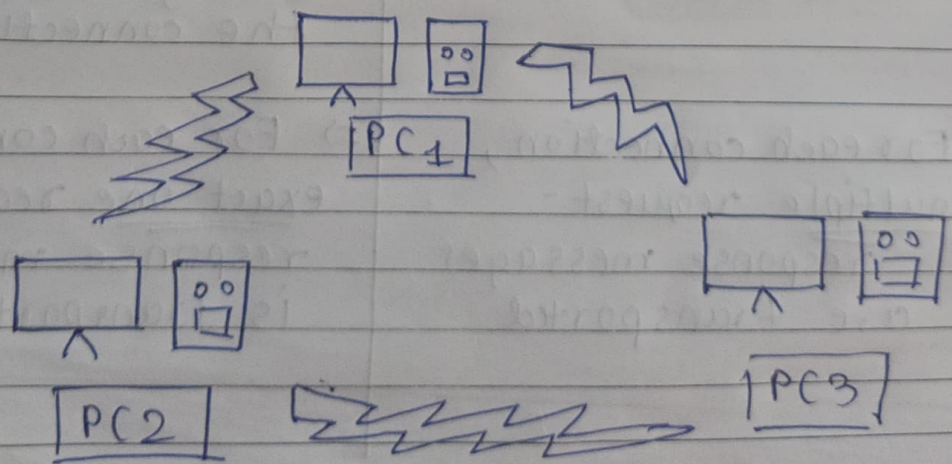
Ans-7 Following are Socket Primitives of Transport Layer:-

(1) SOCKET
(2) BIND
(3) LISTEN
(4) CONNECT
(5) CLOSE
(6) ACCEPT
(7) SEND
(8) RECEIVE

Ans-(8) An ad-hoc network is one that is spontaneously formed when devices connect and communicate with each other.

=> Ad hocs networks are mostly wireless local area networks.

* Diagram:-



Ans- (9) (A)

SMTP	POP3
⇒ Stands for: Simple mail Transfer Protocol	⇒ Stands for: Post office Protocol- version 3
⇒ It is a simple ASCII Protocol	⇒ It is a simple message access protocol
⇒ Works on Port Number: 25	⇒ Works on Port Number: 110

Ans- (9) (B)

HTTP with Persistant connection	HTTP with non-Persistant Connection
⇒ It uses same connection throughout the session.	⇒ Send a connection request and after getting response close the connection
⇒ For each connection, multiple request-response messages are transported	⇒ For each connection, exact one request-response message is transported

Ans- (9)(c)

Upward multiplexing	Downward multiplexing
=> If only one network address is available on host, then; all the transport connections have to use it. When a TDPU comes in, a way is needed to tell which process to give it to; such situation is called upward multiplexing	-> If a user needs more bandwidth than one virtual circuit can provide to it; a solution is to open multiple network connections and distribute the traffic on round-robin basis, such is downward multiplexing

~~Ans = (10)~~

Ans-(11) In many scenarios, the speed at which the sender sends the data is not equal to the speed of receiver, receiving data.

=> In many cases, the speed of sender is greater than that of receiver which can lead to data lose.

=> So, a flow control mechanism is required which can keep an eye on the situation and can rectify the issue.

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⇒ We can tell, that flow control is required for slowing down of sender system to match the receiver system side buffer size so the packets are not lost.

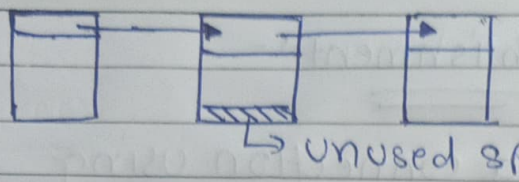
⇒ Flow control adjust the rate of flow of packets in an intelligent way.

⇒ Buffer, is a region of memory which is used to temporarily store the data while it is being moved from one location to another

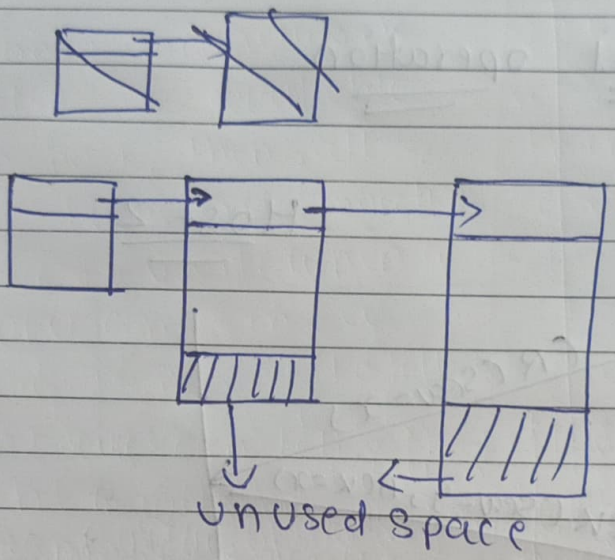
→ In Buffering, message or data exchanged by communicating processes reside in a temporary queue.

→ There are 3 types of buffers used in transport layer:-

(1) Chained fixed size buffers
(2) Chained variable sized buffers
(3) One large circular buffer per connection.

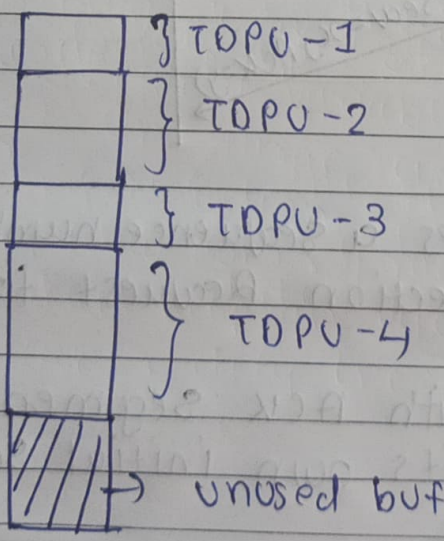


⇒ chained fixed size buffer



⇒ chained variable sized buffers

⇒



one large circular buffer per connection

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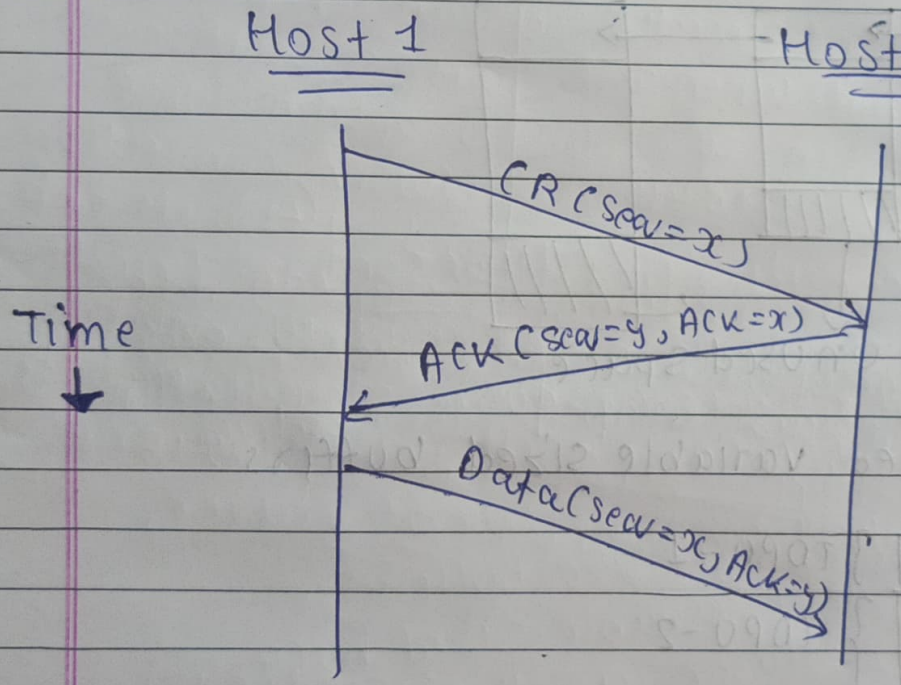
Ans - (12)

* Connection Establishment :-

=> We can establish a connection using 3-way handshake.

=> (a) Normal operation



=> Here, host 1 chooses a sequence number x, sends a connection Request to host 2

=> Host 2 replies with ACK segment x and announcing its own initial sequence number y.

=> Finally, host 1 acknowledges and data transfer begins.

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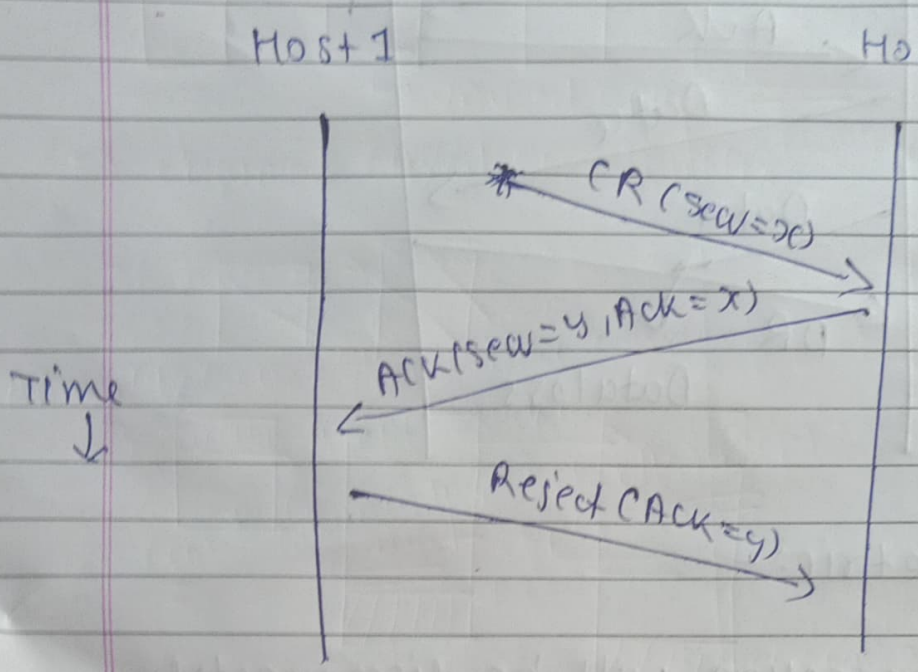
(b) Old duplicate connection Request



=> Segment at host 2 arrives without host 1's knowledge.

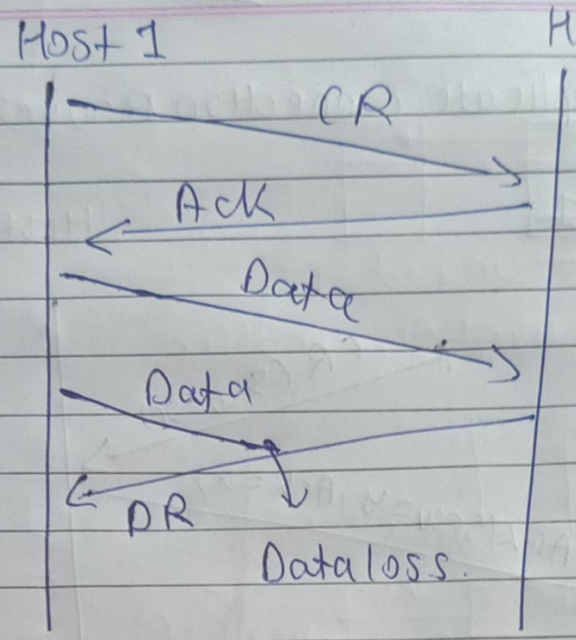
=> host 2 acknowledges and sends the sequence number y.

=> host 1 rejects the host 2's attempt to establish connection.

* Connection Release:-

=> 2 types → (1) Asymmetric
(2) Symmetric

(1) Asymmetric:- → If 1 user wants to disconnect - connection gets disconnected



(2) Symmetric:-

=> connection will be disconnected by both side ; so data loss is avoided