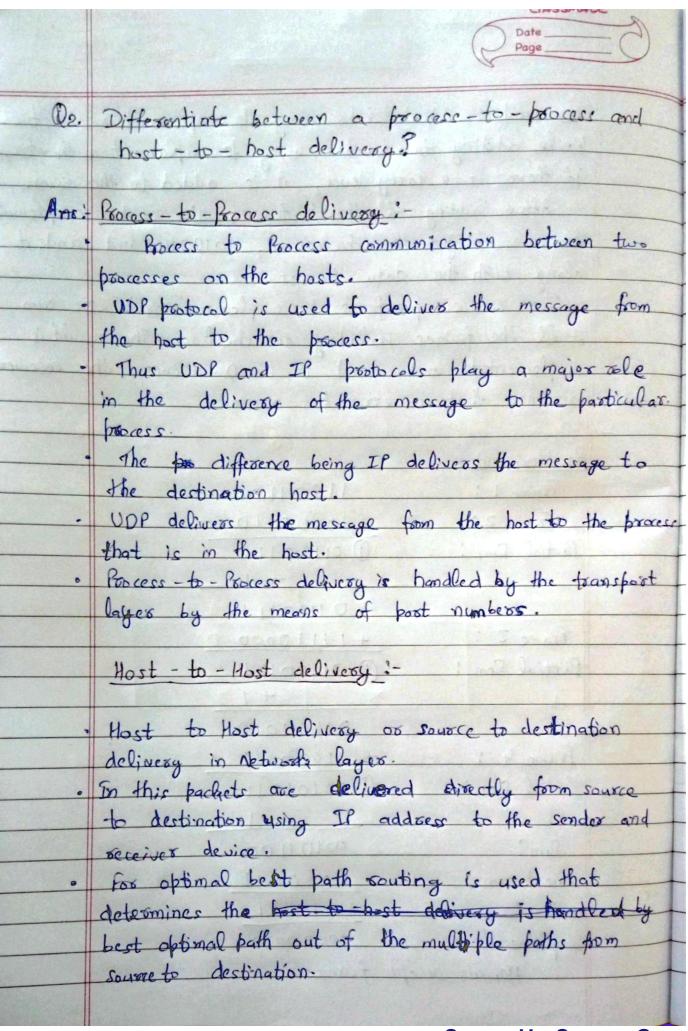CN ASSIGNMENT -2

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Q1. Suppose that the sender wants to send 4 frames each of 8 bits, where the frames are 11001100, 10101010, 11110000 and 11000011. check error using error detection checksum method.

Sender's End

Ans.
Frame 1:   11001100
Frame 2:   + 10101010

Partial sum   ① 01110 110
                        + 1
                     01110111
Frame 3:   + 11110000

Partial Sum   ① 0110 0111
                        + 1
                     01101000
Frame 4:   + 11000011

Partial Sum   ① 00101011
                        + 1
                     00101100
Checksum   11010011
   Sum   + 11111111

Complement   00000000

Hence, accepted frames.

The sender add the bits using 1s complement arithmetic. While adding two numbers using 1s complement arithmetic, if there is a carry over, it is added to the sum.

After adding all the 4 frames, the sender complement the sum to get the checksum, 11010011, and sends it along with the data frames.

The receiver performs 1s complement arithmetic sum of all the frames including the checksum. The result is complemented and found to be 0. Hence, the receiver assumes that no error has occured.

Receiver's End

Frame 1 :	11001100
Frame 2 :	+ 10101010
Partial Sum :	① 01110110
	+ 1
	0 1110111
Frame 3 :	+ 11110000
Partial Sum :	① 01100111
	+ 1
	01101000
Frame 4 :	+ 11000011
Partial Sum :	① 00101011
	+ 1
Sum :	00101100
Checksum :	11010011
Sum :	11111111
Complement	00000000

Hence, accept frames.

Q2. Differentiate between a process-to-process and host-to-host delivery?

Ans: <u>Process-to-Process delivery :-</u>

- Process to Process communication between two processes on the hosts.
- UDP protocol is used to deliver the message from the host to the process.
- Thus UDP and IP protocols play a major role in the delivery of the message to the particular process.
- The difference being IP delivers the message to the destination host.
- UDP delivers the message from the host to the process that is in the host.
- Process-to-Process delivery is handled by the transport layer by the means of port numbers.

<u>Host-to-Host delivery :-</u>

- Host to Host delivery or source to destination delivery in Network layer.
- In this packets are delivered directly from source to destination using IP address to the sender and receiver device.
- For optimal best path routing is used that determines the ~~host-to-host delivery is handled by~~ best optimal path out of the multiple paths from source to destination.

- Host to Host delivery is handled by the network layer by means of IP address.
- Host-to-Host communication is the one which takes place between one host and the other host (computer). IP protocol is used.