Mohit Poshwani 4g

Q.1 Explain OSI layered model

Ans:-

- This reference model is proposed by International Standard organisation (ISO) as to standardising the sets of rules (protocols).
- This model is called OSI reference model.

- The ISO-OSI model defines detailed architecture of network system. So, we can say it's mainly for the reference to create other model.

- It defines 7 layers architecture as we can say 7 layers to complete communication from one system to another & vice-versa.

- physical layer
- Data link layer
- Network layer
- Transport layer
- Session layer
- presentation layer
- Application layer

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- Features of OSI models
  :- 1) Big picture of communication over network is understandable through this OSI model.
  2) We see how hardware & software work together.
  3) We can understand the overall concept of each layer & it's purpose from which other protocol suits are created.

- ISO - OSI is not a network architecture as it doesn't specify exact services & protocol. - It just tells what each layer should do & where it lies.

1) Physical layer
  :- > physical layer is to transmit the individual bits from one node to another node
  > lowest layer of OSI model.
  > It establish, maintain & deactivate physical connections.
  > It operates mechanical, electrical & procedural interface specifications

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2) Data Link layer
:-> This is responsible for error-free transfer of data frames.
> It defines format of data on network.
> It provides reliable & efficient communication between two or more devices.
> It mainly responsible for each device that resides or have MAC-Address (unique identification).

3) Network layer
:-> It's manages device addressing tracking location of device on network.
> Functions are - Internetworking
- Addressing
- Routing
- Packetizing

4) Transport layer
: It provide reliable message delivery from

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Process to process
- Main responsibility of Transport layer is to transfer data completely.
- It PDU is get data from upper layer & convert into segments.
- It add header through which they manage the error control.

5) session layer
: The session layer is used to establish manage & maintain synchronise the interaction between communicating device.
> It act as dialogue control that allows communication between devices.
> session layers add some checkpoints when transmitting the data in sequence.

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6) Presentation Layer
: It mainly concerned with syntax & semantics of information exchange between two system.
- It acts as data translator for network
- It's called as Syntax layer

7) Application Layer
: An application layer serves as a windows for users & application process to access network services
- It handles issues such as network, resource allocation, etc.

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Q.2 Explain Data link protocols in Brief.

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1) SDLC
: (Synchronous Data link protocol)
- It was used to connect remote device to mainframe computer.
- It ascertained that data units arrive correctly & with right flow.

2) HDLC
: (High level Data link protocol)
- It provides both reliable & unreliable service.
- It's a bit-oriented protocol that's applicable for both point-to-point & multipoint communications.

3) SLIP
: (Serial line Interface protocol)
- This is simple protocol for transmitting data packets between an internet service provider (ISP) & home users over a dial-up link.

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4) (PPP / P2P)

- (Point to point protocol)

: This is used to transmit multiprotocol data between two direct connections (point-to-point).

- This is byte-oriented protocol that's widely used in broadband communications having heavy load & high speed.

5) LCP

- (Link control protocol)

: It's one of PPP protocol to establish, maintaining & terminating links for transmission.

6) NCP.

- (Network control protocol)

: These parameters are used for negotiation the parameters & facilitates for network layer for every higher-level protocol supported by PPP. One NCP is there