



Inspiring Excellence

Assignment 03

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Section: 03

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Answer to the Question No. 01

Name	Functionality	PDU
Application	Bridge between human and data network, provides services to the user.	Data
Presentation	Translates, compresses and encrypts data.	Data
Session	Initiates dialogue, keeps exchange of data active and restarts session which are disrupted or idle for a long period of time.	Data
Transport	Segmentation and reassembly, adds port address and sequence number, controls connection, flow and error.	Segments
Network	Routing, adds logical address.	Packets
Data link	Framing, physical addressing, controls flow, error and access.	Frames
Physical	Physical medium, data rate, synchronizes and represents bits.	Bits

Answer to the Question No. 02

- Specific Address: Application Layer (Application, Presentation, Session)
- Port Address: Transport Layer
- IP (Logical) Address: Network Layer
- MAC (Physical) Address: Data Link Layer, Physical Layer

Answer to the Question No.03

Address	Description	Layer (OSI model)	Example
Specific	User friendly address, links to port, IP, MAC address.	Application	abc@gmail.com
Port	Identifies specific services running on a device.	Transport	80 (for HTTP)
IP	Unique address assigned to a device which enables connection.	Network	111.111.1.11
MAC	Unique hardware address, given when the device was built.	Data link – Physical	01.23.45.67.89.AB

Answer to the Question No.04

Protocol Data Units (PDU)	Size
Segment	16 bits
Packet	32 bits
Frame	48 bits

Answer to the Question No.05

Though Transport layer and Data-Link layer both have the error and flow control functionalities they have differences, likewise below:

Layers	Transport	Data link
Error Control	Finds and fixes errors from sending to receiving device.	Finds and fixes error in between two immediate connected devices.
Flow Control	Makes sure that sender doesn't send overwhelming data to receiver at once.	Ensures fast devices don't overload the slower one.

Answer to the Question No.06

- De facto: Standards that have not been approved in papers and laws but have been adopted as a standard through widespread use. Means how things actually are.
- De jure: Standards that have been approved by the govern bodies. Means how things are supposed to be.

Answer to the Question No.07

Protocols: Protocols are a set of rules and regulations that defines how data are supposed to transited, receive, and processed in a network.

Protocol defines data type and format, addresses, flow and error control, session management, delivery, synchronization, and routing etc.

Answer to the Question No. 08

i. There are 8 networks in total. Hop-to-hop delivery means the transmission of data is flowing from one network to another. Data link layer of OSI model is responsible for this.

ii. Total 2 hops.

Frame 1	D. MAC	S. MAC	D. IP	S. IP	D. Port	S. Port
	J	K	j	k	49152	80

Answer to the Question No. 09

Frame X	D. MAC	S. MAC	D. IP	S. IP	D. Port	S. Port
	A	E	20	24	80	52044

Frame Y	D. MAC	S. MAC	D. IP	S. IP	D. Port	S. Port
	E	F	24	92	57150	25

Answer to the Question No. 10

- Application Layer

- Physical Layer
- Transport Layer
- Data Link Layer

Answer to the Question No. 11

i. There are total 10 networks.

ii.

Frame 1	D. MAC	S. MAC	D. IP	S. IP	D. Port	S. Port
	F	R	16	19	49152	23

iii.

Frame 2	D. MAC	S. MAC	D. IP	S. IP	D. Port	S. Port
	G	R	17	11	25	49153