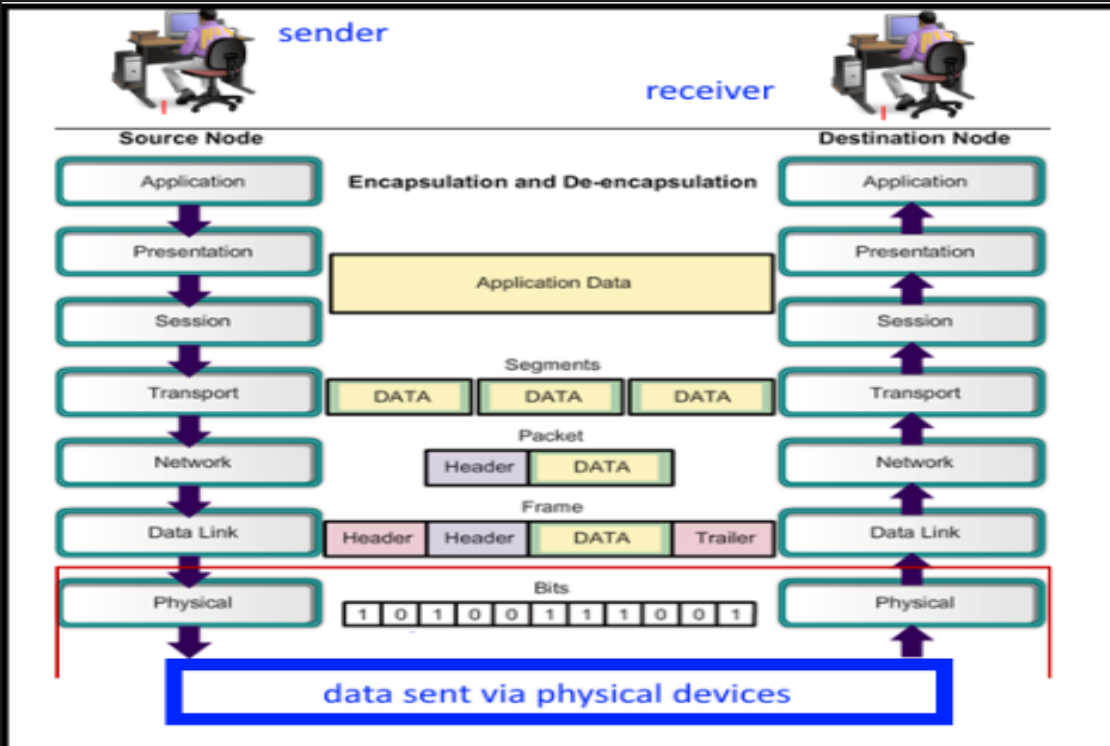


1. What does PDU stand for?

Protocol Data Unit

2. State the type of PDU for each layer of the OSI model.



7 data
6 data
5 data
4 segment
3 packet
2 frame
1 bits (101001..)

3. What are the disadvantages of peer-to-peer networking?

Only two PCs linked

1. Lack of security
2. No centralized administration

4. What are the disadvantages of Client-server networking?

1. Costly
2. Clients cannot work when server down
3. Server can be overloaded

5. What is segmentation?

Segmentation is the process of dividing a data packet into smaller units for transmission over the network

6. A data stream travels through the 7 layer of the OSI model. At which layer is it segmented?

7 data

6 data

5 data

4 segment (Transport)

3 packet

2 frame

1 bits (101001..)

7. What does OUI stand for?

Organisational Unique Identifier.

8. How is OUI related to the MAC address?

Organisational Unique Identifier is the first 24 bits of the MAC address.

9. What advantage has wired network over wireless network?

1. Better security against hacking
2. No signal interference
3. High speed possible

10. In the encapsulation process, data are modified how many times?

3 times

Data to segment

Segment to packet

Packet to frames

11. What is the console port of a router used for? Is any special cable needed for this port?

Connect to a PC or laptop, using the console port.
Console cable

12. What are the address ranges for class A to D?

The **class A** network number **127** is assigned the “loopback” function.

Class	Address range
Class A (1 to 126)	1.0.0.1 to 126.255.255.254
Class B (128 -191)	128.1.0.1 to 191.255.255.254
Class C (192-223)	192.0.1.1 to 223.255.254.254
Class D (224 – 239)	224.0.0.0 to 239.255.255.255

13. List the CLI commands related to passwords or security.

password letmein
enable password
enable secret
service password-encryption .

14. List all CLI commands related to show.

15. What are the following protocols used for?

TCP – Transmission Control Protocol, work with IP for data transmission (TCP/IP)

FTP – File Transfer Protocol, for transterring files

ARP – Address Resolution Protocol, MAC resolve address and IPv4 address using ARP table

16. How are protocol and hardware address related?

p .

17. What do the following flags do?

|

FIN - Finish

ACK - Acknowledgement

SYN - Synchronisation

18. What is Window Size?

p .

19. What does a DHCP server broadcast in response to requests?

DHCPREQUEST

20. Name a few Malwares.

Trojan Horse

Spyware

Worm

Bot

21. What CLI command is related to routes of a path in a network?

(refer to notes)

Tracert

Show ip route

22. Name a few troubleshooting techniques.

do your research

23. What information are stored in an Ethernet frame?

data

FCS – frame check sequence, for checking errors In transmission

Source MAC

Destination MAC

24. What protocol has no state?

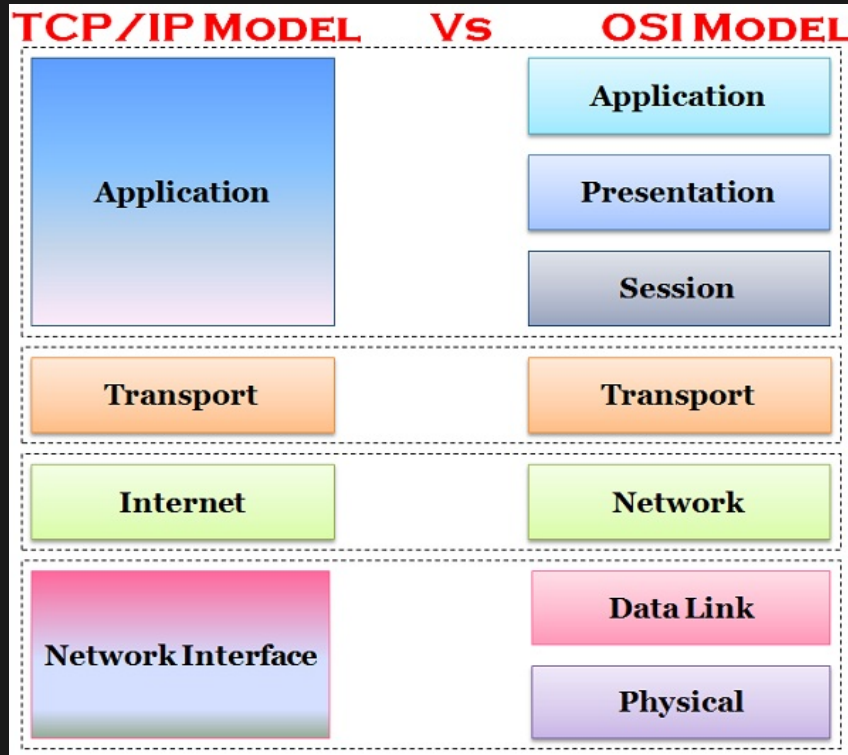
HTTP is a **stateless protocol**, in other words, the server will forget everything related to client/browser state.

25. Which IEEE standards are found in which layers or sublayers?

The **IEEE** divides this layer into two sublayers -- the logical link control (**LLC**) layer and the media access control (**MAC**) layer.

The MAC layer varies for **different** network types and is defined by **standards IEEE 802.3** through **IEEE 802.5**.

26. State the equivalent layers of the OSI and TCP/IP models.



28. Name the types of media used in networks.

cable

Wireless

Optic Fiber – transmission using light pulses

.

29. Which one represents router, bridge, hub?



29. Which one represents router, bridge, hub?



Router



Bridge



Hub

30. At which layer of the OSI model are routers and switches used?

Network 3rd

31. How many subnet masks can there be?

|

255.255.255.255

255.255.255.???

255.255.255.???

...

31.

		Binary	Subnet
		Mask	Bits
255.255.255.	255	11111111	8
255.255.255.	254	11111110	7
255.255.255.	252	11111100	6
255.255.255.	248	11111000	5
255.255.255.	240	11110000	4
255.255.255.	224	11100000	3
255.255.255.	192	11000000	2
255.255.255.	128	10000000	1
255.255.255.	0	00000000	0

32. Given a subnet mask, how to you determine the maximum number of usable hosts?

Given 255.255.255.192, how may usable hosts?

|

Given 255.255.255.240, how many usable hosts?

32. Given a subnet mask, how do you determine the maximum number of usable hosts.

		Binary Mask	Subnet 1 Bits n	Possible Subnets 2^n	Hosts Bits H	$2^H - 2$ Max Hosts usable
255.255.255.	255	11111111	8	256	0	0
255.255.255.	254	11111110	7	128	1*	0*
255.255.255.	252	11111100	6	64	2	2
255.255.255.	248	11111000	5	32	3	6
255.255.255.	240	11110000	4	16	4	14
255.255.255.	224	11100000	3	8	5	30
255.255.255.	192	11000000	2	4	6	62
255.255.255.	128	10000000	1	2	7	126
255.255.255.	0	00000000	0	1	8	254

convert →