

C610 Solved Mid Term Subjective Question
These Questions Repeated plenty of time in Exams so after learning Handout Plz cast a glance on these questions too

Question # 1

What is the difference between LAN and WAN?

Answer

Local area network (LAN)

LAN is small in size covers the area within a room, building or cities.

Wide area network (WAN)

WAN is large in size and covers the area cities, countries and continents.

Question # 2

Define the term Jitter.

Answer

The term Jitter is used for variance in transmission delays. Jitter is significance for voice, video and data. Jitter can occur when a packet is delayed because the network is busy.

Question # 3

Give a comparison of the following?

Thick Ethernet wiring scheme and Thin Ethernet wiring scheme.

Answer

This uses thick coax cable. AUI cable or transceiver or drop cable connects from NIC to transceiver. AUI cable carries digital signal from NIC to transceiver. The transceiver generates analog signal on coax cable. The wires in AUI carry digital signals power and other control signals. Thick Ethernet also requires terminators to avoid signal reflectance.

Thin Ethernet uses thin coax cable that is cheaper and easier to install than thick Ethernet coax. In thin Ethernet wiring scheme transceiver electronics are built into NIC and NIC connect directly to network medium. Coax cable use connector on NIC. Coax runs directly to back of each connected computer by T-connector. The T-connector directly attaches to NIC.

Question # 4

How can Switched Virtual Network be established?

Answer

Most networks offer dynamic connections that last for a relatively short time. ATM can dynamically establish a switched virtual circuit SVC that allows it as long as necessary and then terminate it. The computer sends a connection request to the switch to which it is attached. Software in the switch finds a path to the destination and sends with the connection request. Each pair of switches in the path communicates to choose a VPI/VCI for their tables. Once the connection is established a message is given back to the originating computer to indicate the SVC is ready.

Question # 5

Describe permanent virtual circuits (PVC).

Answer

ATM can provide the virtual circuits that look like traditional leased digital circuits. The permanent virtual circuits PVC works as long as the customer pays the periodic fee for its use. The forwarding table enter configured the terms used by Telco Provisioning requires two steps.

- To determine a complete path.
- To choose appropriate VPI/VCI for each step in the path and configures each adjacent pair of switches.

Question # 6

What are default routes draw the table.

Answer

Routing table entries can collapse with a default route. If destination doesn't have in explicit routing table entry and then it use a default route. It is shown in the below table.

Table

Destination	Next hop	Destination	Next hop	Destination	Next hop	Destination	Next hop
1	-	2	-	1	3,1	2	4,2
*	1,3	4	2,4	2	3,2	4	-
		*	2,3	3	-	*	4,3
				4	3,4		
Node 1		Node 2		Node 3		Node 4	

Question # 7

What is the difference between the physical and logical topologies?

Answer

Every LAN has a topology, or the way that the devices on a network are arranged and how they communicate with each other.

PHYSICAL TOPOLOGY:

The way that the workstations are connected to the network through the actual cables that transmit data -- the physical structure of the network -- is called the physical topology. **It depends on the wiring scheme.**

LOGICAL TOPOLOGY:

The logical topology, in contrast, is the way that the signals act on the network media, or the way that the data passes through the network from one device to the next without regard to the physical interconnection of the devices. We can say that **it is defined by the specific network technology.**

Question # 8

Define Vector-Distance Algorithm.

Answer

Packet switches wait for next update message and they iterate through entries in message. If entry has shortest path to destination, insert source as next hop to destination and record distance as distance from next hop to destination plus distance from this switch to next hop.

Question # 9

What is the concept of store and forward technology?

Answer

STORE AND FORWARD:

Data delivery from one computer to another is accomplished through store and forward technology. In this technology packet switch stores incoming packet and also forwards that packet to another switch or computer. For this purpose packet switch has internal memory into which it can hold packet if outgoing connection is busy. Packets for each connection held on queue.

Question # 10

How can Switched Virtual Network be established?

Answer

SWITCHED VIRTUAL CIRCUITS:

Most networks offer dynamic connections, which last for a relatively short time. To handle this, ATM can dynamically establish a switched virtual circuit (SVC), allow it last as long as necessary and then terminate it. The terminology comes from the Telco's where switching system normally refers to all switching.

ESTABLISHING AN SVC:

The computer sends a connection request to the switch to which it is attached. Software in the switch finds a network path to the destination and sends along the connection request.

Each pair of switches in the path communicates to choose a VPI/VCI for their tables. Once the connection is established by the destination, a message is sent back to the originating computer to indicate the SVC is ready.

If any switch or the destination computer does not agree to setting up the VC, an error message is sent back and the SVC is not established

Question # 11

How can a bridge know whether to forward frames?

Answer

The bridge builds a list of MAC addresses on either side of the bridge. Therefore, it knows which packets should be forwarded to the other side and which should not. Most bridges are self-learning bridges. As soon as a frame arrives to a bridge, it extracts a source address from its header and automatically adds it in the list for that segment. In this way a bridge builds up address lists.

In the example of a packet that uses a MAC address not in its table it can err on the side of caution by forwarding the packet.

Question # 12

Compare connection oriented and connectionless Service.

Answer

Connection-Oriented vs. Connectionless Service

This characteristic specifies whether conversations take place in a more or less structured manner. When using a **connection-oriented** protocol, you incur the overhead of setting up a virtual circuit (a defined communications path) between the sender and receiver, which is maintained until the sender and receiver have completed their entire conversation.

When the conversation is completed, you incur the overhead of tearing down the virtual circuit. Connection-oriented protocols provide guaranteed delivery of messages in the order in which they were sent.

Contrast this with **Connectionless** service, which does not require establishing a session and a virtual circuit. This can be found in the network layer or transport layer, depending on the protocol. You can think of a connectionless protocol as being akin to mailing a post card. You send it and hope that the receiver gets it. Common features of a connectionless service are:

- Packets do not need to arrive in a specific order
- Reassembly of any packet broken into fragments during transmission must be in

- proper order
- No time is used in creating a session
 - No Acknowledgement is required.
 - The largest connectionless network in use today is the Internet

Question # 13

Which type of information is obtained from network sniffer and in which mode Network sniffer operates?

Answer:

A network analyzer also called network monitor or a network sniffer is used to examine the performance of or debug a network. It can report statistics such as capacity utilization, distribution of frame size, collision rate or token circulation time

Most installations still use DIX Ethernet encoding in which there is no LLC/SNAP header in the frame. A network analyzer can tell from the values in the type field (small values are lengths, which mean an LLC/SNAP header is located in the first octets of the data area; large values are types, which mean no LLC/SNAP header is included).

The operation of network analyzer is a computer with a network interface that receives all frames, which is called promiscuous mode. So many desktop computers have interface that can be configured for promiscuous mode. When combined with software computer can examine any frame on LAN. In this way the communication across LAN is guaranteed to be private. Computer receives and displays frames on the LAN. Network analyzer can be configured to filter and process frames. It can count frames of specific type of size. It displays only frames from or to specific computers.

Question # 14

Differentiate b/w Thin Ethernet, Thick Ethernet and Twisted Pair Ethernet?

Answer

Thick Ethernet:

Thick Ethernet, officially known as 10 Base-5, is the oldest form of Ethernet. One form of cabling supported by Ethernet is low-loss 50 Ohm coaxial cable as shown in the figure below. This type of cable is 0.5" diameter (usually supplied with a yellow outer PVC coating) and rather inflexible. It has become known in the communications industry as "Thick Ethernet". The official name for this cable is 10 Baseband5 (10B5), indicating that it is specified for baseband communications at 10 Mbps over distances up to 500m.

Thin Ethernet:

Thin Ethernet, officially called 10 Base-2, is a less expensive version of 10 Base-5 (Thick Ethernet) technologies. It uses a lighter and thinner coaxial cable and dispenses with the external transceivers used with 10 Base-5.

10 Base-2 uses an RG-58A/U coaxial cable and is wired in a bus topology. Each device on the network is connected to the bus through a BNC "T" adapter, and each end of the bus must have a 50 Ohm terminator attached. Each node on the bus must be a minimum of 0.5 meters (1.5 feet) apart, and the overall length of the bus must be less than 185 meters (606 feet).

Twisted Pair Ethernet:

Twisted Pair Ethernet (10baseT), sometime also called "UTP" from "Unshielded Twisted Pair", is based on using a cable similar to phone-wiring. The cable is connected via RJ-45 connectors to the network card installed in the PC.

Question # 15

LIST SOME CHARACTERISTICS OF A CLIENT?

Answer

The characteristics of a client are explained below:

- "Client is an arbitrary application program.
- "It becomes client temporarily.
- "It can also perform other computations.
- "It is invoked directly by the user.
- "It runs locally on the user's computer.
- "It actively initiates contact with a server.
- "It contacts one server at a time.

Question # 16

Explain TCP Segment Format?

Answer

TCP uses single format for all messages. TCP uses the term segment to refer to a message. Each message sent from TCP on one machine to TCP on another machine uses this format including data and acknowledgement.

Question # 17

What is IPv6 Address Notation?

Answer

128-bit addresses unwidely in dotted decimal; requires 16 numbers:

105.220.136.100.255.255.255.0.0.18.128.140.10.255.255

69DC: 8864: FFFF: FFFF: 0:1280:8C0A: FFFF

Zero-compression – series of zeroes indicated by two colons

FF0C: 0:0:0:0:0:0:B1

FF0C::B1

IPv6 address with 96 leading zeros is interpreted to hold an IPv4 address

Question # 18

How much data can present on original Ethernet segment at one time? To find out compute the delay-throughput product. The original Ethernet operate at 10 mega bits per second, and a segment was limited to 500 meters. Assume the signals propagate down the cable at 66 percent of the speed of light?

Answer

Speed of light = 299 792 458 m / s

Bandwidth=10

Delay = 66 percent of speed of light =197863022 m/s

Bandwidth Delay product= 247328777500

Question # 19

Explain these terms

Star topology, Ring topology, Frame?

Answer

FRAME:

A frame or hardware frame denotes a packet of a specific format on a specific hardware technology

RING TOPOLOGY

In this topology of network the computers are connected to each other in closed loop.

STAR TOPOLOGY

In this topology, all computers are attached to a central point, which is sometimes called the Hub

Question # 20

Explain the term bridge and its functions

Answer

A bridge keeps a list for each segment that consists of physical addresses of the computer attached to that segment. In this way a bridge knows on which segment a destination computer is attached.

Most bridges are self learning bridges. As soon as a frame arrives to a bridge, it extracts a source address from its header and automatically adds it in the list for that segment. In this way a bridge builds up address lists.

A bridge is a hardware device also used to connect two LAN segments to extend a LAN.

FRAME FILTERING

The most important task a bridge performs is frame filtering. If both the source and destination are on the same segment, it does not forward the frame to the other segment. A frame is forwarded to the other segment, if it is destined to that segment.

Question # 21

Explain NIC and Computer Processing?

Answer

NIC AND CPU PROCESSING:

NIC contains sufficient hardware to process data independent of system CPU. In which some NICs contain separate microprocessor. In addition to this it also include analog circuitry interface to system bus, buffering and processing

Question # 22

What is Parity Checking? Explain

Answer

Parity checking

To detect the error there are different schemes for which parity checking is also common used, in parity checking, parity refers to the number of bits set to 1 in the data item. A parity bit is an extra bit transmitted with data item chose to give the resulting bit even or odd parity

Question # 23

What do you know about Dijkstra's algorithm?

Answer

Dijkstra's algorithm

Dijkstra's algorithm can accommodate weights on edges in graph. The shortest path is then the path with lowest total weight.

Question # 24

What are the uses of Repeater?

Answer

Repeater is a networking device

A repeater is used to increase the signal strength. It amplifies the weakening signal received from one segment and then retransmits onto another segment.

