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For MIDTERM Exams
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VU-Campus Sahiwal

1. ATM assigns each VC a _____ identifier that is divided two parts to produce a hierarchy.
21-bit
22-bit
23-bit
24-bit (pg 67)
2. In ---------, network occupies larger areas like cities & countries.
LAN
WAN (pg 4)
MAN
CAN
3. _____ is the scheme, which is designed to help in detecting transmission errors, sends one extra bit of information with each character.
Parity checking (Pg. 18)
Checksums
CRC
LRC
4. The Fast Ethernet hardware operates at a rate of --------
10 Mbps
100 Mbps (pg 27)
1000 Mbps
1 Gbps
5. When an application---------- data, it makes a copy of the data available to all other computers on the network.
Broadcasting
Multicasting
Unicasting
Anycasting
6. Formally named _____ informally known as the thin wire Ethernet or Thin net.
10 Base 2
10 Base 5
10 Base T
100 Base T
7. NICs contain analogue circuitry and _____ that allows the NIC to operate independent of the CPU.

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DMA (Direct Memory Access)
Multiplexer
Transceiver
Microprocessor
8. By size there are.....classifications of networks.
2 (pg 4)
3
4
5
9. In which type of topology computers are connected to a central device?
Ring
Mesh
Bus
Star (pg 5)
10. ---------- was especially most concerned about the lack of highly powered computers.
ARPA
IEEE
EIA
Goverment
11. IEEE LLC/SNAP header is _____which is used to specify the type of data.
8 octets (Pg. 112)
10 octets
12 bytes
16 bits
12. An interface for Thin Ethernet must have _____ connector and must generate signals according to the_____specification.
RJ-45, 10 Base T (Pg. 126)
RJ-45, 10 Base 5
BNC, 10 Base 2
BNC, 10 Base T
13. _____ technology can support both LAN and WAN connections.

Frame relay a

Ethernet

SMDS

ATM (Pg. 66)

14. _____ is used for ordinary data.

Available Bit Rate (ABR) service
Uniform Bit Rate (UBR) service
Constant Bit Rate (CBR) service (pg 71)

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Variable Bit Rate (VBR) service
15. A network which is based on packets uses a computer which may have _____, memory and_____ for switching.
Administration Rights, Algorithm
Source address, Destination address
Interface, Program
Input, Output
16. No error detection scheme is perfect because transmission errors can affect _____.

Data
Additional Information (Pg. 82)
Additional information & data
Transmission medium
17. In direct point to point communication adding the **N^{th}** computer requires_____ new connections.
N(N - 1)
N^2
N - 1
$(N^2 - N)/2$
18. The next hop to which a packet is sent depends only on_____.
Packet's destination
Packet's original source
Path the packet has taken
Routed Protocol (pg 93)

19. _____ in which delay among packets can vary.
Virtual Private Network
Isochronous Networks
Isochronous Networks
Asynchronous Networks (Pg. 65)
20.A typical port on an ATM switch operates at _____ or higher.2
OC-2 speed (155Mbps)
OC-3 speed (100Mbps)
OC-3 speed (155Mbps) (pg 72)
OC-3 speed (155Gbps)

CS610 Computer Network

1. ATM assigns each VC a _____ identifier that is divided two parts to produce a hierarchy.
21-bit
22-bit
23-bit
24-bit (pg 67)
2. Hardware that calculates a CRC uses two simple components.
AND unit with XOR unit
Shift register with XOR unit (pg 20)

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Shift register with AND unit
Shift register with shift XOR unit
03. ---------- have advantages arisen from the size and ease of computation.

CRC
Parity (Pg.19)
Checksums
VRC
04. The Gigabit Ethernet hardware operates at a rate of --------
10 Mbps
100 Mbps
1000 Mbps
10 Gbps
5. When an application---------- data, it makes a copy of the data available to all other computers on the network.
Broadcasting
Multicasting
Unicasting
Anycasting
6. A---------- provides mechanism that automatically assigns a physical address to a station when the station first boots.
Static addressing scheme
Configurable addressing scheme
Dynamic addressing scheme (Pg. 34)
Dynamic Host Configuration
7. NICs contain analogue circuitry and _____ that allows the NIC to operate independent of the CPU.
DMA(Direct Memory Access)
Multiplexer
Transceiver
Microprocessor (pg 40)
8. Basic LAN technologies such as Ethernet, Token Ring, and FDDI use a ____.
Connectionless service paradigm
Connection-oriented service paradigm
Both Connectionless and Connection-oriented service paradigm
Connection-oriented service paradigm without acknowledgment
09. ---------- was especially most concerned about the lack of highly powered computers.
ARPA
IEEE
EIA
Goverment
10. "Frame type" field of the header consists of _____ bits.

8
10
16

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32 (Pg. 105)

11. An interface for Thin Ethernet must have _____ connector and must generate signals according to the_____ specification.

RJ-45, 10 Base T (Pg. 126)

RJ-45, 10 Base 5

BNC, 10 Base 2

BNC, 10 Base T

12. A bridge uses the _____ to determine which computers connect to which segment and uses the _____ to determine whether to forward a copy of frame.

Destination address, Source address

Destination address, MAC Address

Destination address, Destination address

Source address, Destination address

13. _____ senses a signal on a cable and then transmits an amplified copy of the signal.

Bridge

Hub

Transceiver

Repeater

14. _____ is used for ordinary data.

Available Bit Rate (ABR) service

Uniform Bit Rate (UBR) service

Constant Bit Rate (CBR) service (Pg. 71)

Variable Bit Rate (VBR) service

15. _____ is used for delay sensitive applications requiring high data rate.

Constant Bit Rate (CBR) service (Pg. 71)

Variable Bit Rate (VBR) service

Available Bit Rate (ABR) service

Uniform Bit Rate (UBR) service

16. The term_____ refers to the general concept of a small block of data in a network.

Packet (Pg. 16)

Byte

Cell

Information

17. A network with throughput T and delay D would have a total no of _____ bits in transit at any time.

T + D

T x D/Unit Time

T / D

T x D (Pg. 203)

18. A network that permits many sources to take turns accessing a shared communication resource is providing a form of _____.

Phase Division Multiplexing

Time Division Multiplexing

Frequency Division Multiplexing

Wave Division Multiplexing

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19. No error detection scheme is perfect because transmission errors can affect _____.
Data
Additional Information (Pg. 82)
Additional information & data
Transmission medium
20. Formally named _____ informally known as the twisted pair Ethernet or TP Ethernet.
10 Base 2
10 Base 5
10 Base T (pg 43)
100 Base T

CS610 Computer Network

1. In ---------, network occupies larger areas like cities & countries.
LAN
WAN (pg 4)
MAN
CAN
2. ---------- have advantages arisen from the size and ease of computation.

CRC
Parity (Pg. 19)
Checksums
VRC
3. A network that uses a ------ usually consist of a single long cable to which computers attach.
Bus Topology (pg 26)
Tree Topology
Star Topology
Ring Topology
4. A---------- provides mechanism that automatically assignes a physical address to a station when the station first boots.
Static addressing scheme
Configurable addressing scheme
Dynamic addressing scheme (pg 34)
Dynamic Host Configuration
5. In which type of topology computers are connected to a central device?
Ring
Mesh
Bus
Star (Pg. 5)
6. If the sending computer crashes before transmitting a complete frame, the_____will not arrive and the receiver will know that the frame is_____.
soh, complete
soh, incomplete
eot, incomplete (Pg. 16)

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eot, complete
7. ---------- was especially most concerned about the lack of highly powered computers.
ARPA
IEEE
EIA
Goverment
8. Generally a Bridge is used to perform _____.

Extend a LAN, Filter and Forward a packet (Pg. 50)

Routing

Filter and Forward a frame

Filter and Forward a packet

9. Header of cell takes _____ of network capacity.
5% (pg 65)
10%
12%
15%
10. _____ senses a signal on a cable and then transmits an amplified copy of the signal.
Bridge
Hub
Transceiver
Repeater
11._____ is used for ordinary data.
Available Bit Rate (ABR) service
Uniform Bit Rate (UBR) service
Constant Bit Rate (CBR) service (Pg. 71)
Variable Bit Rate (VBR) service
12. A Bridge forwards or filters a frame by comparing the information in its address table to the frame's_____.
Layer 2 source address
Layer 3 source address
Layer 2 destination address
Layer 3 destination address
13. A network with throughput T and delay D would have a total no of _____ bits in transit at any time.
T + D
T x D/Unit Time
T / D
T x D (Pg. 203)
14. No error detection scheme is perfect because transmission errors can affect _____.
Data

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Additional Information (Pg. 82)
Additional information & data
Transmission medium
15. Most LANs that employ ring topology use an access mechanism known as_____.
CSMA/CD
CSMA/CA
Token Passing (Pg. 95)
Aloha
16. Local Talk is a LAN technology that employs _____.

Bus topology (Pg. 30)
Ring topology
Mesh topology
Star topology
17. Formally named _____ informally known as the twisted pair Ethernet or TP Ethernet.
10 Base 2
10 Base 5
10 Base T
100 Base T
18. Most WAN systems include a mechanism that can be used to eliminate the common case of duplication routing is called_____.
Dynamic route
Hierarchal address
Default route (Pg. 172)
Shortest path
19. _____ in which delay among packets can vary.
Virtual Private Network
Isochronous Networks
Asynchronous Networks (Pg.65)
Synchronous Networks
20. The product of delay and throughput measures the _____ of data that can be presented on the network.
Area
Volume(Pg. 80)
Length
Size

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Subjective

21. Suppose being an IT engineer in XYZ organization, you are given a task to avoid from duplication routes in routing table then how can you avoid from duplication of routes?02
Answer: (Pg. 102 Lecture no.29)

22. Suppose a network engineer wants to transfer data that is less critical then which type of quality of service specification of ATM would be applied? 02

ANS: CONSTANT BIT RATE (CBR):
It is used for audio and video, since these have predefined maximum data rates. (Pg 71)

23. Suppose an organization wants voice communication in network by using ATM technology. Explain, how ATM eliminate the varying delays associated with variable size data packets? 03

Answer: To meet its goals, ATM uses small, fixed sized packets called cells. Each cell has 53octets. VPI/VCI fields identify the cells destination. (pg 66)

24. Suppose a computer B on segment 1 of a LAN sends a frame to a computer F on segment 2 of the same LAN. If the bridge receives the frame from B, just after restarted then in this case will the bridge broadcast the frame or just send it to a particular computer? Justify your answer with reason. 03

Answer: **Y**es after restarted the bridge, the bridge can send this frame to the particular computer F on segment 2 because A frame is forwarded to the other segment, if it id destined to that segment.

25. While designing the ATM technology why the designers of the ATM have chosen cells over packets which are being used widely? Give five reasons to support your answer.05

Ans:
1. Cells are not variable length
2. Handling variable length packets leads to memory fragmentation
3. Variable length packets require hardware to accommodate the largest possible Packet.
4. The length of time required to send a variable length packet is variable and requires complicated interrupt scheme to detect completion of transmission.
5. QoS can't be guaranteed with variable length packets as easily as it can with fixed

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length cells. (Pg. 72)

26. Routing is a key feature of the networking because it can perform more complex analysis to determine the optimal path for the packet and eventually reach the target machine. What is meant of source independence in routing and how it can be valuable for routing? 05

Answer: Next hop to destination does not depend on source of packet. This phenomenon is called 'Source Independence'.

It has several benefits.

1. It allows fast and efficient routing.
2. Packet switch need not hove complete information about all destinations in spite it just has next hop so reduces total information and increases dynamic robustness.
3. The network can continue to function even if topology changes without notifying entire network. (Pg. 58)

21. Why the operation of NIC is isolated from the remaining computer system?02

ANS: NIC contains sufficient hardware to process data independent of system CPU. In which some NIC's contain separate microprocessor. In addition to this it also include analog circuitry interface to system bus, buffering and processing. (Pg. 40)

22. Suppose ABC Corporation has a small number of packet switches and computer systems in its computer network. If entire network is stable with single network link than which routing method will be most appropriate for this scenario? 2

Answer: - If entire network is stable with single network link then Manual routing method will be most appropriate for this scenario. (Pg. 62)

23. Suppose an organization wants voice communication in network by using ATM technology. Explain, how ATM eliminate the varying delays associated with variable size data packets? 03

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24. Suppose you want to add large amount of systems in your WAN to increase its capacity. Which type of switching devices will be used there? Write the name of each with its functionality

Answer: We can add capacity to WAN by adding more links and packet switches. Packet switches need not have computers attached. There are two types of switch according to the attached computers.

INTERIOR SWICH:

The switch that has no attached computers is called an interior switch.

EXTERIOR SWITCH:

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The switch that has computers attached with it is called exterior switch. Both interior and exterior switches forward packets and they also need routing tables. The routing table must have two things. (pg 59)

25. Suppose you are assigned to connect two site offices which are situated far away from each other. In your opinion, which one will be the appropriate solution for this, LAN extension or WAN? Justify your answer with four reasons 5

Answer: I choose wan if I assign to connect the to sites offices which are situated for a away from each other.

Reasons:

1. Its cost will be increased because we will fiber optic which is very costly the sites are very far away.
2. Its maintainers will be difficult we must use repeaters in that scenario.
3. Its performance will be affected.
4. Due to for of distance its signal will become weak.

26. A Connection-oriented service requires a session be established before start communication. When telephone call is made between two persons then which steps are involved to establish a connection? Write each step and tell how established connection is identified.05

Answer: The connection-oriented service paradigm for networking is similar to the manner in which telephones are used.

This is given as follows:

A caller dials a number of the destination. The telephone at the destination signals the arrival of a connection request. If the called person does not answer; the caller gives up after waiting for a timeout. If the called person does answer, then the connection is established. (Pg. 67)

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23. Suppose an organization wants voice communication in network by using ATM technology. Explain, how ATM eliminate the varying delays associated with variable size data packets? 03

Answer: It was designed as a single technology for voice, video and data and has low jitter (variance in delivery time) and high capacity.

It uses fixed size, small cells, 48 octet's data and 5 octets header. It can also connect multiple ATM switches into a network. (pg 65)

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