



**MIDTERM EXAMINATION**  
**CS610- Computer Network**

**Question No: 1 ( Marks: 1 ) - Please choose one**

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No error detection scheme is perfect because transmission errors can affect the additional information as well as the data.

- ▶ True
- ▶ **False**

**Question No: 2 ( Marks: 1 ) - Please choose one**

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----- Program sends a message to a remote computer and reports whether the computer responds.

- ▶ **Ping**

Ping

- ▶ Traceroute
- ▶ ICMP
- ▶ Non of the given

**Question No: 3 ( Marks: 1 ) - Please choose one**

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----- was especially concerned about the lack of high powered computers.

- ▶ **ARPA**
- ▶ IEEE

- ▶ EIA
- ▶ Non of the given

**Question No: 4 ( Marks: 1 ) - Please choose one**

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The term ----- is used to denote the definition of a packet used with a specific type of network.

- ▶ Packet
- ▶ **Frame**
- ▶ Data
- ▶ None of the given

**Question No: 5 ( Marks: 1 ) - Please choose one**

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Computer networks are often called ----- because they use packet technology.

- ▶ Ethernet
- ▶ Switch networks
- ▶ **Packet networks**
- ▶ None of the given

**Question No: 6 ( Marks: 1 ) - Please choose one**

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----- have advantages arisen from the size and ease of computation.

- ▶ **CRC**
- ▶ Parity
- ▶ Checksums
- ▶ None of given

**Question No: 7 ( Marks: 1 ) - Please choose one**

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Most LANs that employ ring topology use an access mechanism known as-----

- ▶ CSMA/CD
- ▶ CSMA/CA
- ▶ **TOKEN PASSING**
- ▶ None of the given

**Question No: 8 ( Marks: 1 ) - Please choose one**

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IEEE LLC/SNAP header is -----, which is used to specify the type of data.

- ▶ **8 octets**
- ▶ 8 bytes
- ▶ 8 bits
- ▶ None of the given

**Question No: 9 ( Marks: 1 ) - Please choose one**

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Formally named \_\_\_\_\_ informally known as the twisted pair Ethernet or TP Ethernet.

- ▶ 10 Base 2
- ▶ 10 Base 5
- ▶ **10 Base T**
- ▶ None of the given

**Question No: 10 ( Marks: 1 ) - Please choose one**

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An interface for twisted pair Ethernet must have an \_\_\_\_\_ connector , and must generate signals according to the \_\_\_\_\_ specification.

- ▶ **RJ-45, 10 Base T**
- ▶ RJ-45, 10 Base 5
- ▶ BNC, 10 Base 2
- ▶ BNC, 10 Base T

**Question No: 11 ( Marks: 1 ) - Please choose one**

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A bridges function in the \_\_\_\_\_ layers(s).

- ▶ Physical (MAC)
- ▶ **Data link**
- ▶ Network

- ▶ Physical (MAC) and Data link

**Question No: 12 ( Marks: 1 ) - Please choose one**

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A Bridge can \_\_\_\_\_

- ▶ Filter a frame
- ▶ Forward a frame
- ▶ Extend a LAN
- ▶ **Do all the above**

**Question No: 13 ( Marks: 1 ) - Please choose one**

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A Bridge forwards or filters a frame by comparing the information in its address table to the frame's \_\_\_\_\_

- ▶ Layer 2 source address
- ▶ Source node's physical address
- ▶ **Layer 2 destination address**
- ▶ Layer 3 destination address

**Question No: 14 ( Marks: 1 ) - Please choose one**

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\_\_\_\_\_ computes shortest paths in a graph by using weights on edges as a measure of distance.

- ▶ Greedy algorithm
- ▶ Distance vector algorithm

▶ **Dijkstra's algorithm**

▶ Non of the given

**Question No: 15 ( Marks: 1 ) - Please choose one**

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\_\_\_\_\_ is used for audio and video, since these have predefined maximum data rates

▶ **Constant Bit Rate (CBR) service**

▶ Variable Bit Rate (VBR) service

▶ Available Bit Rate (ABR) service

▶ None of the given

**Question No: 16 ( Marks: 1 ) - Please choose one**

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Unlike Frame Relay and ATM, SMDS (Switched multi-megabit Data service) offers\_\_\_\_\_ .

▶ **Connectionless service paradigm**

▶ Connection oriented service paradigm

▶ Both Connectionless and Connection-oriented service paradigm

▶ None of the given

**Question No: 17 ( Marks: 1 ) - Please choose one**

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A network with throughput T and delay D has a total of \_\_\_\_\_ bit in transit at any time.

- ▶ T / D
- ▶ **T x D**
- ▶ T + D
- ▶ None of the given

**Question No: 18 ( Marks: 1 ) - Please choose one**

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ATM is designed to work on\_\_\_\_\_.

- ▶ Twisted Pair
- ▶ Coaxial
- ▶ Radio Frequency
- ▶ **Fiber**

**Question No: 19 ( Marks: 1 ) - Please choose one**

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Computers attached to an ethernet use ----- in which a computer waits for the ether to be idle before transmitting a frame.

- ▶ **CSMA/CD**
- ▶ CSMA/CA
- ▶ TOKEN PASSING
- ▶ None of the given

**Question No: 20 ( Marks: 1 ) - Please choose one**

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FDDI can transmits data at a rate of -----

- ▶ **100 million bits per second**
- ▶ 10 million bits per second
- ▶ 1000 million bits per second
- ▶ None of the given

**Question No: 21 ( Marks: 2 )**

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What is the difference between the physical and logical topologies?

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

**PHYSICL 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 No: 22 ( Marks: 2 )**

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Define Vector-Distance Algorithm.

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 No: 23 ( Marks: 3 )**

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What is the concept of store and forward technology?

**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 No: 24 ( Marks: 3 )**

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How can Switched Virtual Network be established?

**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 No: 25 ( Marks: 5 )**

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How can a bridge know whether to forward frames?

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 No: 26 ( Marks: 5 )**

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Compare connection oriented and connectionless Service.

**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