



Victoria University  
of Bangladesh

## MID Term Assessment

**Md Bakhtiar Chowdhury**

**ID:** 2121210061

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**Submitted To:**

**Md. Shahin Khan**

**Lecturer, Dept. of CSE/CSIT**

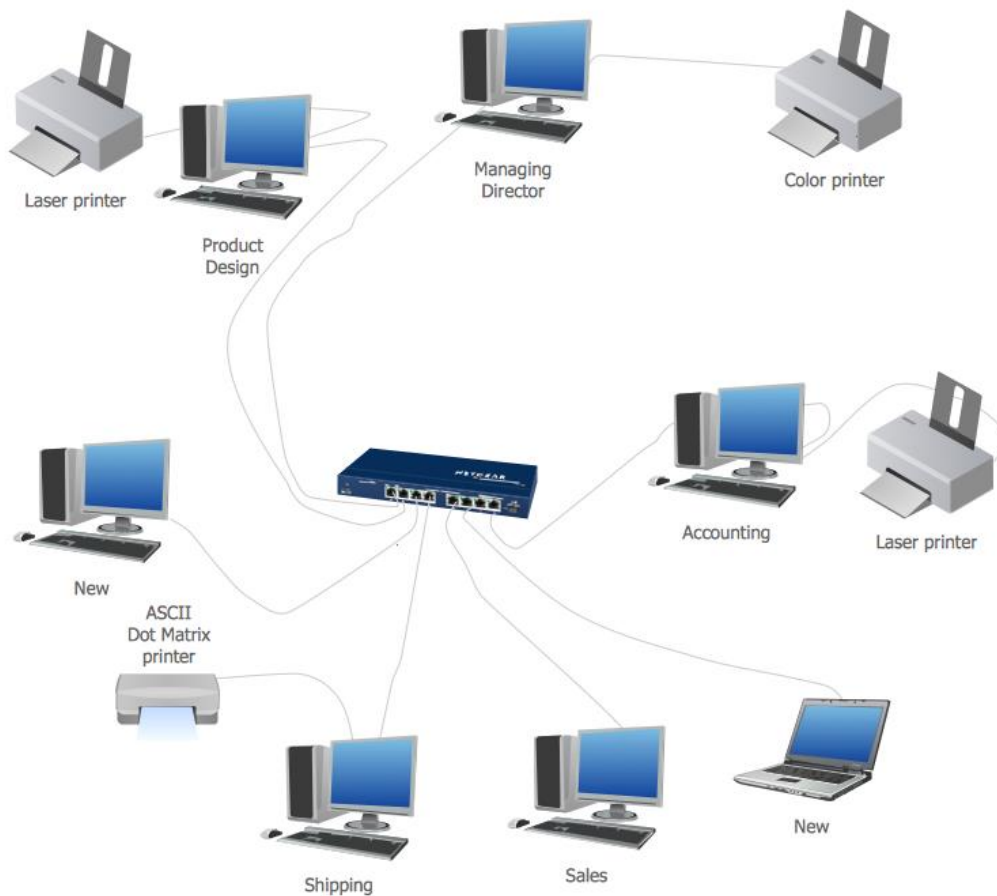
Victoria University of Bangladesh

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**Answer to the question no 1(a)**

**# What is a Network? List the network devices.**

A network consists of two or more computers that are linked in order to share resources (such as printers and CDs), exchange files, or allow electronic communications. The computers on a network may be linked through cables, telephone lines, radio waves, satellites, or infrared light beams.



Here is the common network device list:

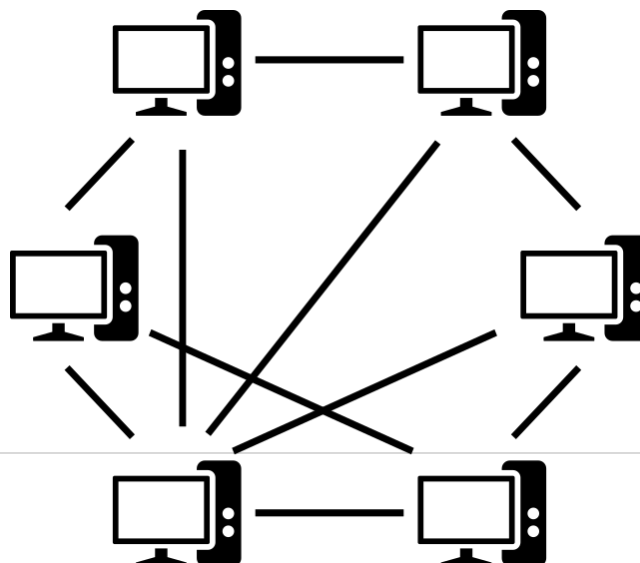
- Hub
- Switch
- Router
- Bridge
- Gateway
- Modem
- Repeater
- Access Point

**Answer to the question no 1(b)**

**# Briefly describe of Peer-to-Peer (P2P) network.**

**Answer: Peer-to-Peer (P2P):** P2p networking type is most commonly used computer networks. All computers possesses same status within the network and no computer control any other computer but it self, this network does not have server to control and monitor. Security level is not towards higher side and each work station it self is responsible for security.

In a P2P network, **computing devices use software to connect with each other over a private network, such as a home local area network (LAN) or a public network, such as the Internet.** This direct connection allows each device to share files without requiring the assistance of a remote server.



**Answer to the question no 2(a)**

**# What is NT ? Define the major three factors of selecting a topology for a network.**

**Answer:**

Network Topology is the arrangement of the elements of a communication network. Network topology can be used to define or describe the arrangement of various types of telecommunication networks, including command and control radio networks, industrial field busses and computer networks.

**The selection of topology for a network depends on the following factors-**

**1. Budget**

A rule of thumb is to never make technology procurement decisions based on price alone. There's no denying though that you can only cut your coat according to your cloth. If a topology is unaffordable, it's off the table no matter how perfectly suited it might be for your situation.

In any case, irrespective of what your preferred topology is, there'll almost always be a lower-priced alternative that's nearly as effective. On pricing matters, bus and ring topologies are quite cost-effective while star, mesh, tree and hybrid topologies are expensive.

**2. Hardware Resources**

Certain network topologies work best with certain hardware. And vice-versa. So before you make a decision on the topology to adopt, perform an inventory of your current hardware. You may also already have the hardware needed to implement a certain type of topology. So as opposed to buying everything from scratch, such existing resources give you a head start.

For instance, you may have hardware limitations such as the length of the network cable. In that case, you'd go for a topology that requires the least amount of cable for connecting nodes. Bus and star topologies perform pretty well in this regard.

### **3. Reliability**

When it comes to reliability, network topologies aren't created equal. If you are looking for high reliability because you are in an industry where even brief downtime and delays are frowned upon (e.g. banking), then network reliability is a fundamental consideration. Choose the topology that delivers the highest reliability.

Ring topology performs pretty well under heavy loads but is prone to a single point of failure. Star topology doesn't depend on any node but the network will collapse if the hub fails. Mesh and hybrid topologies score highest on the reliability front.

#### **Answer to the question no 2(b)**

**# Write down the major types of Topologies and briefly describe of Tree topology with appropriate figure .**

**Answer:**

**The major types of Topologies are-**

1. Star topology
2. Tree topology
3. Bus topology
4. Ring topology
5. Mesh topology
6. Hybrid topology

### **# describe of Tree topology**

Tree topology combines the characteristics of bus topology and star topology.

A tree topology is a type of structure in which all the computers are connected with each other in hierarchical fashion.

The top-most node in tree topology is known as a root node, and all other nodes are the descendants of the root node.

There is only one path exists between two nodes for the data transmission. Thus, it forms a parent-child hierarchy.

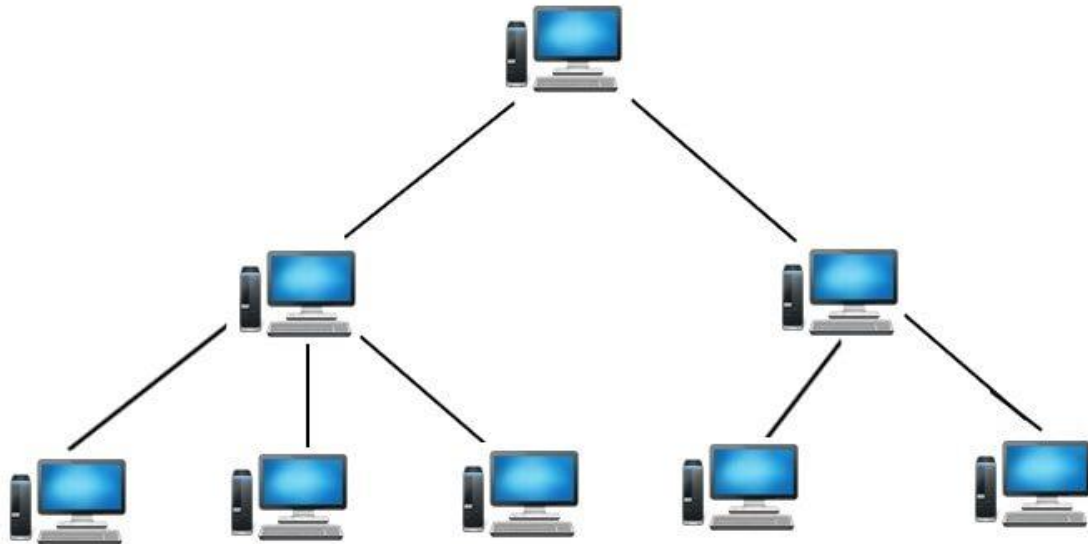
### **Advantages of Tree topology**

- ❖ Support for broadband transmission: Tree topology is mainly used to provide broadband transmission, i.e., signals are sent over long distances without being attenuated.
- ❖ Easily expandable: We can add the new device to the existing network. Therefore, we can say that tree topology is easily expandable.
- ❖ Easily manageable: In tree topology, the whole network is divided into segments known as star networks which can be easily managed and maintained.
- ❖ Error detection: Error detection and error correction are very easy in a tree topology.
- ❖ Limited failure: The breakdown in one station does not affect the entire network.
- ❖ Point-to-point wiring: It has point-to-point wiring for individual segments.

### **Disadvantages of Tree topology**

- ❖ Difficult troubleshooting: If any fault occurs in the node, then it becomes difficult to troubleshoot the problem.
- ❖ High cost: Devices required for broadband transmission are very costly.

- ❖ Failure: A tree topology mainly relies on main bus cable and failure in main bus cable will damage the overall network.
- ❖ Reconfiguration difficult: If new devices are added, then it becomes difficult to reconfigure.



**Answer to the question no 4(a)**

**# Why do we build a Network? List the basic components Of a Network.**

**Answer:**

**File sharing** - easily share data between different users, or access it remotely if you keep it on other connected devices. Primary use of network is to share data and peripherals among users irrespective of their physical location. Ex. Sharing database, program files, audio and video files, printer and scanners etc.

**Resource sharing** - using network-connected peripheral devices like printers, scanners and copiers, or sharing software between multiple users, saves money.

**Improved Communication:** A computer network enables reliable, secure and faster communication between users. It saves our time and offers easy communication methods. Ex. e-mail, SMS and MMS etc.

**Application sharing:** Applications can be shared over the network, and this allows to implement client/server applications

**Network gaming:** A lot of network games are available, which allow multi-users to play from different locations.

**Voice over IP (VoIP):** Voice over Internet Protocol (IP) is a revolutionary change in telecommunication which allows to send telephone calls (voice data) using standard Internet Protocol (IP) rather than by traditional PSTN.

**Reduced Communication cost:** Sharing resources also reduces its communication cost. Using today's public network we can send a large quantity of data at very low cost. Internet and Mobile network playing a very important role in sending and receiving text, image, audio and video data.

**List the basic components Of a Network.**

- ❖ Sender
- ❖ Receiver
- ❖ Servers
- ❖ Clients
- ❖ Transmission Media
- ❖ Shared data
- ❖ Shared printers and other peripherals -
- ❖ Network Interface Card
- ❖ Hub
- ❖ Switch
- ❖ Router
- ❖ LAN Cable



**Answer to the question no 4(i)**

**# Network Security**

**Answer:**

**Network Security:** Network security is the protection of the underlying networking infrastructure from unauthorized access, misuse, or theft. It involves creating a secure infrastructure for devices, applications, users, and applications to work in a secure manner.

**Some common Network threats are**

- ❖ Intrusion / Access Attack
- ❖ Denial of Service (DoS) attack
- ❖ Malicious Program (Virus, Worm, Trojans)

**Answer to the question no 4(ii)**

**# Domain**

**Answer:**

In simple term, Domain name is a unique group name assigned to a web server or web site. A **domain** name is the address of a website. It's the name you type into a web browser to access that specific website.

Some common domains on the Internet are- .com, .org, .edu, .net, .gov and country domain like .in, .ca, .jp etc.

The complete unique address of the website is called URL (Universal Resource Locator) like www.google.com

**Answer to the question no 4(iii)**

**# HTTP**

**Answer:**

The Hypertext Transfer Protocol (HTTP) is the foundation of the World Wide Web, and is used to load webpages using hypertext links. HTTP is an application layer protocol designed to transfer information between networked devices and runs on top of other layers of the network protocol stack. A typical flow over HTTP involves a client machine making a request to a server, which then sends a response message.

**>>>>>END<<<<<**