

MODEL ANSWER PAPER
SUBJECT: COMPUTER ORGANIZATION & OPERATING SYSTEM
(THEORY)

STD: XII
Max Marks: 50

Course: Computer Technique
Time: 2 hrs

Q1A.) Fill in the blanks by choosing the appropriate words from the choices: (4)

1. WANs
2. Shielded twisted pair
3. Kernel
4. Core
5. ls

B.) Pick the odd one out from the following: (5)

1. Cable
2. internet
3. linear bus topology
4. Ctrl+c
5. Microsoft word

C.) Match the following: (4)

1. Mkdir
2. Wide Area Network
3. Username
4. Print servers
5. cp

D.) Answer the following in a word or phrase (5)

1. Digital
2. Linear bus topology
3. Gateway
4. Connectors

5. LAN

Q2.) Answer the following questions in one sentence each: (10)

1. The two physical topologies are Ring Topology and Linear Bus topology.
2. Data transmission is propagating the data signal from one node to another using an appropriate medium of transmission.
3. A) A client is any user accessible computer on the network.
And a Node is any connection made on the network.
4. A repeater is an electronic device that receives a weak or low level signal and retransmits it at a higher level or higher power, so that the signal can cover longer distances without degradation.
5. The advantage for networking is: Data and Information Sharing: In a networked environment, any authorized user can use a computer on a network to access data and information stored on other computers in the network.
6. The one feature of Linux is: Linux is inexpensive; All versions of Linux may be freely downloaded from the web.
7. A switch is a networking device that performs transparent bridging at up to the speed of the hardware. While Network Interface Card (NIC) is an expansion card or other device used to provide network access to a computer or other device, such as a printer.
8. The advantage of using bridge is: It helps in connecting a small number of individual networks to make them work together as one large network.
9. The print server is a host computer or device to which one or more printers are connected and that can accept print jobs from external client computers connected to the print server over a network.
10. Network Domain is a form of a computer network in which all user accounts, computers, printers and other security principals, are registered with a central database (called a directory service) located on one or more clusters of central computers.

Q3.) Answer the following questions in two sentences each. (Any 10)

1. The two features of ring topology are: it is connecting any two nodes directly. Any node on the network is connected to two other nodes. No end terminators are used in a ring topology. There is a peer to peer connection between the nodes. No client server architecture is used. Therefore the server is absent on a

ring topology and all are workstations. If any of the workstation stops working then the full network fails. Data traffic is faster compared to the other topologies.

2. EDI standards are essentially the agreements between the user and of EDI on how the data are to be formatted and communicated. They are as given below:
 - Communication passwords and identification codes
 - Rates and transmission mode
 - Line Protocols
 - Network availability and service level.

3. The Broadband transmits different types of signals simultaneously and the baseband cable transmits of one type of signal at a time. In Broadband, analog signals are used while in baseband digital signals are used. Frequency division multiplexing is not possible in baseband while in broadband Frequency division multiplexing is possible. Baseband signals travels in short distance while Broadband signals travels in long distance.

4. A star topology is comprised of computers connected to a central network connector, which is mostly a hub or a switch. All the information that transfers from one computer to another on the network passes via the hub or switch. The hub or switches can then be connected to form one large local area network. Diagram should be drawn.

5. Wireless Network:
 - a) This network uses infrared or radio frequency signals to share information and resources between devices.
 - b) Installation is easy
 - c) Many nodes on a wireless network cannot hear all of the other wireless nodes on the same network.
 - d) Speed and bandwidth is low up to 54mbps.

Wired Network: a) This network uses physical cables to transfer data between different devices and computer system.

- b) Installation is from difficult to moderate.
- c) All of the nodes on a wired network can hear all other nodes.
- d) Speed and bandwidth is high up to 100mbps.

6. LAN means Local Area Network. The difference between LAN and MAN are:

LAN: a) It is restricted to a small area like the building a full or a room of any building etc.

b) Data transmission is faster.

C) Error detection is easier

d) Cost for implementation is low

MAN: a) It is spawning a larger area like a big city or may be a area

b) Data transmission may be slower.

c) Error detection may take lot of time.

d) Cost wise it's expensive since external devices and services may be required.

7. Network topology is the arrangement of the various elements (links, nodes, etc.) of a computer network. Essentially, it is the topological structure of a network and may be depicted physically or logically.

The one type of topology is as below:

a) Star topology: In local area networks with a star topology, each network host is connected to a central hub with a point-to-point connection. In Star topology every node (computer workstation or any other peripheral) is connected to a central node called hub or switch. Diagram can be included.

8. The below figures in terms of computers are:

1) Gateway	2) Bridge
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9. Respected diagram should be drawn.

10. A network of two or more computers that use the same program or type of program to communicate and share data. Each computer, or peer, is considered equal in terms of responsibilities and each acts as a server to the others in the network. A dedicated server is not required. Peer – to- peer networks work best in small environments.

Diagram for Peer to Peer network should be drawn.

The following are the types of servers:

11. **Dedicated server:** is a type of Internet hosting in which the client leases an entire server not shared with anyone else. This is more flexible than shared hosting, as organizations have full control over the server(s), including choice of operating system, hardware, etc.

12. The Internet, sometimes called simply "the Net," is a worldwide system of computer networks - a network of networks in which users at any one computer can, if they have permission, get information from any other computer (and sometimes talk directly to users at other computers).

13. Hybrid topology:

- a) **Reliable** : Unlike other networks, fault detection and troubleshooting is easy in this type of topology. The part in which fault is detected can be isolated from the rest of network and required corrective measures can be taken, **WITHOUT** affecting the functioning of rest of the network.
- b) **Scalable**: It's easy to increase the size of network by adding new components, without disturbing existing architecture.

14. Web Server: is an information technology that processes requests via HTTP, the basic network protocol used to distribute information on the World Wide Web. The term can refer either to the entire computer system, an appliance, or specifically to the software that accepts and supervises the HTTP requests.

Mail Server: is the computerized equivalent of your friendly neighborhood mailman. Every email that is sent passes through a series of mail servers along its way to its intended recipient. Although it may seem like a message is sent instantly - zipping from one PC to another in the blink of an eye - the reality is that a complex series of transfers takes place.
