**MOTHER TERASA COLLEGE OF ARTS &SCIENCE**

**METTUSALAI-ILLUPPUR**

**SUBJECT : COMPUTER NETWORKS**

**CLASS : III BCA**

1.Define Computer Network

A computer network is a set of computers connected together for the purpose of sharing resources. The most common resource shared today is connection to the Internet. Other shared resources can include a printer or a file server. The Internet itself can be considered a computer network.

2.Define Topology

Network topology is the interconnected pattern of network elements. A network topology may be physical, mapping hardware configuration, or logical, mapping the path that the data must take in order to travel around the network.

3.Define Collision

A "collision" has two different meanings. One occurs when two or more sets of [data](https://techterms.com/definition/data) are modified and produce the same resulting value. The other is specific to [networking](https://techterms.com/definition/network) and happens when two devices transmit data at the same time.

4.What do you mean by Framing?

**Framing** : - At data link layer , it extracts message from sender and provide it to receiver by providing sender's and receiver's address.

Types:-

1)**Fixed Size Framing** : - there is no need to provide boundaries to the frame, length of the frame itself acts as delimiter.

2) **Variable Size Framing** : -  In this there is need to define end of frame as well as beginning of next frame to distinguish.

5.What is gateway?

A gateway is a node (router) in a computer network, a key stopping point for data on its way to or from other networks. Thanks to gateways, we are able to communicate and send data back and forth. The Internet wouldn't be any use to us without gateways (as well as a lot of other hardware and software).

6.What is Routing? Name two methods of Routing?

Although there are many types of routing protocols, three major classes are in widespread use on IP networks: Interior gateway protocols type 1, link-state routing protocols, such as OSPF and IS-IS. Interior gateway protocols type 2, distance-vector routing protocols, such as Routing Information Protocol, RIPv2, IGRP.

7.What is necessity Flow control?

In data communications, flow control is the process of managing the rate of data transmission ... It is more convenient to calculate the average number of transmissions necessary to communicate a block, a quantity we denote by 0, and then to ...

8. What is a Link?

A link refers to the connectivity between two devices. It includes the type of cables and protocols used in order for one device to be able to communicate with the other.

9. What are the layers of the OSI reference model?

There are 7 OSI layers: Physical Layer, Data Link Layer, Network Layer, Transport Layer, Session Layer, Presentation Layer and Application Layer.

10.What is backbone network?

A backbone network is a centralized infrastructure that is designed to distribute different routes and data to various networks. It also handles management of bandwidth and various channels.

11. What is subnet mask?

A subnet mask is combined with an IP address in order to identify two parts: the extended network address and the host address. Like an IP address, a subnet mask is made up of 32 bits.

12.What is the maximum length allowed for a UTP cable?

A single segment of UTP cable has an allowable length of 90 to 100 meters. This limitation can be overcome by using repeaters and switches.

13. What is data encapsulation?

Data encapsulation is the process of breaking down information into smaller manageable chunks before it is transmitted across the network. It is also in this process that the source and destination addresses are attached into the headers, along with parity checks.

14. What is VPN?

VPN means Virtual Private Network, a technology that allows a secure tunnel to be created across a network such as the Internet. For example, VPNs allow you to establish a secure dial-up connection to a remote server.

15. Define NAT.

NAT is Network Address Translation. This is a protocol that provides a way for multiple computers on a common network to share single connection to the Internet.

16.What is the job of the Network Layer under the OSI reference model?

The Network layer is responsible for data routing, packet switching and control of network congestion. Routers operate under this layer.

17. What is NIC?

NIC is short for Network Interface Card. This is a peripheral card that is attached to a PC in order to connect to a network. Every NIC has its own MAC address that identifies the PC on the network.

18. What is a private IP address?

Private IP addresses are assigned for use on intranets. These addresses are used for internal networks and are not routable on external public networks. These ensures that no conflicts are present among internal networks while at the same time the same range of private IP addresses are reusable for multiple intranets since they do not "see" each other.

19.What is DoS?

DoS, or Denial-of-Service attack, is an attempt to prevent users from being able to access the internet or any other network services. Such attacks may come in different forms and are done by a group of perpetuators. One common method of doing this is to overload the system server so it cannot anymore process legitimate traffic and will be forced to reset.

20.What common software problems can lead to network defects?

Software related problems can be any or a combination of the following:

• client server problems

• application conflicts

• error in configuration

• protocol mismatch

• security issues

• user policy and rights issues

21. What is ICMP?

ICMP is Internet Control Message Protocol. It provides messaging and communication for protocols within the TCP/IP stack. This is also the protocol that manages error messages that are used by network tools such as PING.

22. What is Ping?

Ping is a utility program that allows you to check connectivity between network devices on the network. You can ping a device by using its IP address or device name, such as a computer name.

23.What is IPv6?

IPv6 , or Internet Protocol version 6, was developed to replace IPv4. At present, IPv4 is being used to control internet traffic, butis expected to get saturated in the near future. IPv6 was designed to overcome this limitation.

24.What is the role of IEEE in computer networking?

IEEE, or the Institute of Electrical and Electronics Engineers, is an organization composed of engineers that issues and manages standards for electrical and electronic devices. This includes networking devices, network interfaces, cablings and connectors

25.What is Mesh topology?

Mesh topology is a setup wherein each device is connected directly to every other device on the network. Consequently, it requires that each device have at least two network connections.