Unit-1
Introduction to Computer Network

Q-A Objective Type Questions. [14 Marks]

1.Transport Layer of OSI model lies between Network and **Session layer**.

2.TCP/IP Stand for Transmission **Control Protocol/Internet Protocol.**

3. ISP Stand for **Internet Service provider.**

4. MAN stand for **Metropolitan Area Network.**

5 .Mesh Topology is communication is very fast between any two nodes. (**True**/False)

6. OSI Stand for **Open Systems Interconnection.**

7. In **Ring**Topology computer and other networking device are connected to each other in a Circular way.

8. **.tv** is not a Country Domain.

9. Stand for URL **Uniform resource locator**.

10. **Web portal**is a subset of the website.

11. **com** is not a generic domain.

12. In OSI Model is **4**on upper layer and **5** is a lower layer.

13. TCP/IP Model is made up of seven layers.(True/**False**)

14. What is Token Ring in Computer Networks?

Ans. A Token Ring network is a local area network (LAN) in which all computer are connected in a ring or star topology and pass one or more logical token from host to host.

15. LAN Stand for **Local Area Network.**

16. WAN Stand for **Wide Area Network.**

17. MAN Stand for **Metropolitan Area Network.**

18. ISP Stand for **Internet Service Provider.**

19. IP Stand for **Internet Protocol.**

Q-B Attempt the Questions (2 mark of each):

1. **What is Computer Network?**

Ans. A Computer network is a collection of hardware components and computer interconnected by communication channels that allow sharing of resources and Information**.**

2. **List out of OSI Model.**

Ans.1) Physical Layer

2) Data Link Layer

3) Network Layer

4) Transport Layer

5) Session Layer

(6) Presentation Layer

(7) Application Layer

3. **What is Internet?**

Ans. The Internet is a global system of interconnected computer network that use the standardized Internet Protocol Suite to serve billions of users worldwide.

4. **What is VSAT?**

Ans. VSAT (Very Small Aperture terminal)is a satellite communication system that serves home and business users… the transceiver or send a signal to a satellite transponder in the key.

5. **Differentiate between Internet and Intranet.**

Ans.

Internet	**Intranet**
1. Internet provides unlimited information which can be viewed by everyone whereas.	1. Intranet data circulates within the organization.
2. The Internet provides access to every one	2. Intranet is a private network that belongs to a firm or an institution.

6. **What is Portal?**

Ans. Portal is a message passing interface to allow scalable, high performance network communication between nodes of a parallel computing system.

Q-C Attempt the Questions (3 mark of each):

1. Explain different types of computer network.

Ans.A Computer Network Interconnection of various computer systems.

There are three types of Computer Network:

i) LAN

ii) MAN

iii) WAN

i)LAN (Local Area Network):

- LAN is a group of computer and associated devices that share a common Communication line or wireless link.
- It used in small level company or organization or institute.

ii) MAN(Metropolitan Area Network):

- A MAN is a large computer network that usually spans a city. A MAN usually interconnects a number of local area network using high capacity and hi-speed technology.
- A MAN is a group of LANs. The best example of these types of network is cable television network.

iii)WAN (Wide Area Network):

- A WAN spans a large geographic area, such as a state area country, TheWorld's most popular WAN is the Internet.
- WAN generally utilize different and much more expensive networking equipment than do LANs or MANs.

2. Explain DNS in Details.

Ans.

- **Definition:**

- The Domain Name Server is a hierarchical distributed naming system for computer services, or any resource connected to the Internet or a private Network.

- DNS server an internet services that translate domain name into IP addresses.

- A Domain name is a meaningful and easy-to remember "handle" foe an Internet address. The Internet protocol address.

- DNS is just another one of the many features of the Internet that of the Internet that we take for granted.

- Fully qualified domain names(FQDNS):
  - When the domain name system, it is common to work with only a part of the domain hierarchy.
  - The rules for doing this are implementation dependent and locally configurable.

- Generic domains:
  - The top-level name are called the generic top-level domains and can be three characters or more length.

- DNS-Generic Domains:
  - These names are registered with and maintained by the Internet Corporation for Assigned names and Numbers.

- Country Domains:
  - There are also top-level domains named for the each of the ISO 3166 international 2-Character country codes.

- Mapping domain names to IP addresses:
  - The mapping of names to address consists of independent ,cooperative system Called name servers.

- DNS-Naming hierarchy:
  - Each leaf represents a name server that handles names for a single sub domain links in the conceptual true do not indicate physical connections.

Q-D Attempt the Questions (5 mark of each):

1.What is Network Topology? Explain Ring and Star Topology briefly.

Ans.

- **Definition:**

  In Computer Networking "topology "is basically defined as layout or design of the connected devices.

- These topology can be either **physical** or **logical** design.
  - The **Physical Topology**refers to the physical layout of the devices connected to the network.
  - The **Logical Topology**is based on transferring data from one device to other devices.
- There are six different Networking Topologies

  Bus, Ring, Star, tree, mesh, Hybrid

1. **Ring Topology :**
   - Ring network topology computers and networking devices are connected to each other in a circular way.
   - Ring topology network first implement in IBM company network.
- **Advantages of Ring Topology:**
  - The Ring network works well where there is no central site computer system.
  - It is truly distributed data processing system.
- **Disadvantages of Ring Topology:**
  - The ring network is not as popular as star network because of its more complicated control software.

2. **Star Topology :**
   - This is the most commonly used network topology design in the network topologies.
   - In Star, all computer are connected to central device called hub, router or switches using unshielded twisted Pair(UTP) or Shielded Twisted Pair (STP)cable.
   - Star Topology all computers are connected to central device. We require more connecting devices like router
- **Advantages of Star Topology:**
  - Easy to install and remove nodes.
  - Easy to delete faults.
- **Disadvantages of Star Topology:**

- Require more cable length than a bus topology.
- Central device failure, entire network failure.
- More Expensive than bus topology because of the cost of the hubs, switches or etc…

3. **Explain OSI Model briefly.**

Definition:

- **Open System Introduction (OSI)** model is a reference model developed by **ISO (International Organization for Standardization).**
- The model define 7 layers that describe how application running upon network aware devices may communication with each other.

1. Physical Layer
2. Data Link Layer
3. Network Layer
4. Transport Layer
5. Session Layer
6. Presentation Layer
7. Application Layer

1. **Physical Layer:**
   - The Physical layer of the OSI model define connector and interface Specifications, as well as the medium requirements.
   - Cabling system components
   - Adapters that connect media to physical interfaces.
   - The Physical Layer of the OSI model is only part of a LAN.
2. **Data Link Layer:**
   - Layer deals with getting data specific medium and individual links by providing one more data link connections between two network entities.
   - The Data link Layer is common networking components in Network interface cards, Ethernet and Token Ring Switch and Bridges.
3. **Network Layer:**
   - This Layer of the OSI model provides an end-to end logical addressing system so that a packet of data can be routed across several layer 2 networks.
   - Internet Protocol (IP) addresses make network easier to both set up and connect with on another.
4. **Transport Layer:**
   - This Layer is responsible for the ordering and reassembly of packets that may have been broken up to travel across certain media.

- Application identification, Client-side entity message arrived intact, Transmission error detection.
- Control of data flow to prevent memory overruns.

5. **Session Layer:**
    - The Session layer provides various services , including tracking the number of bytes that each of the session has acknowledged receiving form the other end of the session
    - Virtual Connection between application entities , Synchronization of data flow
6. **Presentation Layer:**
    - This provides function call exchange between host operating system and software layer.
    - Encryption and decryption of a message for security.
    - Graphics formatting and content translation.
7. **Application Layer:**
    - The Application layer provides an interface for the end user operating a devices connected to a network.
    - Support for file transfer and Electronic mail
    - Electronic messaging and Browsing the World Wide Web.