**Assignment No. 1 [2]**

**Q. Write some network terminology?**

**Solution:**

1. **IP Address:**

A unique string of numbers separated by periods (IPv4) or colons (IPv6) that identifies each computer using the Internet Protocol to communicate over a network.

1. **Subnet Mask:**

A 32-bit number that divides an IP address into network and host portions, helping to identify the network segment the IP address belongs to.

1. **Gateway:**

A node that serves as an access point to another network, often used to connect different types of networks.

1. **DNS (Domain Name System):**

A hierarchical system for naming resources on the Internet, translating human-readable domain names to IP addresses.

1. **MAC Address:**

A unique identifier assigned to a network interface card (NIC) for communications at the data link layer of a network segment.

1. **Router:**

A networking device that forwards data packets between computer networks, directing traffic along the most efficient routes.

1. **Switch:**

A device that connects devices on a computer network by using packet switching to forward data to its destination.

1. **Firewall:**

A network security system that monitors and controls incoming and outgoing network traffic based on predetermined security rules.

1. **VPN (Virtual Private Network):**

A technology that creates a safe and encrypted connection over a less secure network, such as the internet.

1. **Bandwidth:**

The maximum rate of data transfer across a given path, measured in bits per second (bps).

1. **Latency**:

The delay before a transfer of data begins following an instruction for its transfer.

1. **TCP/IP (Transmission Control Protocol/Internet Protocol)**:

The suite of communication protocols used to interconnect network devices on the internet.

1. **HTTP/HTTPS (Hypertext Transfer Protocol/Secure)**:

Protocols used for transmitting hypertext requests and information on the internet, with HTTPS providing an encrypted version for secure communications.

1. **FTP (File Transfer Protocol)**:

A standard network protocol used to transfer files from one host to another over a TCP-based network.

**15.SSID (Service Set Identifier)**:

The name of a wireless local area network (WLAN).

1. **DHCP (Dynamic Host Configuration Protocol)**:

A network management protocol used to automate the process of configuring devices on IP networks.

1. **NAT (Network Address Translation)**:

A method of remapping one IP address space into another by modifying network address information in the IP header of packets while they are in transit.

**17.OSI Model (Open Systems Interconnection Model)**:

A conceptual framework used to understand and implement standard protocols in seven layers: Physical, Data Link, Network, Transport, Session, Presentation, and Application.

1. **VLAN (Virtual Local Area Network)**:

A logical subnetwork that can group together a collection of devices from different physical LANs.