Assignment Questions I

Subject :- Computer Network

➔What is a Computer Network ? Write its uses.

A computer network is a group of interconnected computers that communicate and share resources.

Uses:

1. **Data Sharing**: Enables sharing of files and information.
2. **Resource Sharing**: Allows sharing of hardware (printers, scanners) and software applications.
3. **Communication**: Facilitates email, instant messaging, and video conferencing.
4. **Remote Access**: Provides access to data and systems from different locations.
5. **Collaboration**: Enhances teamwork through shared workspaces and collaborative tools.

➔What are the different layers of the OSI model? write its uses.

The OSI (Open Systems Interconnection) model has seven layers:

1. **Physical Layer**
    - **Uses**: Transmits raw bitstream over physical medium (cables, wireless).
2. **Data Link Layer**
    - **Uses**: Provides error detection and correction, frames data for physical transmission.
3. **Network Layer**
    - **Uses**: Manages data routing, addressing, and packet forwarding (IP addresses).
4. **Transport Layer**
    - **Uses**: Ensures reliable data transfer, error recovery, and flow control (TCP/UDP).
5. **Session Layer**
    - **Uses**: Manages sessions or connections between applications.
6. **Presentation Layer**
    - **Uses**: Translates data formats, encryption, and compression.
7. **Application Layer**
    - **Uses**: Provides network services directly to end-user applications (HTTP, FTP, SMTP).

➔Differentiate between OSI and TCP/IP model.

OSI Model:

1. **Layers**: 7 (Physical, Data Link, Network, Transport, Session, Presentation, Application).
2. **Developed By**: ISO (International Organization for Standardization).
3. **Protocol Independence**: Abstract model not tied to specific protocols.
4. **Layer Separation**: Strictly defined layers with distinct functions.
5. **Examples**: More theoretical, used as a teaching tool.

TCP/IP Model:

1. **Layers**: 4 (Link, Internet, Transport, Application).
2. **Developed By**: DARPA (Defense Advanced Research Projects Agency).
3. **Protocol Stack**: Specifically designed for the Internet; includes specific protocols (TCP, IP).
4. **Layer Integration**: Layers may combine functionalities (e.g., OSI's Application, Presentation, and Session layers are combined into one Application layer).
5. **Examples**: Practical and widely used in real-world networking (Internet).