Unit-01 Data Communication (Puzzles)

Components

Puzzle: Identify the Component

- You have a device that performs the primary processing of instructions. It connects directly to the motherboard and communicates with all other components. What is this component?
- **Answer:** CPU (Central Processing Unit)

Direction of Data Flow

Puzzle: Data Flow Direction

- Imagine a communication system where data flows only from the transmitter to the receiver and not back. What type of data flow is this?
- **Answer:** Simplex

Networks

Puzzle: Network Identification

- You are in a large building with interconnected computers over a network. All these computers are within a few floors. What type of network is this?
- **Answer:** LAN (Local Area Network)

Types of Connections

Puzzle: Connection Type

- Two computers are connected directly with a single cable, allowing for full-duplex communication. What type of connection is this?
- **Answer:** Point-to-Point

Topologies

Puzzle: Topology Identification

- In a network, every device is connected to a single central hub. If the hub fails, the entire network goes down. What topology is this?
- **Answer:** Star Topology

Protocols and Standards

Puzzle: Protocol Identification

- This protocol is used to transfer files over the Internet. It operates at the application layer of the TCP/IP model. What is the name of this protocol?

- **Answer:** FTP (File Transfer Protocol)

OSI and TCP/IP Model

Puzzle: OSI Layer Function

- This layer of the OSI model is responsible for routing data from one device to another, determining the best path. What layer is this?
- **Answer:** Network Layer

Physical Layer: Transmission Modes

Puzzle: Transmission Mode

- A communication channel allows data to be sent and received simultaneously between two devices. What type of transmission mode is this?
- **Answer:** Full-duplex

Transmission Media

Puzzle: Medium Type

- This transmission medium uses light to carry data and is known for its high bandwidth and low signal loss. What is this medium?
- **Answer:** Optical Fiber

Switching

Puzzle: Switching Technique

- In this type of switching, a dedicated path is established between two devices before the transmission begins. What type of switching is this?
- **Answer:** Circuit Switching

Circuit Switched Networks

Puzzle: Circuit Switching

- In a traditional telephone network, which type of switching is used where a dedicated path is set up for the duration of the call?
- **Answer:** Circuit Switching

Datagram Networks

Puzzle: Datagram Network Characteristic

- In this type of network, each packet is treated independently and can take different paths to the destination. What is this network called?
- **Answer:** Datagram Network

Virtual Circuit Networks

Puzzle: Virtual Circuit

- This type of network establishes a logical path between source and destination before data transfer and maintains it throughout the session. What is this network called?
- **Answer:** Virtual Circuit Network