UNIT I   DATA COMMUNICATIONS   MCQ

- **Which component of a computer is responsible for executing instructions to process data?**
  - a) Memory
  - b) CPU
  - c) Hard Disk
  - d) Monitor
    Answer: b) CPU

- **In which direction does data flow in a simplex communication system?**
  - a) Bi-directional
  - b) Multi-directional
  - c) One-directional
  - d) Intermittent
    Answer: c) One-directional

- **What type of network is the Internet an example of?**
  - a) PAN (Personal Area Network)
  - b) LAN (Local Area Network)
  - c) MAN (Metropolitan Area Network)
  - d) WAN (Wide Area Network)
    Answer: d) WAN (Wide Area Network)

- **Which of the following is a type of point-to-point connection?**
  - a) Star connection
  - b) Bus connection
  - c) Peer-to-peer connection
  - d) Ring connection
    Answer: c) Peer-to-peer connection

- **In which network topology is each computer connected to every other computer in the network?**
  - a) Bus
  - b) Star
  - c) Ring
  - d) Mesh
    Answer: d) Mesh

- **Which protocol is primarily used for sending emails?**
  - a) HTTP
  - b) FTP
  - c) SMTP
  - d) IP
    Answer: c) SMTP

- **What does LAN stand for?**
  - a) Local Area Network
  - b) Large Area Network
  - c) Light Area Network
  - d) Loose Area Network
    Answer: a) Local Area Network

- **In data communication, what is the role of a 'hub'?**
  - a) A device that stores data
  - b) A device that connects multiple computers in a network
  - c) A device that provides internet access
  - d) A device that manages network traffic
    Answer: b) A device that connects multiple computers in a network
- **What type of protocol is TCP/IP?**
  - a) Routing protocol
  - b) Network protocol
  - c) Transport protocol
  - d) Communication protocol
    Answer: d) Communication protocol
- **Which layer of the OSI model is responsible for routing packets?**
  - a) Physical Layer
  - b) Data Link Layer
  - c) Network Layer
  - d) Transport Layer
    Answer: c) Network Layer
- **Which topology uses a single central device to which all network devices are connected?**
  - a) Bus topology
  - b) Star topology
  - c) Ring topology
  - d) Mesh topology
    Answer: b) Star topology
- **In which network does data flow in a circular fashion?**
  - a) Bus Network
  - b) Star Network
  - c) Ring Network
  - d) Mesh Network
    Answer: c) Ring Network
- **Which of the following protocols is used for secure communication over a computer network?**
  - a) HTTP
  - b) FTP
  - c) HTTPS
  - d) SMTP
    Answer: c) HTTPS
- **What is the primary function of a router?**
  - a) To store data
  - b) To connect different networks
  - c) To provide internet access
  - d) To amplify signals
    Answer: b) To connect different networks
- **What does the term 'bandwidth' refer to in data communication?**
  - a) The range of frequencies in a signal
  - b) The speed of data transfer
  - c) The number of devices in a network
  - d) The size of data packets
    Answer: b) The speed of data transfer

- **Which component is used to connect a computer to a network?**
  - a) Monitor
  - b) Printer
  - c) Network Interface Card (NIC)
  - d) Power Supply
    Answer: c) Network Interface Card (NIC)
- **In full-duplex communication, data transmission can occur:**
  - a) In one direction only
  - b) In both directions simultaneously
  - c) Alternately in both directions
  - d) Only when requested
    Answer: b) In both directions simultaneously
- **Which network topology is most commonly used in LANs?**
  - a) Bus
  - b) Star
  - c) Ring
  - d) Mesh
    Answer: b) Star
- **What does the 'handshaking' process in communication protocols refer to?**
  - a) Initiating a connection
  - b) Disconnecting from a network
  - c) Exchanging control information
  - d) Sending data packets
    Answer: c) Exchanging control information
- **Which standard specifies wireless communication in a local area network (LAN)?**
  - a) IEEE 802.3
  - b) IEEE 802.11
  - c) IEEE 802.5
  - d) IEEE 802.15
    Answer: b) IEEE 802.11
- **Which layer of the OSI model is responsible for error detection and correction?**
  - a) Physical Layer
  - b) Data Link Layer
  - c) Network Layer
  - d) Transport Layer
    Answer: b) Data Link Layer
- **In the TCP/IP model, which layer corresponds to the OSI model's Transport layer?**
  - a) Network Layer
  - b) Internet Layer
  - c) Transport Layer
  - d) Application Layer
    Answer: c) Transport Layer
- **Which transmission mode allows data to be transmitted in both directions, but not simultaneously?**
  - a) Simplex
  - b) Half-duplex
  - c) Full-duplex
  - d) Multiplex
    Answer: b) Half-duplex
- **What type of transmission media is an optical fiber?**
  - a) Guided
  - b) Unguided
  - c) Wireless
  - d) Magnetic
    Answer: a) Guided

- **In circuit-switched networks, the path between the source and destination is:**
  - a) Established for each packet
  - b) Established before transmission and remains fixed
  - c) Established dynamically
  - d) Not established
    Answer: b) Established before transmission and remains fixed
- **Which switching technique is used in the Internet for data transfer?**
  - a) Circuit Switching
  - b) Packet Switching
  - c) Message Switching
  - d) Channel Switching
    Answer: b) Packet Switching
- **In the OSI model, which layer is responsible for the routing of data?**
  - a) Data Link Layer
  - b) Network Layer
  - c) Transport Layer
  - d) Session Layer
    Answer: b) Network Layer
- **Which of the following is a characteristic of datagram networks?**
  - a) Fixed path for each session
  - b) Connection-oriented
  - c) Each packet is treated independently
  - d) Guaranteed delivery
    Answer: c) Each packet is treated independently
- **Which layer of the OSI model is responsible for converting data into electrical signals?**
  - a) Physical Layer
  - b) Data Link Layer
  - c) Network Layer
  - d) Transport Layer
    Answer: a) Physical Layer
- **Which protocol operates at the Transport layer of the TCP/IP model?**
  - a) IP
  - b) TCP
  - c) HTTP
  - d) FTP
    Answer: b) TCP
- **In which transmission mode can data be sent and received at the same time?**
  - a) Simplex
  - b) Half-duplex
  - c) Full-duplex
  - d) Multiplex
    Answer: c) Full-duplex
- **What is the primary medium used in wireless communication?**
  - a) Copper cables
  - b) Fiber optics
  - c) Radio waves
  - d) Coaxial cables
    Answer: c) Radio waves
- **In virtual circuit networks, the path between source and destination is:**
  - a) Fixed for the entire session
  - b) Established for each packet
  - c) Established dynamically for each session
  - d) Not established
    Answer: c) Established dynamically for each session

- **Which layer of the OSI model is responsible for ensuring reliable data transfer?**
  - a) Data Link Layer
  - b) Network Layer
  - c) Transport Layer
  - d) Presentation Layer
    Answer: c) Transport Layer
- **Which of the following is NOT a type of switching technique?**
  - a) Packet Switching
  - b) Circuit Switching
  - c) Message Switching
  - d) Signal Switching
    Answer: d) Signal Switching
- **Which protocol is used for remote login in the TCP/IP model?**
  - a) SMTP
  - b) FTP
  - c) Telnet
  - d) HTTP
    Answer: c) Telnet
- **What is the primary difference between circuit-switched and packet-switched networks?**
  - a) Circuit-switched networks are more flexible
  - b) Packet-switched networks require a dedicated path
  - c) Circuit-switched networks establish a dedicated path for the entire session
  - d) Packet-switched networks establish a dedicated path for the entire session
    Answer: c) Circuit-switched networks establish a dedicated path for the entire session
- **Which layer of the OSI model handles data compression?**
  - a) Data Link Layer
  - b) Network Layer
  - c) Transport Layer
  - d) Presentation Layer
    Answer: d) Presentation Layer
- **Which of the following is an example of unguided transmission media?**
  - a) Twisted pair cables
  - b) Coaxial cables
  - c) Fiber optics
  - d) Microwave
    Answer: d) Microwave
- **In the OSI model, which layer is responsible for data formatting and encryption?**
  - a) Application Layer
  - b) Presentation Layer
  - c) Session Layer
  - d) Network Layer
    Answer: