

Chapter 9:

Networking & Cloud Computing

Exercise Solutions

A. Tick (✓) the Correct Option

1. Which is the most commonly used network card?

- a. Wi-Fi
- b. Bluetooth
- c. **Ethernet Network Card ✓**
- d. Hub

2. _____ are the sets of rules that determine how data should be transferred over the network.

- a. **Protocols ✓**
- b. Network Cards
- c. Programs
- d. Password

3. Which of the following devices are used to convert digital signals into electrical signals?

- a. Gateway
- b. **Modem ✓**
- c. Router
- d. Cables

4. _____ connects wireless communication devices to form a wireless network.

- a. WAN
- b. **Wi-Fi ✓**
- c. WAP
- d. MAN

5. Which network topology among the following requires a single communication line or one main cable?

- a. **Bus ✓**
- b. Star
- c. Tree
- d. Mesh

B. Fill in the Blanks

1. _____ is a computer network created for an individual person.

Answer: PAN

2. A computer network enables two or more computers to share _____ and hardware _____.

Answer: Data, Resources

3. In a network, modification or upgradation of the software or data is done at a _____ only.

Answer: Single Point

4. The computers that communicate with each other are called _____.

Answer: Nodes

5. A network maintained without using wires is called _____.

Answer: Wireless Networking

C. Write T for True and F for False

1. Nodes and servers have the same function.

Answer: False (F)

2. Network cards are used to physically attach a computer with a network.

Answer: True (T)

3. In the Client-Server network, there is no central server.

Answer: False (F)

4. Intranet refers to a computer network restricted to an organisation.

Answer: True (T)

5. In star topology, all the nodes in the network are connected in a circular manner.

Answer: False (F)

D. Answer the Following

1. Define networking and also state its two advantages.

Answer:

A computer network is a group of computers and other peripheral devices connected together to share data and hardware resources.

Two advantages:

1. It allows sharing of data and hardware resources.
2. It makes data transfer faster and easier.

2. Distinguish between LAN and WAN.

LAN	WAN
Covers a small area such as a room, office or school.	Covers a very large geographical area such as cities or countries.
Data transfer speed is very fast.	Data transfer speed is slower than LAN.
Managed by one organisation.	Uses public telecommunication networks.

3. Explain Client-Server architecture in brief.

Answer:

In a Client-Server network, many computers called **clients** are connected to a central computer called the **server**. The server provides services, controls access to hardware, software and other resources, while the clients request services such as data retrieval and storage.

4. Differentiate between a hub and a switch.

Hub	Switch
Sends data to all computers in the network.	Sends data only to the intended computer.
Uses broadcasting.	Uses the physical address of the destination.
Slower.	Faster and more efficient.

5. Write short notes on:

(a) TCP/IP

Answer:

TCP/IP is a set of communication protocols used on the Internet. TCP divides data into packets and reassembles them at the destination, while IP provides addressing and routing of the packets.

(b) IMAP

Answer:

IMAP (Internet Message Access Protocol) is used to access emails stored on a remote mail server. Emails remain on the server, allowing users to access them from multiple devices.

(c) SMTP

Answer:

SMTP (Simple Mail Transfer Protocol) is used for sending emails over the Internet. It transfers emails from the sender's mail server to the receiver's mail server.

E. Let's Do It

Create a PowerPoint presentation to explain the devices used for networking.

Answer (Content for PPT):

Slide 1: Networking Devices

Slide 2: Network Card – Connects a computer to a network.

Slide 3: Modem – Converts digital signals into analog signals and vice versa.

Slide 4: Hub – Broadcasts data to all connected computers.

Slide 5: Switch – Sends data only to the destination device.

Slide 6: Router – Connects different networks and forwards data packets.

Slide 7: Access Point (WAP) – Provides wireless network connectivity.

Slide 8: Gateway – Connects different types of networks.

Slide 9: Conclusion – Networking devices help computers communicate and share resources efficiently.

F. Let's Apply

Question:

Udit had clicked some photographs during his school trip. He wants to send a few of them to his friends by interconnecting mobile phones using short-range wireless connection. Which technology would be most suitable for him?

Answer:

Bluetooth would be the most suitable technology because it provides short-range wireless communication between mobile devices.

G. Let's Discuss

Question:

In a group of four students, select one topology and note one of its major advantages. Now pass the paper around while discussing why.

Answer (Example):

Star Topology

Major Advantage: If one computer or cable fails, the rest of the network continues to work normally.

H. Spearhead

Question:

IoT is one of the technologies around us but we rarely look at its working. Discuss how it connects different devices to make our lives easier.

Answer:

The Internet of Things (IoT) connects devices through the Internet so they can communicate and exchange data automatically. It makes life easier by enabling smart homes, smart appliances, wearable devices, smart vehicles, and voice assistants like Alexa.

I. Let's Talk

Question:

How is a MAN different from a LAN?

Answer:

MAN

Covers a city or metropolitan area.

Larger than LAN.

Example: City cable network.

LAN

Covers a small area like a room, office or school.

Smaller than MAN.

Example: School computer lab.

J. Let's Think

Question:

Who coined the term Cloud Computing and why?

Answer:

The term **Cloud Computing** is generally credited to **Professor Ramnath Chellappa (1997)**. It was coined to describe computing services such as storage, software, and processing that are delivered over the Internet instead of using a local computer.
