

## CH# 01

### ICT FUNDAMENTALS

### EXERCISE

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Short response questions:

**Q. No.01: List different tasks performed by robots.**

**Ans:** Tasks Performed by Robot:

Robots are widely used in manufacturing, assembly and packing, transport, earth and space exploration, surgery, weaponry, laboratory research, and mass production of consumer and industrial goods.

**Q.No. 02: Why Distributed Applications are used?**

**Ans:** Distributed Applications are used when work is too much for a single server to handle. Following are some examples of Distributed Applications: Cellular Network, Social Networks, Online Banking etc.

**Q.No. 03: What is the purpose of blockchain technology?**

**Ans:** A blockchain is a distributed database or ledger that is shared among the nodes of a computer network. As a database, a blockchain stores information electronically in digital format. Blockchains are best known for their crucial role in cryptocurrency systems, such as [Bitcoin](#), for maintaining a secure and decentralized record of transactions. The innovation with a blockchain is that it guarantees the fidelity and security of a record of data and generates trust without the need for a trusted third party.

**Q.No. 04: Describe 3D holographic imaging.**

**Ans:** 3D holographic imaging is a new technology that uses laser beams to create three Dimensional images called holograms. 3D holograms objects and animations seem to be real.

**Q.No. 05: Differentiate between LAN and WAN.**

**Ans:**

Local Area Network	Wide Area Network
<ul style="list-style-type: none"> <li>• It covers limited area i.e. building, office etc.</li> <li>• Less costly.</li> <li>• Used for sharing files, hardware etc.</li> <li>• Easy to configure and more secure.</li> </ul>	<ul style="list-style-type: none"> <li>• It covers more distance i.e. city, country, continent.</li> <li>• Expensive</li> <li>• Used to share data and information.</li> <li>• Difficult to configure and maintain its security.</li> </ul>

Q.No. 06: What are the benefits of using networks?

**Ans:** Setting up a **computer network** is a fast and reliable way of sharing information and resources within a business. It can help you make the most of your IT systems and equipment.

Advantages of computer networking

**File sharing** - you can easily share data between different users, or access it remotely if you keep it on other connected devices.

**Resource sharing** - using network-connected peripheral devices like printers, scanners and copiers, or sharing software between multiple users, saves money.

**Sharing a single internet connection** - it is cost-efficient and can help protect your systems if you properly secure the network.

**Increasing storage capacity** - you can access files and multimedia, such as images and music, which you store remotely on other machines or network-attached storage devices.

**Q.No. 07: Differentiate between wired and wireless network.**

Ans: **Wired Network**

In the networking world, “Wired” as the name suggests refers to any physical medium connected through wires and cables. The wires/cables can be copper wire, twisted pair or even fiber optic. Wired connectivity is responsible for providing high security with high Bandwidth provisioned for each user. In fact, Wired connectivity is considered highly reliable and incurs very low delay, unlike Wireless connectivity.

**Wireless Network**

“Wireless” as the term refers, uses air as a medium to send electromagnetic waves or infrared waves. Wireless devices have antennas for communication. Wireless connectivity provides a major benefit of user mobility and ease of deployment. Wireless becomes more useful in areas where Wires can’t be reached.

Though wireless connectivity is less secured and higher delay than wired connectivity, it is still preferred communication technology for customers. Wireless also earns low Installation cost in contrast to wired connectivity.

**Q.No.08: Differentiate between Client and Server.**

Ans:

Server	Client
<ul style="list-style-type: none"> <li>• A server is a powerful computer that provides services to other computers.</li> <li>• It controls all the access to hardware, software and data.</li> <li>• Server operating system is installed on it i.e Linux, Unix, Windows 2008 etc.</li> <li>• Dedicated Servers i.e File Server, Print Server, Web Server etc.</li> </ul> <div data-bbox="305 1327 724 1553" style="text-align: center;"> <pre> graph LR     Client[Client] -- Request --&gt; Server[Server]     Server -- Response --&gt; Client             </pre> </div>	<ul style="list-style-type: none"> <li>• A computer that accesses the resources shared by the server is called client.</li> <li>• Only access resources which are permitted by the network administrator.</li> </ul>

**Q.No. 09: Define Computer Network.**

Ans: Computer networking refers to **interconnected computing devices that can exchange data and share resources with each other**. These networked devices use a system of rules, called communications protocols, to transmit information over physical or wireless technologies.

**Q.No. 10: Describe components of communication system.**

Ans: Following are components of communication system:

*Sender:-* A device that sends message is called sender/source or transmitter. It can be a mobile, computer etc.

*Receiver:-* A device that receives message is called receiver. It is called sink. It can be a mobile etc.

*Message:-* Data that can be transmitted in form of text, graphics etc.

*Transmission Medium:-* It is also called communication channel. It is used as a path over which message is sent from sender to receiver e.g. coaxial cable, fibre optic etc.

*Protocol:-* Set of rules and regulations between devices that governs process of data communication. Without protocol devices cannot communicate with each other.

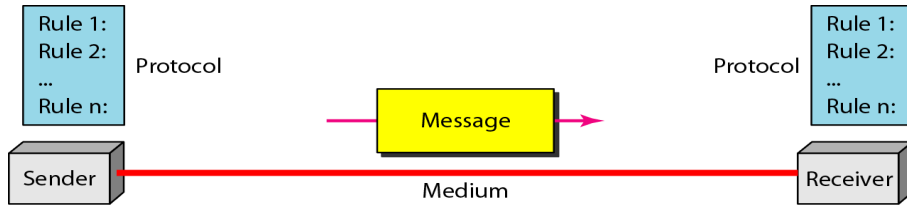


Diagram: Components of Computer Network