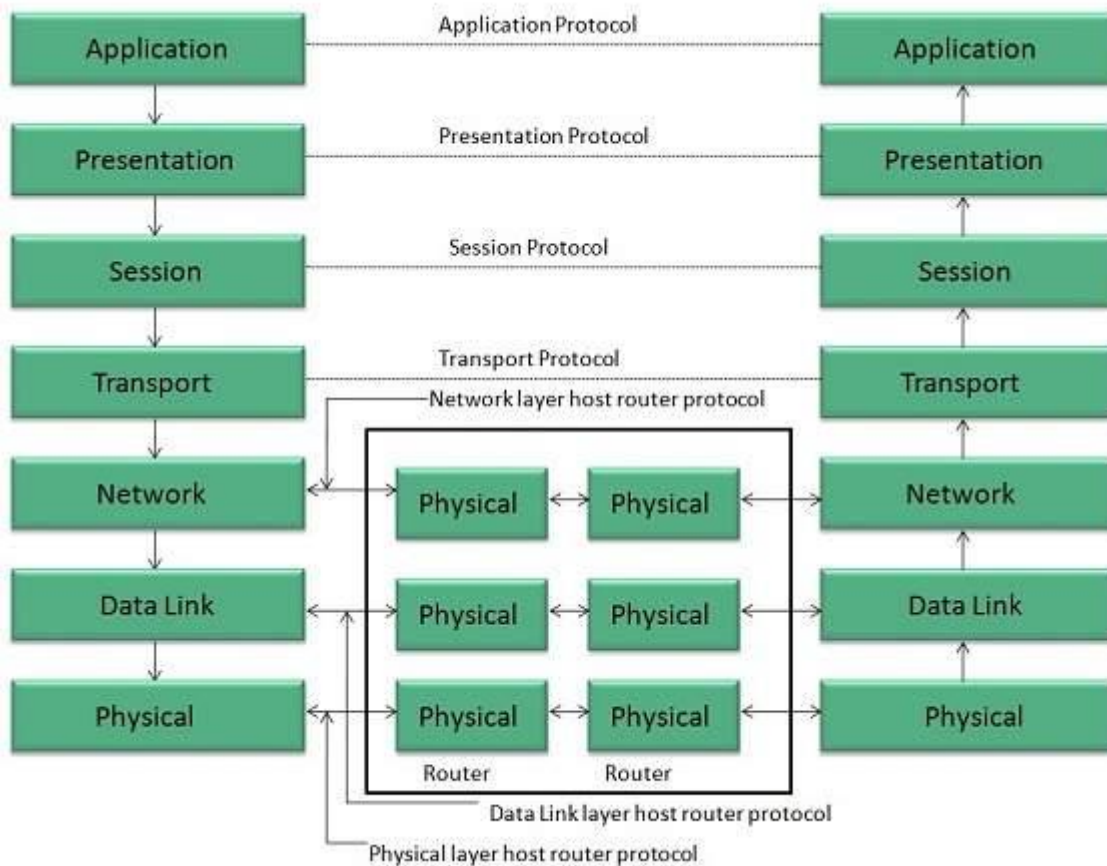# UNIT 5: NETWORKING CONCEPT

OSI Model

OSI is acronym of **Open System Interface**. This model is developed by the **International organization of Standardization (ISO)** and therefore also referred as **ISO-OSI** Model. The OSI model consists of seven layers as shown in the following diagram. Each layer has a specific function; however, each layer provides services to the layer above.

Physical Layer

The Physical layer is responsible for the following activities:

- Activating, maintaining and deactivating the physical connection.
- Defining voltages and data rates needed for transmission.
- Converting digital bits into electrical signal.
- Deciding whether the connection is simplex, half duplex or full duplex.

Data Link Layer

The data link layer performs the following functions:

- Performs synchronization and error control for the information which is to be transmitted over the physical link.
- Enables error detection, and adds error detection bits to the data which are to be transmitted.

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Network Layer

Following are the functions of Network Layer:

- To route the signals through various channels to the other end.
- To act as the network controller by deciding which route data should take.
- To divide the outgoing messages into packets and to assemble incoming packets into messages for higher levels.

Transport Layer

The Transport layer performs the following functions:

- It decides if the data transmission should take place on parallel paths or single path.
- It performs multiplexing, splitting on the data.
- It breaks the data groups into smaller units so that they are handled more efficiently by the network layer.

The Transport Layer guarantees transmission of data from one end to other end.

Session Layer

The Session layer performs the following functions:

- Manages the messages and synchronizes conversations between two different applications.
- It controls logging on and off, user identification, billing and session management.

Presentation Layer

The Presentation layer performs the following functions:

- This layer makes it sure that the information is delivered in such a form that the receiving system will understand and use it.

Application Layer

The Application layer performs the following functions:

- It provides different services such as manipulation of information in several ways, retransferring the files of information, distributing the results etc.
- The functions such as LOGIN or password checking are also performed by the application layer.

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