SNS COLLEGE OF ENGINEERING

Coimbatore-35
An Autonomous Institution

Accredited by NBA – AICTE and Accredited by NAAC – UGC with 'A+' Grade
Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

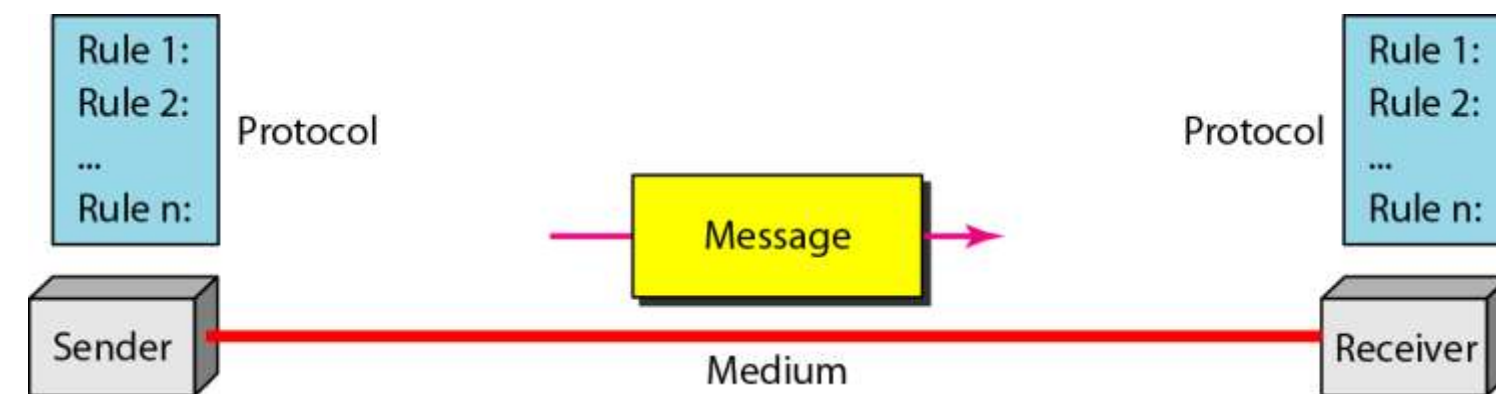# DEPARTMENT OF CSE-IOT

COMPUTER NETWORKS

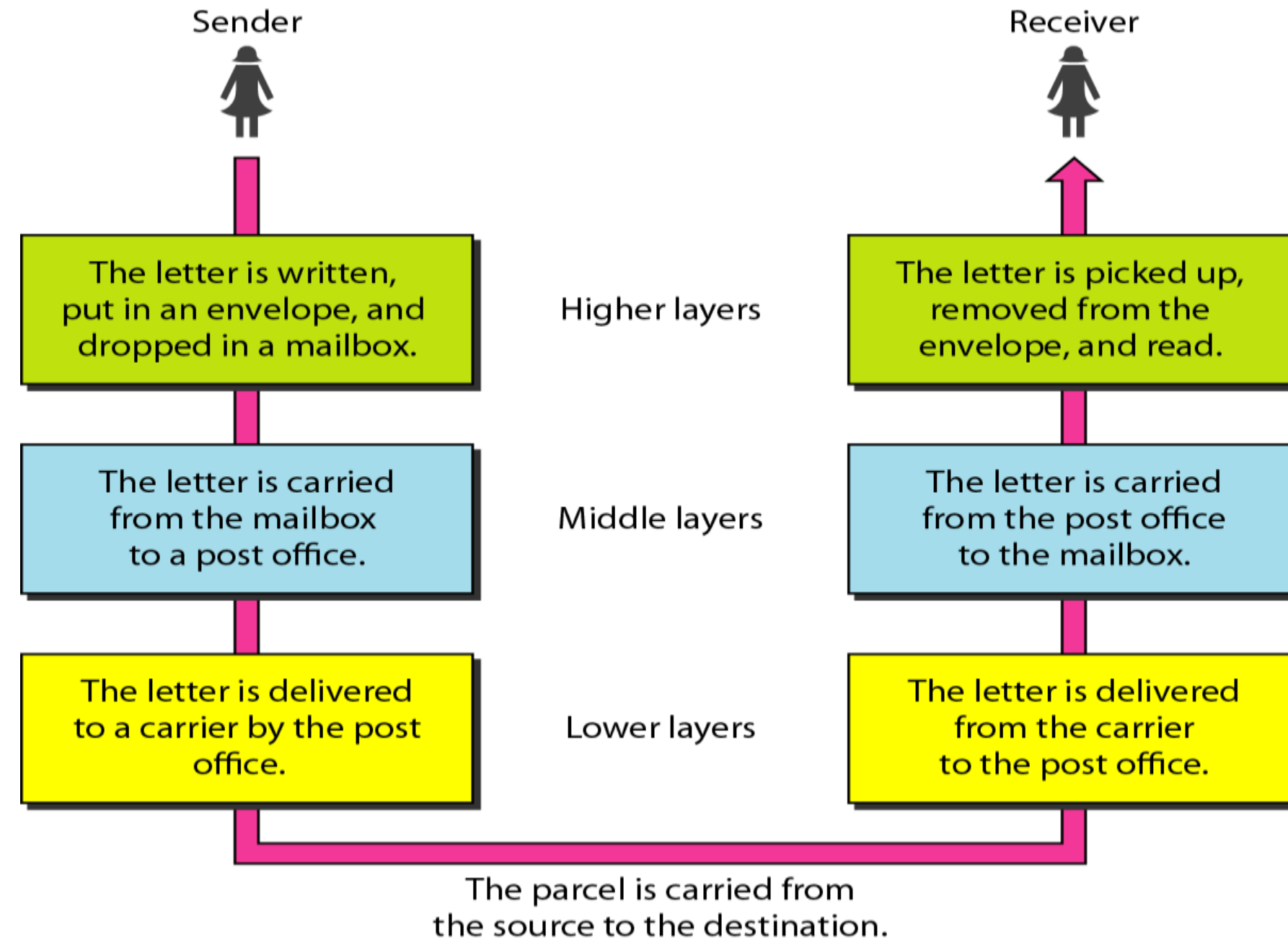## II YEAR IV SEM

UNIT 1 – FUNDAMENTALS AND PHYSICAL LAYER

Introduction

We use the concept of layers in our daily life. As an example, let us consider two friends who communicate through postal mail. The process of sending a letter to a friend would be complex if there were no services available from the post office.

Tasks involved in sending a letter

The OSI Model

Established in 1947, the International Standards Organization (ISO) is a multinational body dedicated to worldwide agreement on international standards. An ISO standard that covers all aspects of network communications is the Open Systems Interconnection (OSI) model. It was first introduced in the late 1970s.
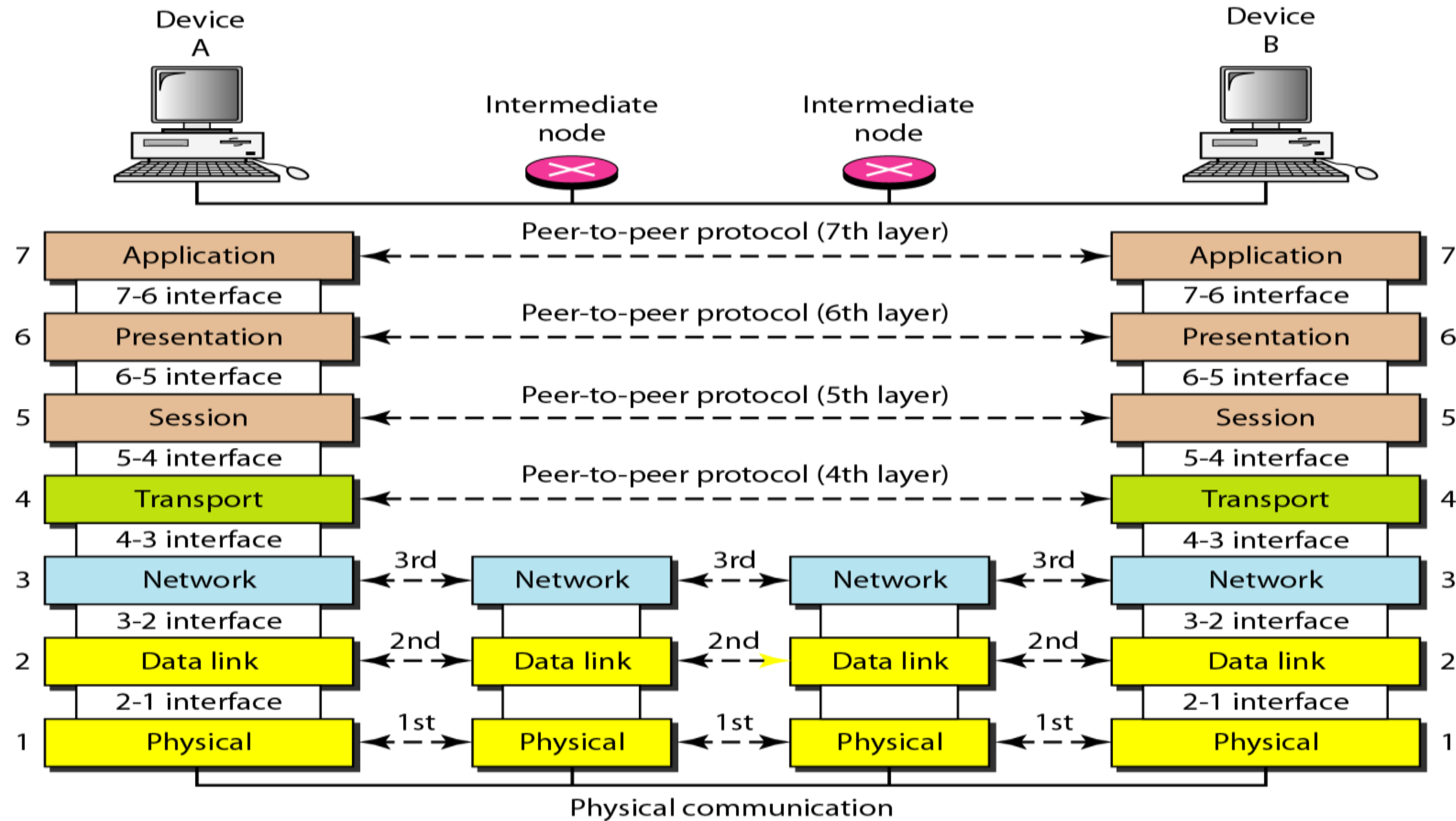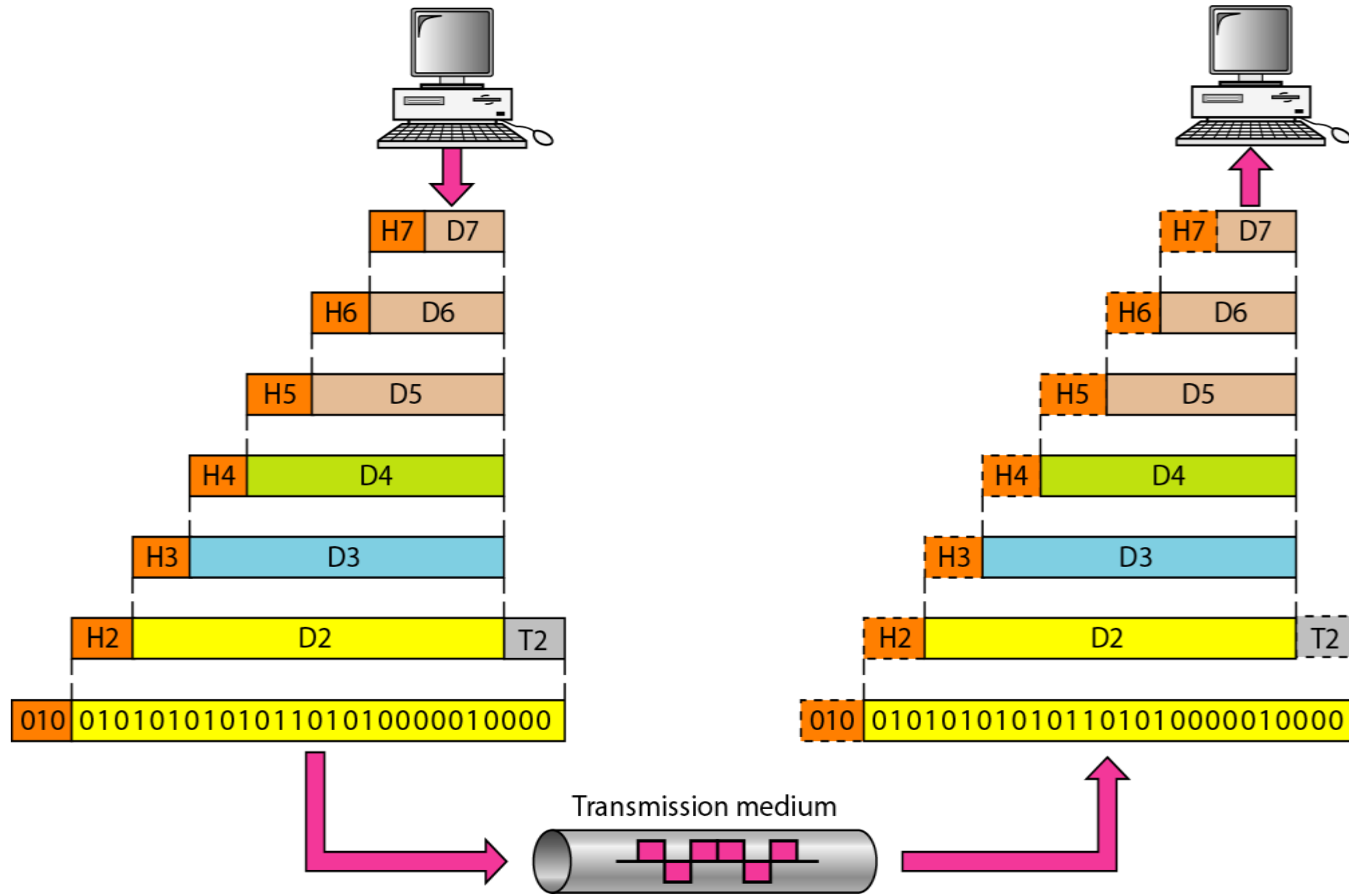
Note

ISO is the organization.
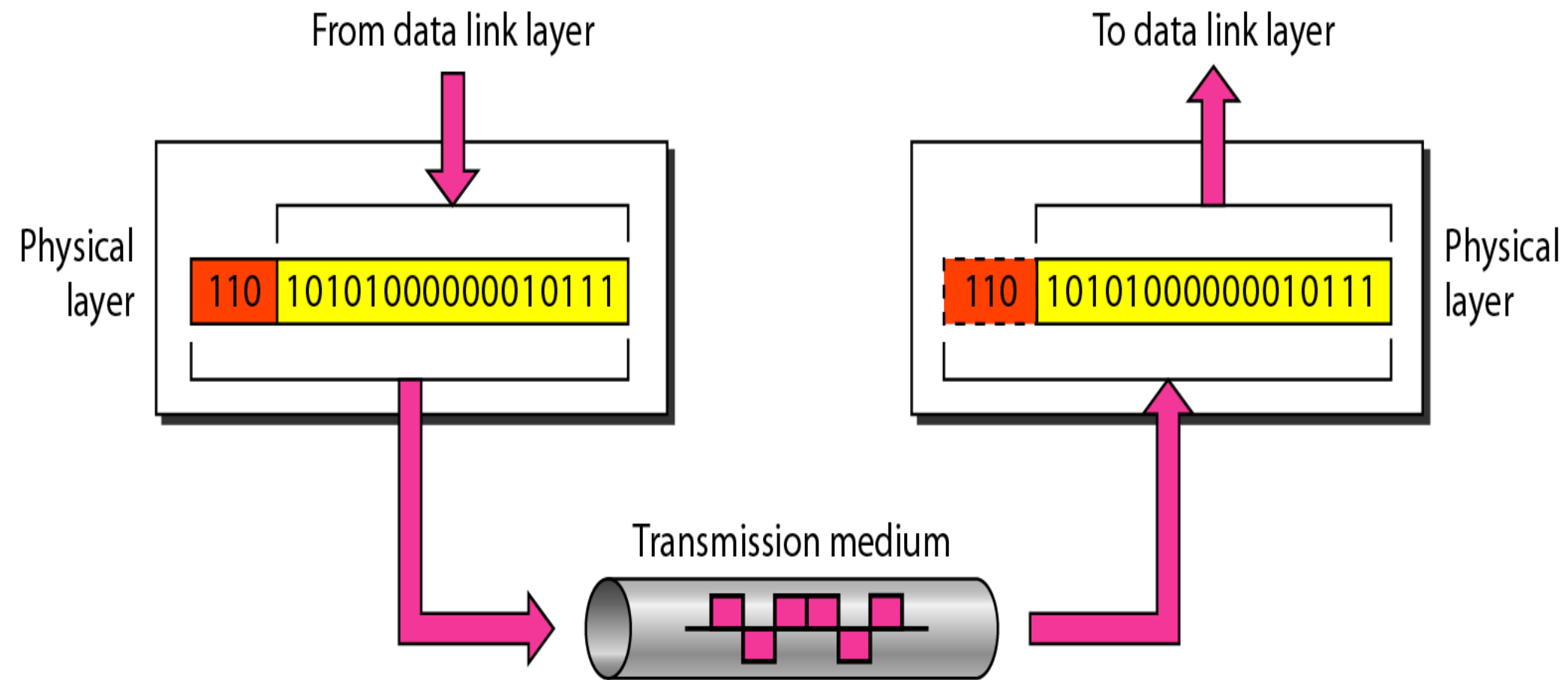OSI is the model.

Seven layers of the OSI model

7	Application
6	Presentation
5	Session
4	Transport
3	Network
2	Data link
1	Physical
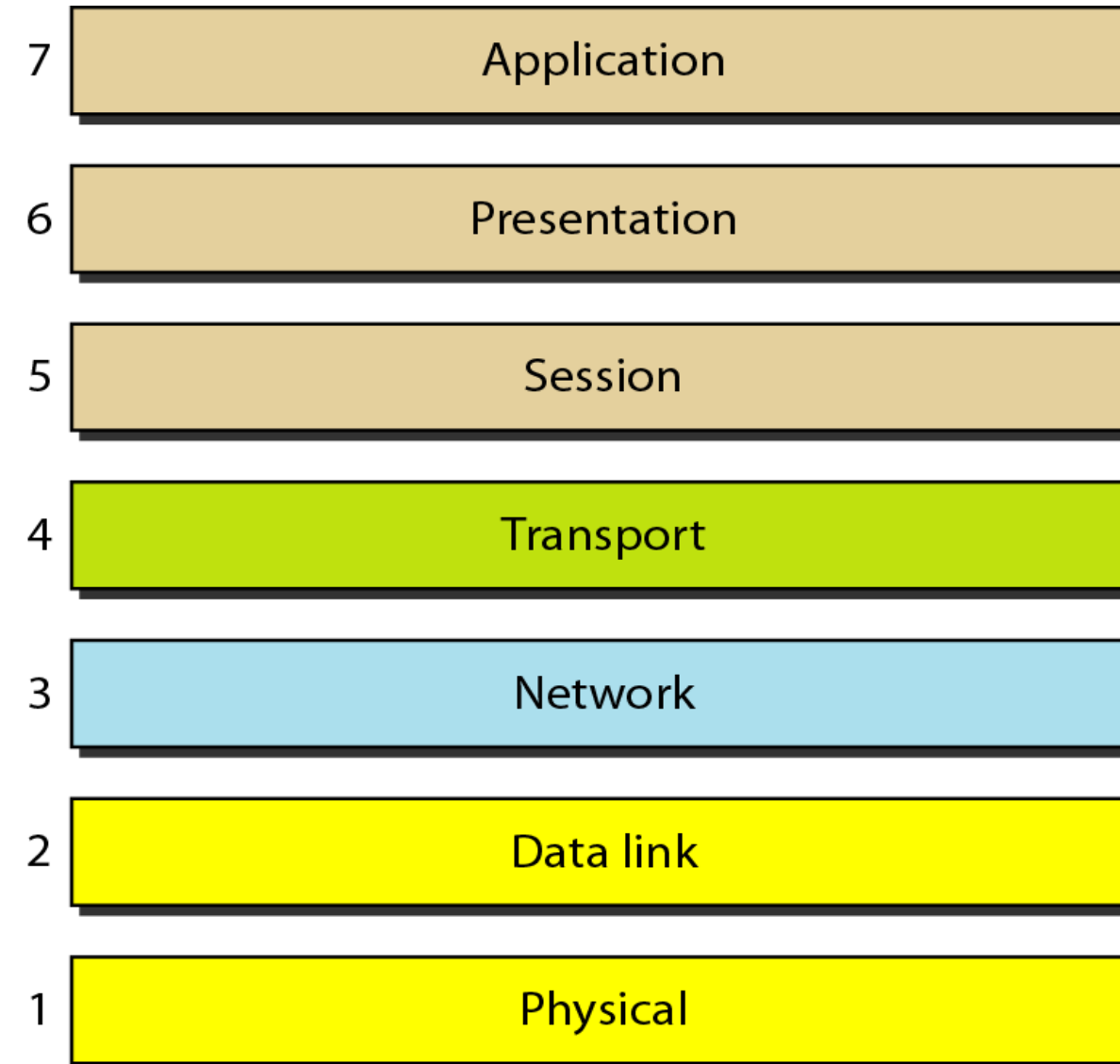
The interaction between layers

An exchange using the OSI model

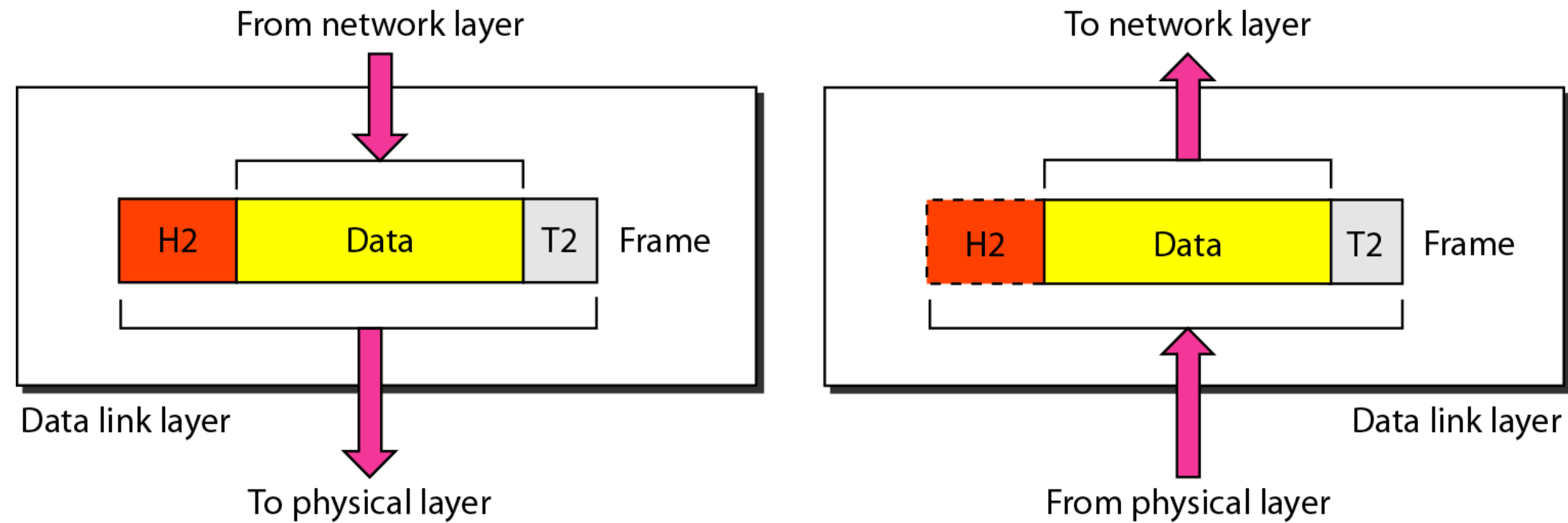Layering and Protocols /16IT301-Computer Networks/SANGEETHA.K/IT/SNSCT
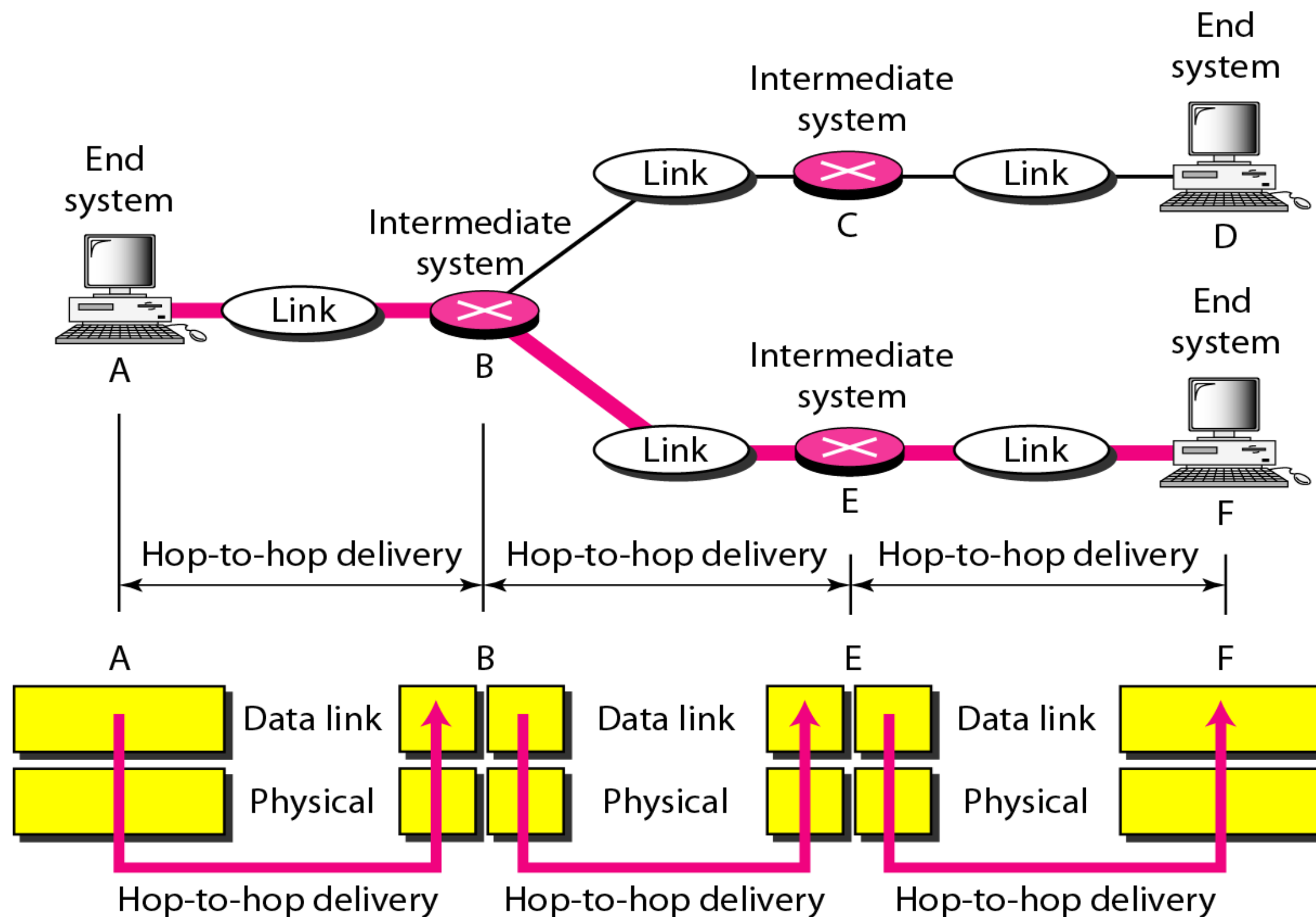
Physical layer

The physical layer is responsible for movements of individual bits from one hop (node) to the next.

Data link layer

. The data link layer is responsible for moving frames from one hop (node) to the next

Hop-to-hop delivery

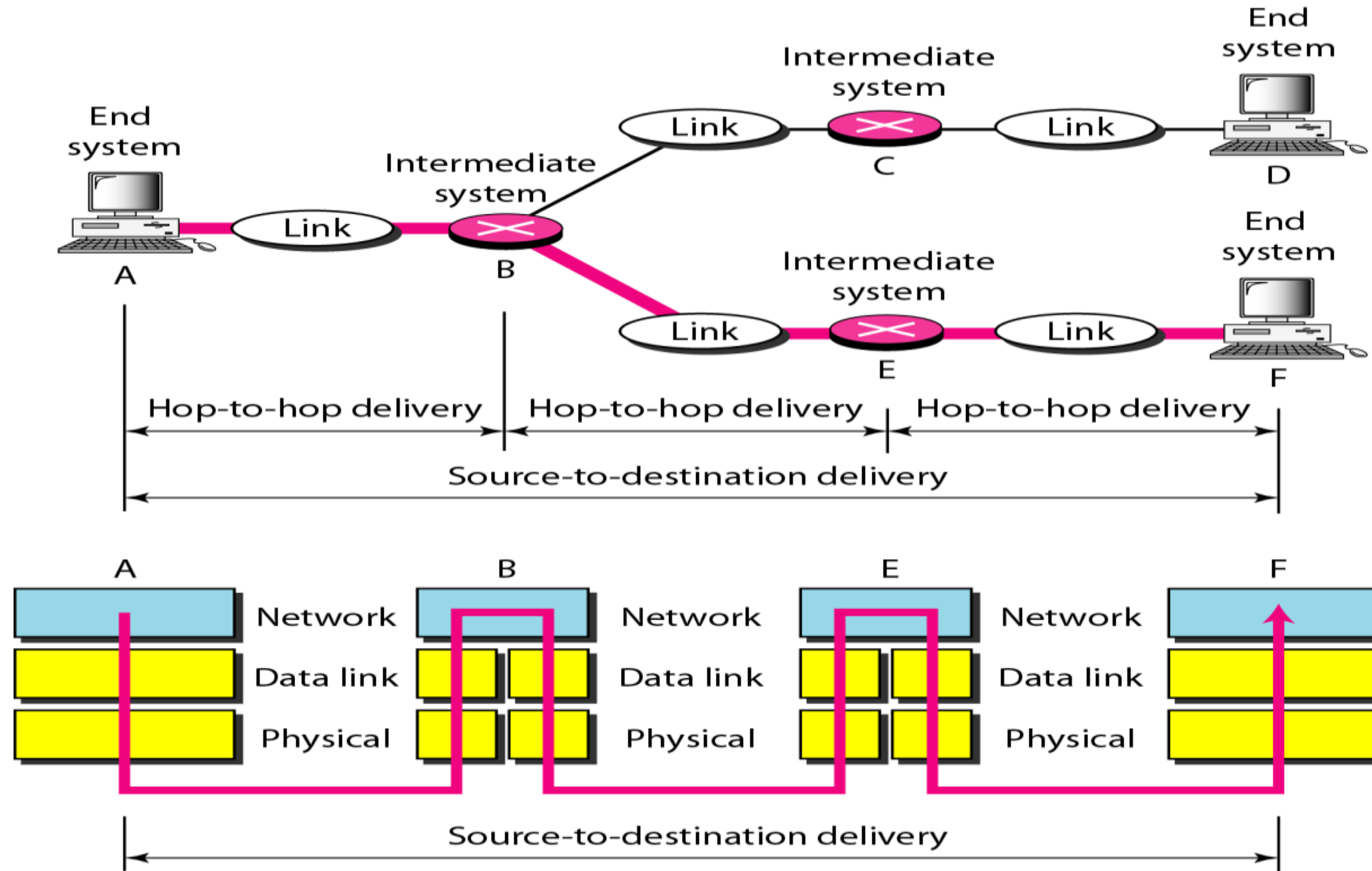Layering and Protocols /16IT301-Computer Networks /SANGEETHA.K/IT/SNSCT
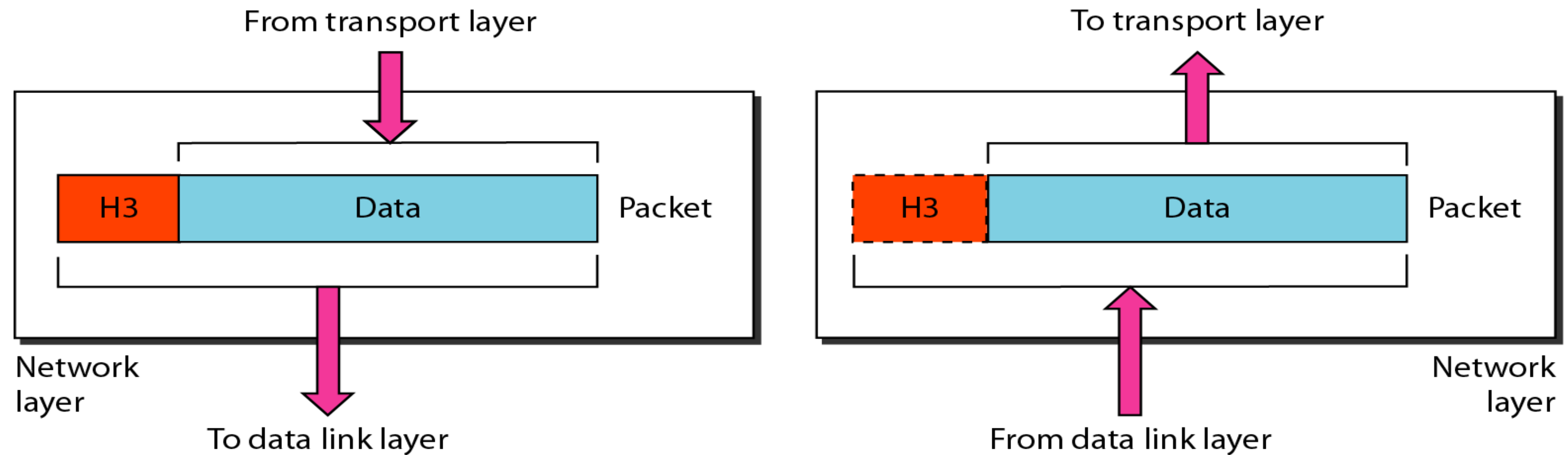
Network layer

The network layer is responsible for the
delivery of individual packets from
the source host to the destination host.

Source-to-destination delivery

Transport layer
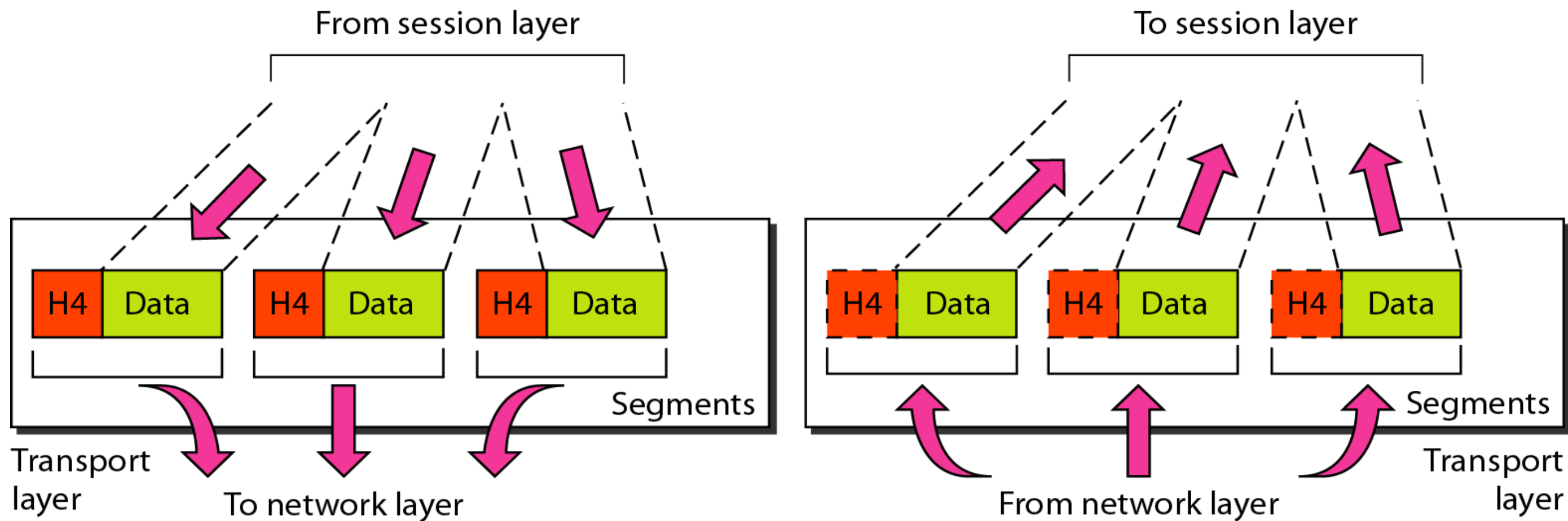
The transport layer is responsible for the delivery
of a message from one process to another.

Reliable process-to-process delivery of a message

Processes

Processes

An internet

Network layer
Host-to-host delivery

Transport layer
Process-to-process delivery

Session layer

From presentation layer

To presentation layer

H5 | syn | syn | syn

Session layer

To transport layer

H5 | syn | syn | syn

Session layer
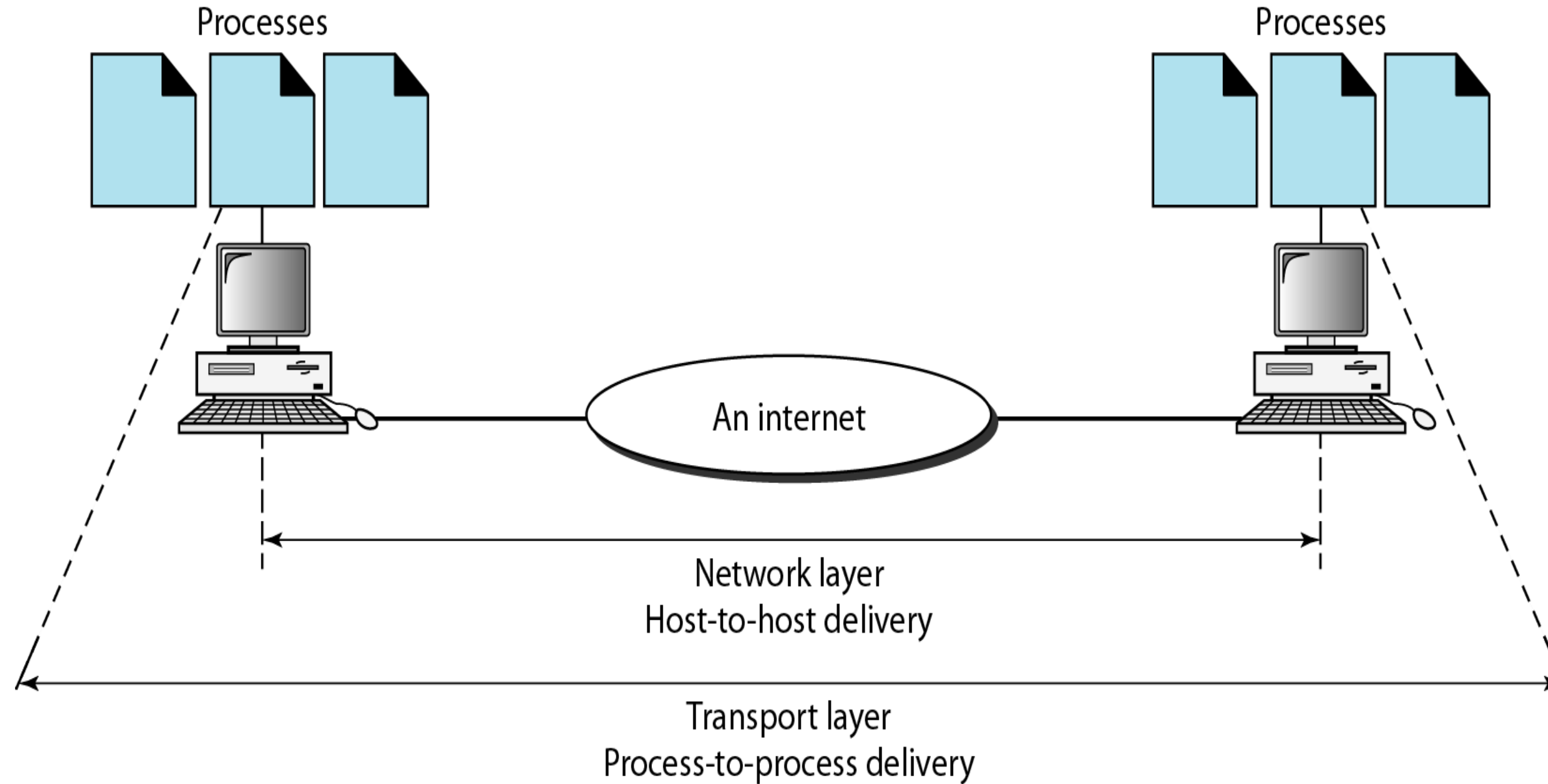
From transport layer
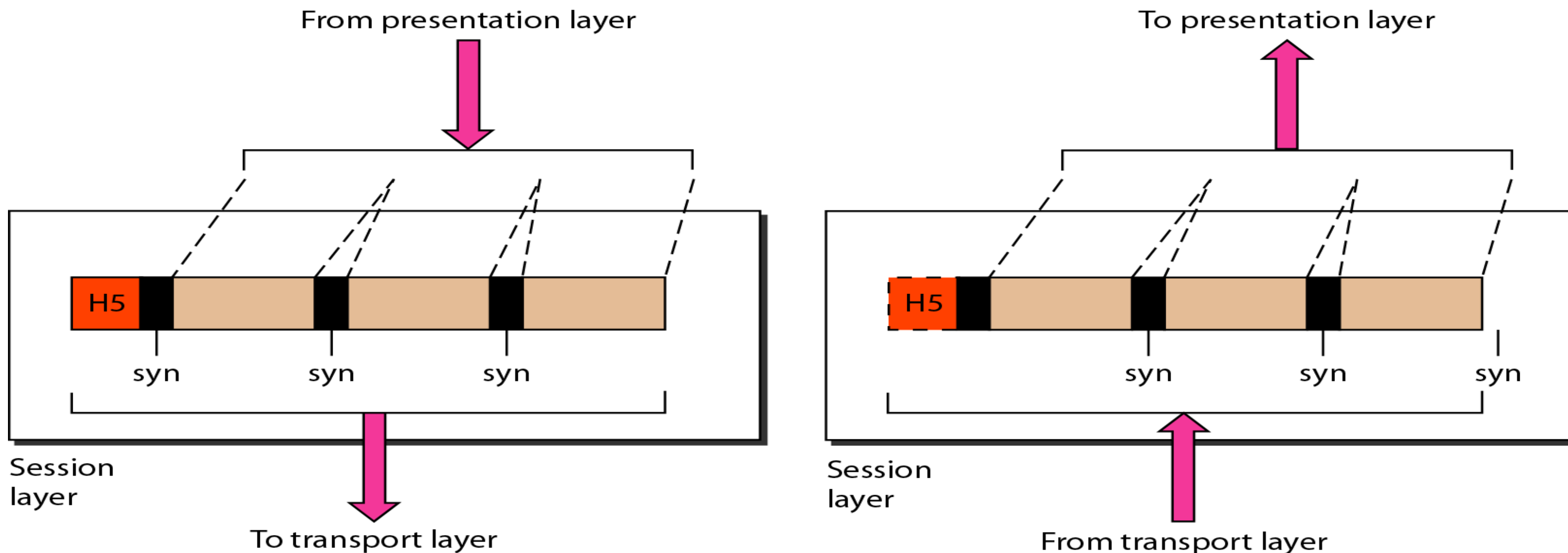
The session layer is responsible for dialog control and synchronization.

Presentation layer

The presentation layer is responsible for translation, compression, and encryption.

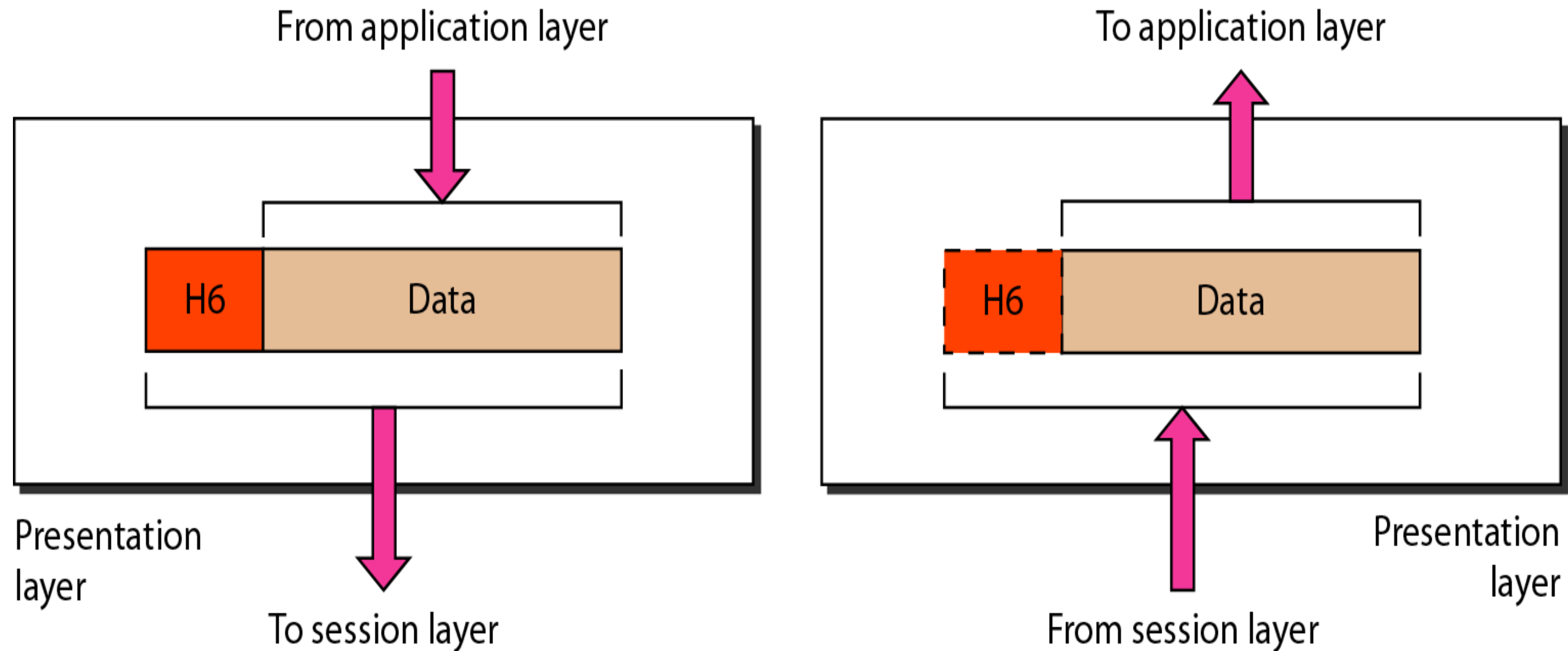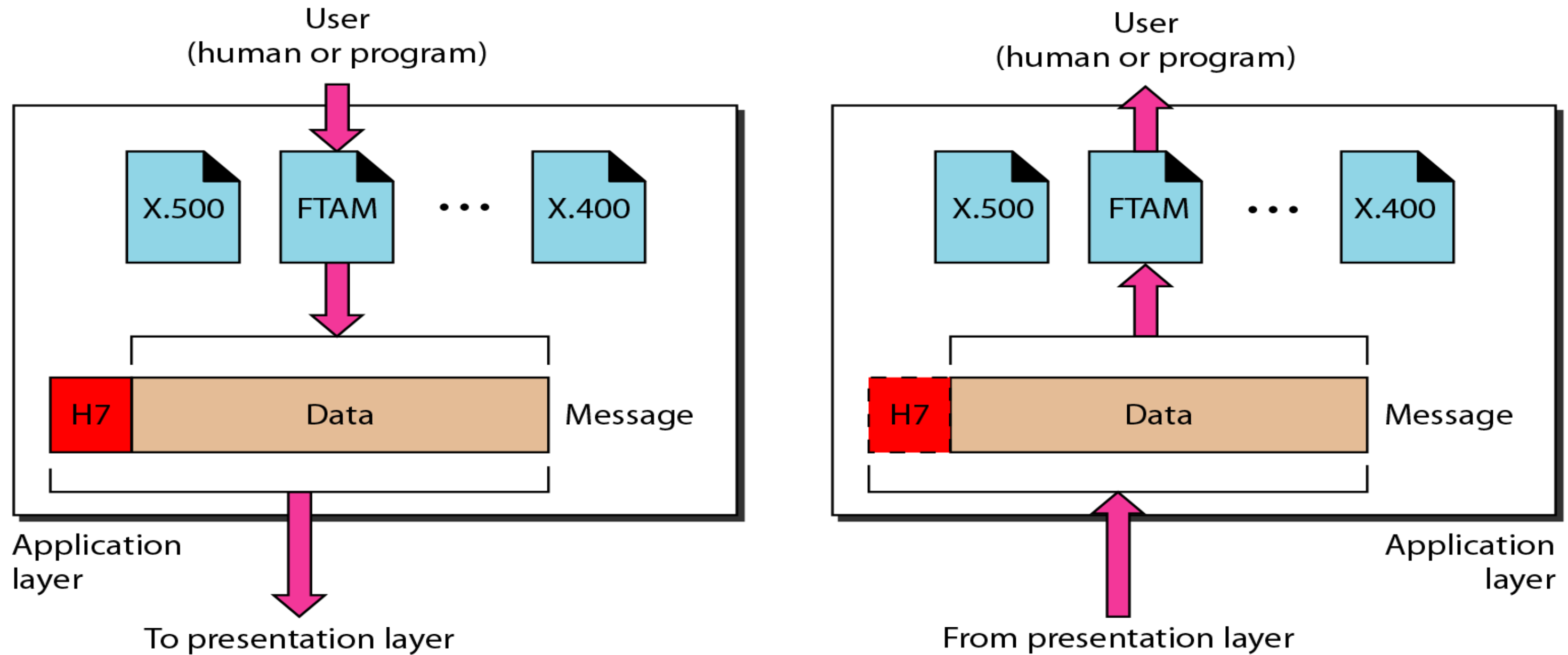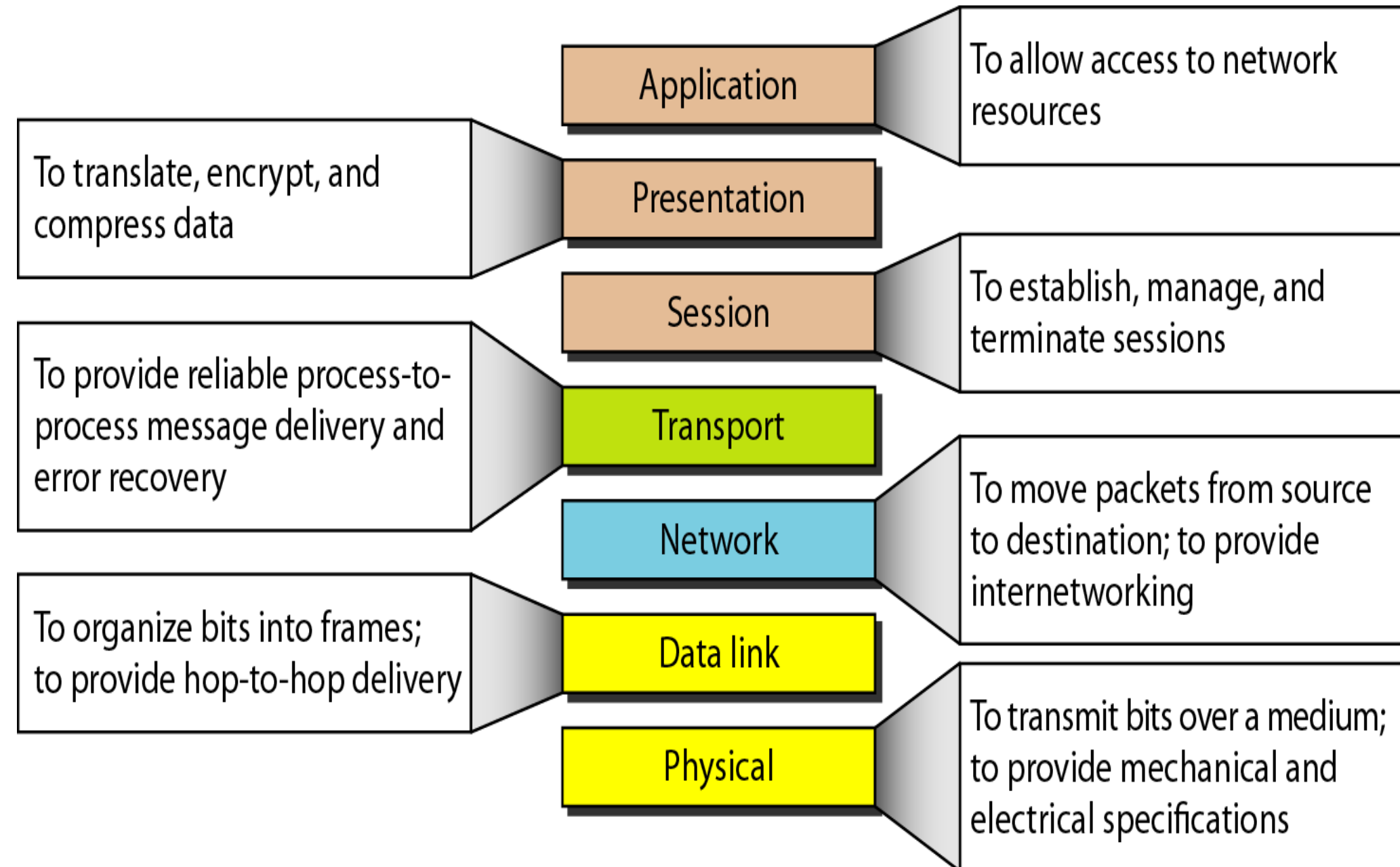Layering and Protocols /16IT301-Computer Networks /SANGEETHA.K/IT/SNSCT

Application layer

The application layer is responsible for providing services to the user.

Summary of layers

Layer	Function
Application	To allow access to network resources
Presentation	To translate, encrypt, and compress data
Session	To establish, manage, and terminate sessions
Transport	To provide reliable process-to-process message delivery and error recovery
Network	To move packets from source to destination; to provide internetworking
Data link	To organize bits into frames; to provide hop-to-hop delivery
Physical	To transmit bits over a medium; to provide mechanical and electrical specifications

1. The physical layer is concerned with _____.

2. The data link layer takes the packets from _____ and encapsulates them into frames for transmission.

3. Which of the following tasks is not done by data link layer?
a) framing
b) error control
c) flow control
d) channel coding

Thank You