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## 1. What is another name for the OSI data link layer?

- ☐ Layer 1
- ☐ Layer 2
- ☐ Layer 3
- ☐ Layer 6

## 2. The IEEE 802 LAN/MAN data link layer consists of which two sublayers? (Choose two.)

- ☐ Network Control Protocol
- ☒ Logical Link Control
- ☒ Media Access Control
- ☐ Link Control Protocol

## 3. What is the responsibility of the MAC sublayer?

- ☐ Adds Layer 3 addresses to the frame
- ☐ Communicates with the network layer (Layer 3)
- ☐ Provides the method to get the frame on and off the media
- ☐ Transmits the bits on the media

## 4. What Layer 2 function does a router perform? (Choose three.)

- ☒ Accepts a frame from a medium
- ☒ De-encapsulates the frame
- ☐ Refers to its Layer 3 routing table for a matching destination network

11 IPv4 Addressing

6 Data Link Layer

6.1.2 Sublayers

6.1.3 Providing Access to Media

6.1.4 Data Link Layer Standards

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☒ Re-encapsulates the packet into a new frame

5. The media access control method used depends on which two criteria?

- ☐ Layer 3 IP protocol
- ☒ Media sharing
- ☒ Topology
- ☐ Transport layer protocol
- ☐ Type of data

6. Which organization defines standards for the network access layer (i.e., the OSI physical and data link layers)?

- ☐ Cisco
- ☐ IANA
- ☐ IEEE
- ☐ IETF

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1. Which topology displays networking device layer IP addresses?

- ☐ aerial topology
- ☐ IP address topology
- ☐ logical topology
- ☐ physical topology

2. What kind of network would use point-to-point, hub and spoke, or mesh topologies?

- ☐ PAN
- ☐ LAN
- ☐ WLAN
- ☐ WAN

3. Which LAN topology is a hybrid topology?

- ☐ bus
- ☐ extended star
- ☐ ring
- ☐ star

4. Which duplex communication method is used in WLANs?

- ☐ full-duplex
- ☐ half-duplex
- ☐ simplex

6.4 Module Practice and Quiz ▼

7 Ethernet Switching ▼

6 Data Link Layer ▲

6.2 Topologies ▲

6.2.1 Physical and Logical Topologies

6.2.2 WAN Topologies

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6.2.7 Contention-Based Access -  
CSMA/CD6.2.8 Contention-Based Access -  
CSMA/CA6.2.9 Check Your Understanding -  
Topologies

6.3 Data Link Frame ▼

5. Which media access control method is used in legacy Ethernet LANs?

- ☐ carrier sense multiple access/collision annoyance
- ☐ carrier sense multiple access/collision avoidance
- ☐ carrier sense multiple access/collision destruction
- ☐ carrier sense multiple access/collision detection

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[Purpose of the Data Link Layer](#)

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## Communication

## 6.2.6 Access Control Methods

## Contention-Based Access

## 5 Number Systems ▾

## 6 Data Link Layer ▲

## 6.0 Introduction ▾

## 6.0.1 Why should I take this module?

## 6.0.2 What will I learn to do in this module?

## 6.1 Purpose of the Data Link Layer ▾

## 6.2 Topologies ▾

## 6.2.1 Physical and Logical Topologies

## 6.2.2 WAN Topologies

## 6.2.3 Point-to-Point WAN Topology

## 6.2.4 LAN Topologies

6.2.5 Half and Full Duplex  
Communication

1. What does the data link layer add to a Layer 3 packet to create a frame? (Choose two.)

- ☐ flags
- ☐ sequence number
- ☒ header
- ☒ trailer

2. What is the function of the last field in a data link layer frame?

- ☐ To determine whether the frame experienced transmission errors
- ☐ To identify special flow control services such as quality of service (QoS)
- ☐ To identify the beginning and end limits of the frame
- ☐ To identify the Layer 3 protocol in the data field

3. Which lists the Layer 2 and Layer 3 address fields in the correct order?

- ☐ destination NIC address, source NIC address, source IP address, destination IP address
- ☐ source NIC address, destination NIC address, source IP address, destination IP address
- ☐ destination NIC address, source NIC address, destination IP address, source IP address
- ☐ source NIC address, destination NIC address, destination IP address, source IP address

## Communication

6.2.6 Access Control Methods

## Contention Based Access

5 Number Systems ▾

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6.2.5 Half and Full Duplex  
Communication

4. Which of the following are data link layer protocols? (Choose three)

☒ 802.11☒ Ethernet☐ IP☒ PPP☐ UDP

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 6.2  
TopologiesModule Practice and Quiz 6.4 

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6	Network Security	▲
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12	IPv6 Addressing	▼
13	ICMP	▼
14	Transport Layer	▼

1. What identifier is used at the data link layer to uniquely identify an Ethernet device?
  - ☐ sequence number
  - ☐ IP address
  - ☐ TCP port number
  - ☐ UDP port number
  - ☐ MAC address
2. What attribute of a NIC would place it at the data link layer of the OSI model?
  - ☐ RJ-45 port
  - ☐ MAC address
  - ☐ IP address
  - ☐ attached Ethernet cable
  - ☐ TCP/IP protocol stack
3. Which two engineering organizations define open standards and protocols that apply to the data link layer? (Choose two.)
  - ☒ Institute of Electrical and Electronics Engineers (IEEE)
  - ☒ International Telecommunication Union (ITU)
  - ☐ Internet Society (ISOC)
  - ☐ Internet Assigned Numbers Authority (IANA)
  - ☐ Electronic Industries Alliance (EIA)
4. What is true concerning physical and logical topologies?
  - ☐ Logical topologies refer to how a network transfers data between devices.
  - ☐ The logical topology is always the same as the physical topology.
  - ☐ Physical topologies display the IP addressing scheme of each network.
  - ☐ Physical topologies are concerned with how a network transfers frames.

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5. What method is used to manage contention-based access on a wireless network?

- ☐ priority ordering
- ☐ token passing
- ☐ CSMA/CA
- ☐ CSMA/CD

6. A technician has been asked to develop a physical topology for a network that provides a high level of redundancy. Which physical topology requires that every node is attached to every other node on the network?

- ☐ hierarchical
- ☐ bus
- ☐ ring
- ☐ star
- ☐ mesh

7. Which statement describes the half-duplex mode of data transmission?

- ☐ Data that is transmitted over the network flows in one direction to many different destinations simultaneously.
- ☐ Data that is transmitted over the network flows in one direction at a time.
- ☐ Data that is transmitted over the network can only flow in one direction.
- ☐ Data that is transmitted over the network flows in both directions at the same time.

8. Which is a function of the Logical Link Control (LLC) sublayer?

- ☐ to define the media access processes that are performed by the hardware
- ☐ to provide data link layer addressing
- ☐ to accept segments and package them into data units that are called packets



15	Application Layer	▼
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☐ to identify which network layer protocol is being used

9. Which data link layer media access control method does Ethernet use with legacy Ethernet hubs?

- ☐ determinism
- ☐ CSMA/CD
- ☐ turn taking
- ☐ token passing

10. What are the two sublayers of the OSI model data link layer? (Choose two.)

- ☐ physical
- ☒ MAC
- ☐ transport
- ☐ network access
- ☒ LLC
- ☐ internet

11. Which layer of the OSI model is responsible for specifying the encapsulation method used for specific types of media?

- ☐ application
- ☐ physical
- ☐ transport
- ☐ data link

12. What type of physical topology can be created by connecting all Ethernet cables to a central device?

- ☐ bus
- ☐ ring
- ☐ star

15	Application Layer	▼
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13	ICMP	▼
14	Transport Layer	▼

☐ mesh

13. What are two services performed by the data link layer of the OSI model?  
(Choose two.)

- ☒ It provides media access control and performs error detection.
- ☒ It accepts Layer 3 packets and encapsulates them into frames.
- ☐ It determines the path to forward packets.
- ☐ It fragments data packets into the MTU size.
- ☐ It monitors the Layer 2 communication by building a MAC address table.

14. Although CSMA/CD is still a feature of Ethernet, why is it no longer necessary?

- ☐ the virtually unlimited availability of IPv6 addresses
- ☐ the development of half-duplex switch operation
- ☐ the use of Gigabit Ethernet speeds
- ☐ the use of CSMA/CA
- ☐ the use of full-duplex capable Layer 2 switches

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