

70-741

Number: 70-741
Passing Score: 750
Time Limit: 120 min
File Version: 1.0



Microsoft 70-741

Exam Name: Networking with Windows Server 2016 (beta)

Sections

1. Understanding Local Area Networks
2. Defining Networks with the OSI Model
3. Understanding Wired and Wireless Networks
4. Understanding Internet Protocol
5. Implementing TCP/IP in the Command Line
6. Working with Network Services
7. Understanding Wide Area Networks
8. Defining Network Infrastructures and Network Security



Exam A**QUESTION 1**

What is the most common central device used today to connect computers to a network?

- A. hub
- B. switch
- C. SOHO router
- D. VPN router

Correct Answer: B

Section: Understanding Local Area Networks

Explanation

Explanation/Reference:

Section Reference: Defining a LAN

Explanation: Hubs are considered legacy devices and have been replaced by switches. Switches allow multiple computers to connect together. The advantage of a switch over a hub is that it can handle several conversations at the same time.

QUESTION 2

What is the most common adapter or connector used to connect a computer to a wired network?

- A. RG6
- B. RG58
- C. RJ45
- D. RJ8

Correct Answer: C

Section: Understanding Local Area Networks

Explanation

Explanation/Reference:

Section Reference: Defining a LAN

Explanation: RJ-45, which is associated with Ethernet networks, is the most common wired adapter by default and is found on virtually every computer these days.

QUESTION 3

What do you use to create VLANs

- A. router
- B. switch
- C. firewall
- D. proxy server

Correct Answer: B

Section: Understanding Local Area Networks

Explanation

Explanation/Reference:

Section Reference: Identifying Types of LANs

Explanation: Switches usually control the VLAN. Like subnetting, a VLAN compartmentalizes a network and can isolate traffic.

QUESTION 4

What zone is used to publish external websites for an organization?

- A. intranet
- B. exanet
- C. internetwork
- D. DMZ



Correct Answer: D

Section: Understanding Local Area Networks

Explanation

Explanation/Reference:

Section Reference: Getting to Know Perimeter Networks

Explanation: A perimeter network (also known as a demilitarized zone or DMZ) is a small network that is set up separately from a company's private LAN and the Internet. It is called a perimeter network because it is usually on the edge of the LAN,

QUESTION 5

What standard describes CSMA/CD?

- A. 801.2
- B. 802.3
- C. 802.5
- D. 802.11

Correct Answer: B

Section: Understanding Local Area Networks

Explanation

Explanation/Reference:

Section Reference: Defining Ethernet Standards

Explanation: IEEE 802.3 defines carrier sense multiple access with collision detection (CSMA/CD). Because computers on a default Ethernet LAN all share the same channel, CSMA/CD governs the way computers coexist with limited collisions.

QUESTION 6

Which model uses a central database for authentication?

- A. peer-to-peer
- B. workgroup
- C. client/server
- D. distributive

Correct Answer: C

Section: Understanding Local Area Networks

Explanation

Explanation/Reference:

Section Reference: Defining the Client/Server Model

Explanation: The client/server model is an architecture that distributes applications between servers such as Windows Server 2008 and client computers such as Windows 7 or Windows Vista machines. It also distributes the necessary processing power. This is extremely common in today's LANs and with most applications an average user would utilize when connecting to the Internet.

QUESTION 7

What type of server does Active Director run on?

- A. file server
- B. print server
- C. database server
- D. network controller

Correct Answer: D

Section: Understanding Local Area Networks

Explanation

Explanation/Reference:

Section Reference: Defining the Client/Server Model

Explanation: A controlling server, such as a Microsoft domain controller, is in charge of user accounts, computer accounts, network time, and the general well-being of an entire domain of computers and users.

QUESTION 8

What is used to uniquely identify a host on a TCP/IP network?

- A. IP address
- B. MAC address
- C. bit pattern
- D. router name

Correct Answer: A

Section: Understanding Local Area Networks

Explanation

Explanation/Reference:

Section Reference: Configuring Internet Protocol

Explanation: An IP address is the cornerstone of networking because it defines the computer or host you are working on. Today, every computer and many other devices have such an address. An IP address allows each computer to send and receive information in an orderly and efficient manner.

QUESTION 9

A _____ is a single computer or device that connects to a TCP/IP network.

- A. Host
- B. Node
- C. Access Point
- D. Laptop

Correct Answer: AB

Section: Understanding Local Area Networks

Explanation

Explanation/Reference:

Section Reference: Configuring Internet Protocol

Explanation: IP addresses are usually applied to your network adapter, but they can also be applied to other devices like switches, routers, and so on. A device or computer that has an IP address is a host.

QUESTION 10

What command do you use to test the TCP/IP stack on a computer?

- A. Ping localhost
- B. Ping 127.0.0.1
- C. Ping loopback
- D. ipconfig /renew

Correct Answer: ABC

Section: Understanding Local Area Networks

Explanation

Explanation/Reference:

Section Reference: Defining a LAN

Explanation: You can ping your own computer using the loopback address, also known as the local loopback. When pinging this address, no network traffic is incurred; because the network adapter is really just looping the ping back to the OS, it never places any packets on to the network. Therefore, this is a solid way to test whether TCP/IP is installed correctly to a network adapter, even if you aren't physically connected to a network.

QUESTION 11

What do you use to isolate a group of computers within your organization?

- A. WLAN
- B. WAN
- C. VLAN
- D. Internet

Correct Answer: C

Section: Understanding Local Area Networks

Explanation

Explanation/Reference:

Section Reference: Identifying Types of LANs

Explanation: A virtual LAN (VLAN) is a group of hosts with a common set of requirements that communicate as though they were connected together as normal on one switch, regardless of their physical location. A VLAN is implemented to segment a network, reduce collisions, organize the network, boost performance, and increase security.

QUESTION 12

What do you use to create VLANs

- A. router
- B. switch
- C. firewall
- D. proxy server

Correct Answer: B

Section: Understanding Local Area Networks

Explanation

Explanation/Reference:

Section Reference: Identifying Types of LANs

Explanation: Switches usually control the VLAN. Like subnetting, a VLAN compartmentalizes a network and can isolate traffic.

QUESTION 13

What command displays the IP address, subnet mask, and default gateway of the system you are currently on?

- A. `ipconfig`
- B. `ping`
- C. `tracert`
- D. `nslookup`



Correct Answer: A

Section: Implementing TCP/IP in the Command Line

Explanation

Explanation/Reference:

Section Reference: Working with Ipconfig and Ping

Explanation: The `ipconfig` and `ping` commands are probably the two most commonly used commands when analyzing and troubleshooting networking issues. Although `ipconfig` displays information, it can also be used to make basic configuration changes and reset certain facets of DHCP and DNS.

QUESTION 14

What protocol does the `ping` command use to test network connectivity?

- A. TCP
- B. UDP

- C. ICMP
- D. FTP

Correct Answer: C

Section: Implementing TCP/IP in the Command Line

Explanation

Explanation/Reference:

Section Reference: Working with Ipconfig and Ping

Explanation: ICMP is used to send error messages to relay query messages. It is also used with the `ping`, `tracert`, and `pathping` commands

QUESTION 15

What command do you use to test a system's IPv4 protocol stack?

- A. `ping 127.0.0.1`
- B. `ping self`
- C. `ping 255.255.255.255`
- D. `ping defaultgateway`

Correct Answer: A

Section: Implementing TCP/IP in the Command Line

Explanation

Explanation/Reference:

Section Reference: Working with Ipconfig and Ping

Explanation: When you ping 127.0.0.1, the results do not include any hostname resolution information. This is the best way to ping the local host when testing IPv4. When pinging 127.0.0.1, no traffic is placed on the network segment; instead, all traffic is kept inside the computer or local loopback.

QUESTION 16

What command do you use to display active TCP or UDP connections?

- A. `nbtstat`
- B. `netstat`
- C. `ipconfig`
- D. `nslookup`

Correct Answer: B

Section: Implementing TCP/IP in the Command Line

Explanation

Explanation/Reference:

Section Reference: Working with Advanced TCP/IP Commands

Explanation: Use the `netstat` command to display active TCP (or UDP) connections, as well as a host of other statistics. Of the four columns displayed, we are concerned here with just the Proto and Local Address columns. The Proto column shows the Transport layer protocol being used for the connection; `netstat`, by itself, shows only TCP connections in this column. The Local Address column displays the local computer by name (server2003), followed by the outbound port number.

QUESTION 17

What command clears the NetBIOS name cache table?

- A. `nbtstat -r`
- B. `nbtstat -R`
- C. `nbtstat -RR`
- D. `nbtstat -s`

Correct Answer: B

Section: Implementing TCP/IP in the Command Line

Explanation



Explanation/Reference:

Section Reference: Working with Advanced TCP/IP Commands

Explanation: The `nbtstat -R` command purges the contents of the NetBIOS name cache table.

QUESTION 18

What command tests network connectivity while showing you each hop along the way?

- A. `ping`
- B. `nslookup`
- C. `nbtstat`
- D. `tracert`

Correct Answer: D

Section: Implementing TCP/IP in the Command Line

Explanation

Explanation/Reference:

Section Reference: Working with Advanced TCP/IP Commands

Explanation: The `tracert` command shows paths to a destination on another network. It does this by pinging each step along the way three times. The time to live (TTL) for the pings increases with each “hop” to another network.

QUESTION 19

What is the default subnet mask for a Class B network?

- A. 255.0.0.0
- B. 255.255.0.0
- C. 255.255.255.0
- D. 255.255.255.255

Correct Answer: B

Section: Understanding Internet Protocol

Explanation

Explanation/Reference:

Section Reference: Categorizing IPv4 Addresses

Explanation: The IPv4 classification system is known as the classful network architecture and is broken down into five sections. Class B has a default subnet mask of 255.255.0.0.

QUESTION 20

You have a host with the address of 180.24.45.120. To what class would this be address be assigned?

- A. Class A
- B. Class B
- C. Class C
- D. Class D

Correct Answer: B

Section: Understanding Internet Protocol

Explanation

Explanation/Reference:

Section Reference: Categorizing IPv4 Addresses

Explanation: Class B begins with 128–191.

QUESTION 21

For IPv4, what class is used for multicasting?

- A. Class A
- B. Class B
- C. Class C
- D. Class D

Correct Answer: D

Section: Understanding Internet Protocol

Explanation

Explanation/Reference:

Section Reference: Categorizing IPv4 Addresses

Explanation: Class D is used for what is known as multicasting—transmitting data to multiple computers (or routers).

QUESTION 22

What is the maximum number of hosts you can use for each subnet that belongs to a class C address?

- A. 128
- B. 254
- C. 256
- D. 65,534



Correct Answer: B

Section: Understanding Internet Protocol

Explanation

Explanation/Reference:

Section Reference: Categorizing IPv4 Addresses

Explanation: A class C has 8 bits left for hosts. Therefore, 2^8 is equal to 256. But since you cannot use all 0s (network address) and all 1s (broadcast address), a class C will only support up to 254 hosts.

QUESTION 23

What type of address is used to send a single set of packets to multiple hosts?

- A. multicast address
- B. broadcast address
- C. unicast address
- D. anycast address

Correct Answer: A

Section: Understanding Internet Protocol

Explanation

Explanation/Reference:

Section Reference: Categorizing IPv4 Addresses

Explanation: Multicasting addresses are used to transmit data to multiple computers (or routers).

QUESTION 24

What type of address is 169.254.32.23?

- A. APIPA
- B. multicast address
- C. anycast address
- D. broadcast address

Correct Answer: A

Section: Understanding Internet Protocol

Explanation

Explanation/Reference:

Section Reference: Categorizing IPv4 Addresses

Explanation: Microsoft developed one type of private range for use on small peer-to-peer Windows networks. This private range, called Automatic Private IP Addressing (APIPA), uses a single Class B network number: 169.254.0.0.

QUESTION 25

You have a computer that cannot connect to a server. When you look at the IP configuration, the host has an address of 169.32.54.2. What is the problem?

- A. The host cannot find a DHCP server.
- B. The host is set to multicast.
- C. The host is currently broadcasting.
- D. The host cannot find a domain controller.

Correct Answer: A

Section: Understanding Internet Protocol

Explanation

Explanation/Reference:

Section Reference:

Explanation: If a Windows client cannot get an IP address from a DHCP server and has not been configured statically, it auto-assigns an APIPA number on the network.

QUESTION 26

What defines the nearest router for a host?

- A. subnet mask
- B. default gateway
- C. DNS server
- D. WINS server

Correct Answer: B

Section: Understanding Internet Protocol

Explanation

Explanation/Reference:

Section Reference: Default Gateways and DNS Servers

Explanation: The default gateway is the first IP address of the device that a client computer will look for when attempting to gain access outside the local network. This device could be a router, server, or other similar device; it is the device that grants access to the Internet or other networks.

QUESTION 27

What is used to remap private addresses to public addresses and back?

- A. DNS
- B. DHCP
- C. WINS
- D. NAT

Correct Answer: D

Section: Understanding Internet Protocol

Explanation

Explanation/Reference:

Section Reference: Network Address Translation

Explanation: Network address translation (NAT) is the process of modifying an IP address while it is in transit across a router, computer, or similar device. This is usually so one larger address space (private) can be remapped to another address space, or perhaps remapped to a single public IP

address.

QUESTION 28

You have a subnet mask of 255.255.240.0. What would the CIDR notation be?

- A. /16
- B. /20
- C. /24
- D. /28

Correct Answer: B

Section: Understanding Internet Protocol

Explanation

Explanation/Reference:

Section Reference: Defining Classless Inter-Domain Routing (CIDR)

Explanation: One example of CIDR would be the IP network number 192.168.0.0/16. The /16 means that the subnet mask has 16 masked bits (or 1s), making 255.255.0.0. Usually, that would be a default Class B subnet mask, but because we are using it with what used to be a Class C network number, the whole address becomes classless.

QUESTION 29

How many bits is an IPv6 address?

- A. 32
- B. 48
- C. 64
- D. 128

Correct Answer: D

Section: Understanding Internet Protocol

Explanation

Explanation/Reference:

Section Reference: Understanding IPv6

Explanation: The top reason to use IPv6 is address space. IPv6 is a 128-bit system, whereas its still-dominant predecessor IPv4 is only a 32-bit system. While IPv4 can have approximately 4 billion IP addresses in the whole system, IPv6 can have 340 undecillion addresses.

QUESTION 30

A _____ address is assigned by a DHCP server.

- A. Static
- B. Dynamic
- C. Private Only
- D. Public Only

Correct Answer: B

Section: Understanding Internet Protocol

Explanation

Explanation/Reference:

Section Reference: Categorizing IPv4 Addresses

Explanation: Most commonly, computers are set up to obtain an IP address (and other IP information) automatically. In this example of a dynamic IP address, the computer broadcasts out to the network in an attempt to find a DHCP server, whether it's a four-port SOHO router, DHCP server, or other appliance. The server then replies with the required information.

QUESTION 31

What is the loopback IP address?

- A. 127.0.0.1
- B. loopback
- C. 255.255.255.1
- D. 0.0.0.0



Correct Answer: AB

Section: Understanding Internet Protocol

Explanation

Explanation/Reference:

Difficulty: Easy

Section Reference: Categorizing IPv4 Addresses

Explanation: The range for Class A is 0–127. However, the 127 network number isn't used by hosts as a logical IP address. Instead, this network is used for loopback IP addresses, which allow for testing.

QUESTION 32

What IPv6 address incorporates IPv4?

- A. Starting ::ffff:
- B. Starting 0:0::ffff:

- C. Ending ::ffff
- D. Ending 0:0::ffff

Correct Answer: A

Section: Understanding Internet Protocol
Explanation

Explanation/Reference:

Section Reference: Defining the Dual IP Stack

Explanation: IPv4-mapped addresses have the first 80 bits set to 0 (note the double colon), the next 16 set to 1 (shown as ffff), and the last 32 bits populated by the IPv4 address. These addresses look like IPv6 addresses, other than the last 32 bits, which are written in the customary dot-decimal notation. For example, ::ffff:192.0.2.128 represents the IPv4 address 192.0.2.128.

QUESTION 33

What defines the nearest router for a host?

- A. subnet mask
- B. default gateway
- C. DNS server
- D. WINS server

Correct Answer: B

Section: Understanding Internet Protocol
Explanation

Explanation/Reference:

Section Reference: Default Gateways and DNS Servers

Explanation: The default gateway is the first IP address of the device that a client computer will look for when attempting to gain access outside the local network. This device could be a router, server, or other similar device; it is the device that grants access to the Internet or other networks.

QUESTION 34

What layer in the OSI model is responsible for logging on and off?

- A. Physical
- B. Session
- C. Application
- D. Presentation

Correct Answer: B

Section: Defining Networks with the OSI Model**Explanation****Explanation/Reference:**

Section Reference: Defining the Layers in the OSI Model

Explanation: The Session layer governs the establishment, termination, and synchronization of sessions within the OS over the network and between hosts. When you log on, you are creating a session while on the network.

QUESTION 35

What is the most common cable used today?

- A. UTP
- B. STP
- C. Coaxial
- D. Fiber

Correct Answer: A

Section: Understanding Wired and Wireless Networks**Explanation****Explanation/Reference:**

Section Reference: Identifying and Working with Twisted-Pair Cable

Explanation: Unshielded twisted-pair (UTP) is the cable most commonly used in local area networks. It's relatively easy to work with, flexible, efficient, and fast.

QUESTION 36

If you are making a crossover cable and one end is 568A, what should the other end be?

- A. 568A
- B. 568B
- C. 568C
- D. BOGB

Correct Answer: B

Section: Understanding Wired and Wireless Networks**Explanation****Explanation/Reference:**

Section Reference: Identifying and Working with Twisted-Pair Cable

Explanation: Crossover cable is used to connect like devices to each other—for example, a computer to another computer, or a switch to another switch. With the crossover cable, the patch cable is wired with the 568B standard on one side and the 568A standard on the other.

QUESTION 37

You need to connect a twisted-pair cable to the back of a patch panel. What tool should you use?

- A. punch-down tool
- B. zip tool
- C. wire wedge
- D. soldering iron

Correct Answer: A

Section: Understanding Wired and Wireless Networks

Explanation

Explanation/Reference:

Section Reference: Identifying and Working with Twisted-Pair Cable

Explanation: The tools necessary to make the connections between patch panels and RJ45 jacks include a cutting tool, a wire stripper, a punch-down tool, and a continuity tester.

QUESTION 38

What is the minimum category of twisted-pair cable you need to support 100 Mbps?

- A. Category 3
- B. Category 5
- C. Category 5e
- D. Category 6

Correct Answer: B

Section: Understanding Wired and Wireless Networks

Explanation

Explanation/Reference:

Section Reference: Identifying and Working with Twisted-Pair Cable

Explanation: Twisted-pair cables are categorized according to the frequency at which they transmit signals and their data transfer rate or speed. To support 100 Mbps, you need to use a minimum of category 5. The maximum length is 100 m.

QUESTION 39

When you pick up your wireless phone, your computer drops network connectivity. What could be the cause of the problem?

- A. EMI
- B. RFI
- C. network adapter failure
- D. cable failure

Correct Answer: B

Section: Understanding Wired and Wireless Networks

Explanation

Explanation/Reference:

Section Reference: Identifying and Working with Twisted-Pair Cable

Explanation: Wireless adapters/networks use 2.4 or 5.0 GHz, which is the same frequency that wireless phones use. Therefore, if both operate at the same time, you have radio frequency interference (RFI).

QUESTION 40

You are setting up a network within a warehouse using Category 6 UTP. However, parts of the network are down because of the heavy machinery used. What cable type should you use?

- A. STP
- B. coaxial
- C. fiber
- D. plenum-rated



Correct Answer: C

Section: Understanding Wired and Wireless Networks

Explanation

Explanation/Reference:

Section Reference: Identifying and Working with Twisted-Pair Cable

Explanation: Electromagnetic interference (EMI) is a disturbance that can affect electrical circuits, devices, and cables due to electromagnetic conduction and possibly radiation. To overcome this, you should use fiber cabling, which uses light instead of electrical signals.

QUESTION 41

What do you call it when electrical signals jump to another set of wires?

- A. EMI
- B. RFI

- C. crosstalk
- D. jumpitis

Correct Answer: C

Section: Understanding Wired and Wireless Networks

Explanation

Explanation/Reference:

Section Reference: Identifying and Working with Twisted-Pair Cable

Explanation: A common type of interference is crosstalk, in which the signal that is transmitted on one copper wire or pair of wires creates an undesired effect on another wire or pair of wires.

QUESTION 42

Which of the following is not a fiber connector?

- A. FC
- B. LC
- C. RJ-45
- D. MT-RJ

Correct Answer: C

Section: Understanding Wired and Wireless Networks

Explanation

Explanation/Reference:

Section Reference: Identifying and Working with Twisted-Pair Cable

Explanation: Fiber connectors include FC, LC, MT-RJ, SC, and ST. RJ-45 is used for UTP cables.

QUESTION 43

Which of the following is a characteristic of single-mode fiber?

- A. Single-mode fiber supports longer distances than multimode fiber.
- B. Single-mode fiber has increased bandwidth than multimode fiber.
- C. Single-mode supports only a ring topology.
- D. Single mode allows multiplexing of electrical and light signals.

Correct Answer: A

Section: Understanding Wired and Wireless Networks

Explanation

Explanation/Reference:

Section Reference: Identifying and Working with Twisted-Pair Cable

Explanation: With single-mode fiber, you send one signal. As a result, the single mode can communicate over multi-mode.

QUESTION 44

What is the maximum speed supported by 802.11b?

- A. 1 Mbps
- B. 10 Mbps
- C. 11 Mbps
- D. 54 Mbps

Correct Answer: C

Section: Understanding Wired and Wireless Networks

Explanation

Explanation/Reference:

Section Reference: Identifying Wireless Networking Standards

Explanation: 802.11b runs at 2.4 GHz and supports up to 11 Mbps.

QUESTION 45

What is the maximum speed supported by 802.11g?

- A. 1 Mbps
- B. 10 Mbps
- C. 11 Mbps
- D. 54 Mbps

Correct Answer: D

Section: Understanding Wired and Wireless Networks

Explanation

Explanation/Reference:

Section Reference: Identifying Wireless Networking Standards

Explanation: 802.11g runs at 2.4 GHz and supports up to 54 Mbps.

QUESTION 46

Which is the most secure encryption used in wireless networks?

- A. WEP
- B. WPA
- C. WPA2
- D. 802.1x

Correct Answer: C

Section: Understanding Wired and Wireless Networks

Explanation

Explanation/Reference:

Section Reference: Identifying Wireless Networking Standards

Explanation: Several types of encryption are available for wireless networks, but the most secure is WPA2 when used with AES.

QUESTION 47

To test a cable, you would use a _____.

- A. Continuity tester
- B. Patch Tester
- C. Loopback Plug
- D. Tone & Probe



Correct Answer: A

Section: Understanding Wired and Wireless Networks

Explanation

Explanation/Reference:

Difficulty: Easy

Section Reference: Identifying and Working with Twisted-Pair Cable

Explanation: To make the connections between patch panels and RJ45 jacks you need a cutting tool, a wire stripper, a punch-down tool, and a testing device known as a continuity tester, which tests all connection pins one by one.

QUESTION 48

For organizations, using _____ authentication for wireless networks is recommended.

- A. 802.1d
- B. 802.1x
- C. 802.11g

D. 802.11x

Correct Answer: B

Section: Understanding Wired and Wireless Networks

Explanation

Explanation/Reference:

Section Reference: Identifying and Working with Twisted-Pair Cable

Explanation: One way to secure a wireless connection is to use IEEE 802.1X, a port-based network access control (PNAC). This provides strong authentication to devices that need to connect to the WLAN; it can also be used for regular wired LANs.

QUESTION 49

What mode uses a wireless access point?

- A. Infrastructure Mode
- B. Ad Hop Mode
- C. Bridge Mode
- D. Forward Tunnelling Mode

Correct Answer: A

Section: Understanding Wired and Wireless Networks

Explanation

Explanation/Reference:

Difficulty: Medium

Section Reference: Infrastructure

Explanation: Infrastructure mode occurs when wireless clients connect to and are authenticated by a wireless access point, which can be expanded by creating a wireless distribution system—a group of WAPs interconnected wirelessly.

QUESTION 50

How many layers does the TCP/IP model have?

- A. 3
- B. 4
- C. 6
- D. 7

Correct Answer: B

Section: Defining Networks with the OSI Model

Explanation

Explanation/Reference:

Section Reference: Defining the TCP/IP Model

Explanation: The TCP/IP (or TCP) model is similar to the OSI model. It is often used by software manufacturers who are not as concerned with how information is sent over physical media, or how the data link is actually made. This model is composed of only four layers.

QUESTION 51

What model is used to describe how data communication occurs between hosts?

- A. server-centric model
- B. workgroup model
- C. peer-to-peer model
- D. OSI reference model

Correct Answer: D

Section: Defining Networks with the OSI Model

Explanation

Explanation/Reference:

Section Reference: Understanding OSI Basics

Explanation: The Open Systems Interconnection (OSI) reference model is used to define how data communication occurs on computer networks. This model is divided into layers, each of which provides services to the layers above and below. These layers are associated with protocols and devices.

QUESTION 52

Which layer in the OSI model do MAC addresses and switches use?

- A. Physical
- B. Data Link
- C. Network
- D. Transport

Correct Answer: B

Section: Defining Networks with the OSI Model

Explanation

Explanation/Reference:

Section Reference: Defining the Layers in the OSI Model

Explanation: The Data Link layer establishes, maintains, and decides how transfer is accomplished over the Physical layer. Devices that exist on the

Data Link layer are network interface cards and bridges. This layer also ensures error-free transmission over the Physical layer under LAN transmissions.

QUESTION 53

Which layer in the OSI model is used to verify that data was delivered without error?

- A. Physical
- B. Data Link
- C. Network
- D. Transport

Correct Answer: C

Section: Defining Networks with the OSI Model

Explanation

Explanation/Reference:

Section Reference: Defining the Layers in the OSI Model

Explanation: The Network layer ensures error-free transmission between hosts through logical addressing. Therefore, it manages the transmission of messages through layers 1 through 3.

QUESTION 54

Which layer of the OSI model is used to create a connection so that a host can transfer files?

- A. Physical
- B. Session
- C. Application
- D. Presentation

Correct Answer: B

Section: Defining Networks with the OSI Model

Explanation

Explanation/Reference:

Section Reference: Defining the Layers in the OSI Model

Explanation: The Session layer governs the establishment, termination, and synchronization of sessions within the OS over the network and between hosts.

QUESTION 55

Which layer of the OSI model includes VLANs?

- A. Physical
- B. Data Link
- C. Network
- D. Transport

Correct Answer: B

Section: Defining Networks with the OSI Model

Explanation

Explanation/Reference:

Section Reference: Understanding Layer 2 Switching

Explanation: Layer 2 switching can also allow for a virtual LAN (VLAN) to be implemented. A VLAN is implemented to segment the network, reduce collisions, organize the network, boost performance, and—hopefully—increase security.

QUESTION 56

Which protocol do you use as the transport protocol for a video application?

- A. TCP
- B. UDP
- C. FTP
- D. RDC



Correct Answer: B

Section: Defining Networks with the OSI Model

Explanation

Explanation/Reference:

Section Reference: Defining the Upper OSI Layers

Explanation: User Datagram Protocol (UDP) is a connectionless protocol with little overhead and increased performance over TCP. Streaming media enables us to watch or listen in real time. So, if a packet is lost, we don't really care, because that time frame of the video or music has already passed. Of course, if the packet loss becomes too severe, the streaming media becomes incomprehensible.

QUESTION 57

Which port categories include inbound ports of HTTP, HTTPS, FTP, and DNS?

- A. well-known ports
- B. registered ports

- C. dynamic ports
- D. private ports

Correct Answer: A

Section: Defining Networks with the OSI Model

Explanation

Explanation/Reference:

Section Reference: Defining the Upper OSI Layers

Explanation: Well-known ports are used when another computer wants to connect to a service or application running on your computer. These ports range from 0 to 1023 and define commonly used protocols such as HTTP, HTTPS, FTP, and DNS.

QUESTION 58

What layer in the OSI model is used to encrypt data?

- A. Physical
- B. Session
- C. Application
- D. Presentation

Correct Answer: D

Section: Defining Networks with the OSI Model

Explanation

Explanation/Reference:

Section Reference: Reviewing the OSI Layers

Explanation: The Presentation layer covers both compression and encryption.

QUESTION 59

Which layer in the OSI model includes the cable and network adapters?

- A. Physical
- B. Session
- C. Application
- D. Presentation

Correct Answer: A

Section: Defining Networks with the OSI Model

Explanation

Explanation/Reference:

Section Reference: Reviewing the OSI Layers

Explanation: Layer 1 covers cables, adapters, hubs, and patch-down panels.

QUESTION 60

How many layers does the TCP/IP model have?

- A. 3
- B. 4
- C. 6
- D. 7

Correct Answer: B

Section: Defining Networks with the OSI Model

Explanation

Explanation/Reference:

Section Reference: Defining the TCP/IP Model

Explanation: The TCP/IP (or TCP) model is similar to the OSI model. It is often used by software manufacturers who are not as concerned with how information is sent over physical media, or how the data link is actually made. This model is composed of only four layers.

QUESTION 61

Which layer in the OSI model is included in the TCP/IP model?

- A. Physical
- B. Data Link
- C. Transport
- D. Application

Correct Answer: C

Section: Defining Networks with the OSI Model

Explanation

Explanation/Reference:

Section Reference: Defining the TPC/IP Model

Explanation: In the TCP/IP model, the OSI Physical layer is skipped altogether, and the Application layer comprises the OSI application, presentation, and session layers. The Transport layer is the only one from the OSI model that also appears in the TCP/IP model.

QUESTION 62

Which protocol is used to translate IP addresses to MAC addresses?

- A. RARP
- B. ARP
- C. DNS
- D. WINS

Correct Answer: B

Section: Defining Networks with the OSI Model

Explanation

Explanation/Reference:

Section Reference: Understanding Layer 2 Switching

Explanation: The Address Resolution Protocol (ARP) is used to convert IP addresses to MAC addresses, which are the physical addresses found on a network card.

QUESTION 63

What ports are defined above 49,152?

- A. well-known ports
- B. registered ports
- C. dynamic ports
- D. sliding ports

Correct Answer: C

Section: Defining Networks with the OSI Model

Explanation

Explanation/Reference:

Difficulty: Easy

Section Reference: Defining the Upper OSI Layers

Explanation: Dynamic ports, also known as private ports, can be used by applications, but they cannot be registered by vendors. Dynamic ports are from port 49152 to 65535.

Fill in the Blank

QUESTION 64

TCP/IP and IPX/SPX are known as _____ stacks.

- A. Protocols
- B. Services
- C. Layers
- D. Lenses

Correct Answer: A

Section: Defining Networks with the OSI Model

Explanation

Explanation/Reference:

Section Reference: Defining the Layers in the OSI Model

Explanation: Sometimes a protocol suite such as TCP/IP is referred to as a protocol stack.

QUESTION 65

What is the advantage of UDP over TCP?

- A. Less Overhead - Faster Performance
- B. Older - Larger pool of compatible hardware
- C. TCP is not IPv6 compatible UDP is
- D. UDP can operate at Layer 1



Correct Answer: A

Section: Defining Networks with the OSI Model

Explanation

Explanation/Reference:

Section Reference: The Upper OSI Layers

Explanation: Two common TCP/IP protocols used on the Transport layer include the Transmission Control Protocol (TCP), which is a connection-oriented protocol, and the User Datagram Protocol (UDP), which is connectionless.

QUESTION 66

What is the maximum speed supported by 802.11b?

- A. 1 Mbps
- B. 10 Mbps
- C. 11 Mbps
- D. 54 Mbps

Correct Answer: C

Section: Understanding Wired and Wireless Networks

Explanation

Explanation/Reference:

Section Reference: Identifying Wireless Networking Standards

Explanation: 802.11b runs at 2.4 GHz and supports up to 11 Mbps.

QUESTION 67

What do you use to create VLANs

- A. router
- B. switch
- C. firewall
- D. proxy server

Correct Answer: B

Section: Understanding Local Area Networks

Explanation

Explanation/Reference:

Section Reference: Identifying Types of LANs

Explanation: Switches usually control the VLAN. Like subnetting, a VLAN compartmentalizes a network and can isolate traffic.

QUESTION 68

Which protocol do you use as the transport protocol for a video application?

- A. TCP
- B. UDP
- C. FTP
- D. RDC

Correct Answer: B

Section: Defining Networks with the OSI Model

Explanation

Explanation/Reference:

Section Reference: Defining the Upper OSI Layers

Explanation: User Datagram Protocol (UDP) is a connectionless protocol with little overhead and increased performance over TCP. Streaming media enables us to watch or listen in real time. So, if a packet is lost, we don't really care, because that time frame of the video or music has already passed. Of course, if the packet loss becomes too severe, the streaming media becomes incomprehensible.

QUESTION 69

Which layer in the OSI model includes the cable and network adapters?

- A. Physical
- B. Session
- C. Application
- D. Presentation

Correct Answer: A

Section: Defining Networks with the OSI Model

Explanation

Explanation/Reference:

Section Reference: Reviewing the OSI Layers

Explanation: Layer 1 covers cables, adapters, hubs, and patch-down panels.

QUESTION 70

Which layer in the OSI model is included in the TCP/IP model?

- A. Physical
- B. Data Link
- C. Transport
- D. Application

Correct Answer: C

Section: Defining Networks with the OSI Model

Explanation

Explanation/Reference:

Section Reference: Defining the TPC/IP Model

Explanation: In the TCP/IP model, the OSI Physical layer is skipped altogether, and the Application layer comprises the OSI application, presentation, and session layers. The Transport layer is the only one from the OSI model that also appears in the TCP/IP model.