Which of the following statements are true regarding the command `ip route 172.16.4.0 255.255.255.0 192.168.4.2`?

The command is used to establish a static route.

The default administrative distance is used.

The command is used to configure the default route.

The subnet mask for the source address is 255.255.255.0.

A. 1 and 2

B. 2 and 4

C. 3 and 4

D. All of the above

Answer: Option **A**

Which command displays RIP routing updates?

A. `show ip route`

B. `debug ip rip`

C. `show protocols`

D. `debug ip route`

Answer: Option **B**

Which statement is true regarding classless routing protocols?

The use of discontiguous networks is not allowed.

The use of variable length subnet masks is permitted.

RIPv1 is a classless routing protocol.

IGRP supports classless routing within the same autonomous system.

RIPv2 supports classless routing.

A. 1, 3 and 5

B. 3 and 4

C. 2 and 5

D. None of the above

Answer: Option **C**

You have the following routing table. Which of the following networks will not be placed in the neighbor routing table?

```
R    192.168.30.0/24 [120/1] via 192.168.40.1, 00:00:12, Serial0
C    192.168.40.0/24 is directly connected, Serial0
     172.16.0.0/24 is subnetted, 1 subnets
C    172.16.30.0 is directly connected, Loopback0
R    192.168.20.0/24 [120/1] via 192.168.40.1, 00:00:12, Serial0
R    10.0.0.0/8 [120/15] via 192.168.40.1, 00:00:07, Serial0
C    192.168.50.0/24 is directly connected, Ethernet0
```

A. 172.16.30.0

B. 192.168.30.0

C. 10.0.0.0

D. All of them will be placed in the neighbor routing table.

Answer: Option **C**

What is split horizon?

A. Information about a route should not be sent back in the direction from which the original update came.

B. It splits the traffic when you have a large bus (horizon) physical network.

C. It holds the regular updates from broadcasting to a downed link.

D. It prevents regular update messages from reinstating a route that has gone down.

Answer: Option **A**

What command is used to stop RIP routing updates from exiting out an interface but still allow the interface to receive RIP route updates?

A. *Router(config-if)# no routing*

B. *Router(config-if)# passive-interface*

C. *Router(config-router)# passive-interface s0*

D. *Router(config-router)# no routing updates*

Answer: Option **C**

Two connected routers are configured with RIP routing. What will be the result when a router receives a routing update that contains a higher-cost path to a network already in its routing table?

A. The updated information will be added to the existing routing table.

B. The update will be ignored and no further action will occur.

C. The updated information will replace the existing routing table entry.

D. The existing routing table entry will be deleted from the routing table and all routers will exchange routing updates to reach convergence.

Answer: Option **B**

You type *debug ip rip* on your router console and see that 172.16.10.0 is being advertised to you with a metric of 16. What does this mean?

A. The route is 16 hops away.

B. The route has a delay of 16 microseconds.

C. The route is inaccessible.

D. The route is queued at 16 messages a second.

Answer: Option **C**

The Corporate router receives an IP packet with a source IP address of 192.168.214.20 and a destination address of 192.168.22.3. Looking at the output from the Corporate router, what will the router do with this packet?

```
Corp#sh ip route
[output cut]
R    192.168.215.0 [120/2] via 192.168.20.2, 00:00:23, Serial0/0
R    192.168.115.0 [120/1] via 192.168.20.2, 00:00:23, Serial0/0
R    192.168.30.0 [120/1] via 192.168.20.2, 00:00:23, Serial0/0
C    192.168.20.0 is directly connected, Serial0/0
C    192.168.214.0 is directly connected, FastEthernet0/0
```

A. The packet will be discarded.

B. The packet will be routed out the S0/0 interface.

C. The router will broadcast looking for the destination.

D. The packet will be routed out the Fa0/0 interface.

Answer: Option **A**

If your routing table has a static, a RIP, and an IGRP route to the same network, which route will be used to route packets by default?

A. Any available route

B. RIP route

C. Static route

D. IGRP route

E. They will all load-balance.

Answer: Option **C**

What is route poisoning?

A. It sends back the protocol received from a router as a poison pill, which stops the regular updates.

B. It is information received from a router that can't be sent back to the originating router.

C. It prevents regular update messages from reinstating a route that has just come up.

D. It describes when a router sets the metric for a downed link to infinity.

Answer: Option **D**

Which of the following is true regarding RIPv2?

A. It has a lower administrative distance than RIPv1.

B. It converges faster than RIPv1.

C. It has the same timers as RIPv1.

D. It is harder to configure than RIPv1.

Answer: Option **C**

. A network administrator views the output from the `show ip route` command. A network that is advertised by both RIP and IGRP appears in the routing table flagged as an IGRP route. Why is the RIP route to this network not used in the routing table?

A. IGRP has a faster update timer.

B. IGRP has a lower administrative distance.

C. RIP has a higher metric value for that route.

D. The IGRP route has fewer hops.

Answer: Option **B**

What does RIPv2 use to prevent routing loops?

CIDR

Split horizon

Authentication

Classless masking

Holddown timers

A. 1 and 3

B. 2, 3 and 5

C. 2 and 5

D. 3 and 4

Answer: Option **C**

Which two of the following are true regarding the distance-vector and link-state routing protocols?

Link state sends its complete routing table out all active interfaces on periodic time intervals.

Distance vector sends its complete routing table out all active interfaces on periodic time intervals.

Link state sends updates containing the state of its own links to all routers in the internetwork.

Distance vector sends updates containing the state of its own links to all routers in the internetwork.

A. 1 only

B. 3 only

C. 2 and 3 only

D. None of the above

Answer: Option **C**

IGRP uses which of the following as default parameters for finding the best path to a remote network?

Hop count

MTU

Cumulative interface delay

STP

Path bandwidth value

A. 1 and 3

B. 3 and 5

C. 2, 3 and 5

D. All of the above

Answer: Option **B**

Network 206.143.5.0 was assigned to the Acme Company to connect to its ISP. The administrator of Acme would like to configure one router with the commands to access the Internet. Which commands could be configured on the Gateway router to allow Internet access to the entire network?

```
Gateway(config)# ip route 0.0.0.0 0.0.0.0 206.143.5.2
Gateway(config)# router rip
Gateway(config-router)# network 206.143.5.0
Gateway(config-router)# network 206.143.5.0 default
```

A. 1 only

B. 3 only

C. 1, 2 and 4

D. 1 and 4

Answer: Option **D**

How long is an IPv6 address?

A. 32 bits

B. 128 bytes

C. 64 bits

D. 128 bits

Answer: Option **D**

What flavor of Network Address Translation can be used to have one IP address allow many users to connect to the global Internet?

A. NAT

B. Static

C. Dynamic

D. PAT

Answer: Option **D**

What are the two main types of access control lists (ACLs)?

Standard

IEEE

Extended

Specialized

A. 1 and 3

B. 2 and 4

C. 3 and 4

D. 1 and 2

Answer: Option **A**

What command is used to create a backup configuration?

A. `copy running backup`

B. `copy running-config startup-config`

C. `config mem`

D. `wr mem`

Answer: Option **B**

You have 10 users plugged into a hub running 10Mbps half-duplex. There is a server connected to the switch running 10Mbps half-duplex as well. How much bandwidth does each host have to the server?

A. 100 kbps

B. 1 Mbps

C. 2 Mbps

D. 10 Mbps

Answer: Option **D**

Which WLAN IEEE specification allows up to 54Mbps at 2.4GHz?

A. A

B. B

C. G

D. N

Answer: Option **C**

Which of the following is the valid host range for the subnet on which the IP address 192.168.168.188 255.255.255.192 resides?

A. 192.168.168.129-190

B. 192.168.168.129-191

C. 192.168.168.128-190

D. 192.168.168.128-192

Answer: Option **A**

To back up an IOS, what command will you use?

A. `backup IOS disk`

B. `copy ios tftp`

C. `copy tftp flash`

D. `copy flash tftp`

Answer: Option **D**

What protocol does PPP use to identify the Network layer protocol?

A. NCP

B. ISDN

C. HDLC

D. LCP

Answer: Option **A**

Which of the following commands will allow you to set your Telnet password on a Cisco router?

A. `line telnet 0 4`

B. `line aux 0 4`

C. `line vty 0 4`

D. `line con 0`

Answer: Option **C**

Which protocol does DHCP use at the Transport layer?

A. IP

B. TCP

C. UDP

D. ARP

Answer: Option **C**

Which command is used to determine if an IP access list is enabled on a particular interface?

A. `show access-lists`

B. `show interface`

C. `show ip interface`

D. `show interface access-lists`

Answer: Option **C**

Where is a hub specified in the OSI model?

A. Session layer

B. Physical layer

C. Data Link layer

D. Application layer

Answer: Option **B**

What does the `passive` command provide to dynamic routing protocols?

A. Stops an interface from sending or receiving periodic dynamic updates.

B. Stops an interface from sending periodic dynamic updates but not from receiving updates.

C. Stops the router from receiving any dynamic updates.

D. Stops the router from sending any dynamic updates.

Answer: Option **B**

Which protocol is used to send a destination network unknown message back to originating hosts?

A. TCP

B. ARP

C. ICMP

D. BootP

Answer: Option **C**

How often are BPDUs sent from a layer 2 device?

A. Never

B. Every 2 seconds

C. Every 10 minutes

D. Every 30 seconds

Answer: Option **B**

How many broadcast domains are created when you segment a network with a 12-port switch?

A. 1

B. 2

C. 5

D. 12

Answer: Option **A**

What does the command `routerA(config)#line cons 0` allow you to perform next?

A. Set the Telnet password.

B. Shut down the router.

C. Set your console password.

D. Disable console connections.

Answer: Option **C**

Which router command allows you to view the entire contents of all access lists?

A. `show all access-lists`

B. `show access-lists`

C. `show ip interface`

D. `show interface`

Answer: Option **B**

Which class of IP address has the most host addresses available by default?

A. A

B. B

C. C

D. A and B

Answer: Option **A**

In a network with dozens of switches, how many root bridges would you have?

A. 1

B. 2

C. 5

D. 12

Answer: Option **A**

What PPP protocol provides dynamic addressing, authentication, and multilink?

A. NCP

B. HDLC

C. LCP

D. X.25

Answer: Option **C**

What is a stub network?

A. A network with more than one exit point.

B. A network with more than one exit and entry point.

C. A network with only one entry and no exit point.

D. A network that has only one entry and exit point.

Answer: Option **D**

If your router is facilitating a CSU/DSU, which of the following commands do you need to use to provide the router with a 64000bps serial link?

A. `RouterA(config)#bandwidth 64`

B. `RouterA(config-if)#bandwidth 64000`

C. `RouterA(config-if)#clock rate 64`

D. `RouterA(config-if)#clock rate 64000`

Answer: Option **D**

Which one of the following is true regarding VLANs?

A. Two VLANs are configured by default on all Cisco switches.

B. VLANs only work if you have a complete Cisco switched internetwork. No off-brand switches are allowed.

C. You should not have more than 10 switches in the same VTP domain.

D. VTP is used to send VLAN information to switches in a configured VTP domain.

Answer: Option **D**

What does a VLAN do?

A. Acts as the fastest port to all servers.

B. Provides multiple collision domains on one switch port.

C. Breaks up broadcast domains in a layer 2 switch internetwork.

D. Provides multiple broadcast domains within a single collision domain.

Answer: Option **C**

What is the main reason the OSI model was created?

A. To create a layered model larger than the DoD model.

B. So application developers can change only one layer's protocols at a time.

C. So different networks could communicate.

D. So Cisco could use the model.

Answer: Option **C**

How many collision domains are created when you segment a network with a 12-port switch?

A. 1

B. 2

C. 5

D. 12

Answer: Option **D**

What command will display the line, protocol, DLCI, and LMI information of an interface?

A. `sh pvc`

B. `show interface`

C. `show frame-relay pvc`

D. `show run`

Answer: Option **B**

Which protocol does Ping use?

A. TCP

B. ARP

C. ICMP

D. BootP

Answer: Option **C**

Which command is used to upgrade an IOS on a Cisco router?

A. `copy tftp run`

B. `copy tftp start`

C. `config net`

D. `copy tftp flash`

Answer: Option **D**

If you wanted to delete the configuration stored in NVRAM, what would you type?

A. `erase startup`

B. `erase nvram`

C. `delete nvram`

D. `erase running`

Answer: Option **A**

What protocols are used to configure trunking on a switch?

VLAN Trunking Protocol

VLAN

802.1Q

ISL

A. 1 and 2

B. 3 and 4

C. 1 only

D. 2 only

Answer: Option **B**

Which of the following is true when describing a multicast address?

A. Packets addressed to a unicast address are delivered to a single interface.

B. Packets are delivered to all interfaces identified by the address. This is also called a one-to-many address.

C. Identifies multiple interfaces and is only delivered to one address. This address can also be called one-to-one-of-many.

D. These addresses are meant for nonrouting purposes, but they are almost globally unique so it is unlikely they will have an address overlap.

Answer: Option **B**

Which of the following is true when describing a unicast address?

A. Packets addressed to a unicast address are delivered to a single interface.

B. These are your typical publicly routable addresses, just like a regular publicly routable address in IPv4.

C. These are like private addresses in IPv4 in that they are not meant to be routed.

D. These addresses are meant for nonrouting purposes, but they are almost globally unique so it is unlikely they will have an address overlap.

Answer: Option **A**

To enable OSPFv3, which of the following would you use?

A. Router1(config-if)# *ipv6 ospf 10 area 0.0.0.0*

B. Router1(config-if)# *ipv6 router rip 1*

C. Router1(config)# *ipv6 router eigrp 10*

D. Router1(config-rtr)# *no shutdown*

E. Router1(config-if)# *ipv6 eigrp 10*

Answer: Option **A**

What multicast addresses does RIPng use?

A. *FF02::A*

B. *FF02::9*

C. *FF02::5*

D. *FF02::6*

Answer: Option **B**

Which statement(s) about IPv6 addresses are true?

Leading zeros are required.

Two colons (::) are used to represent successive hexadecimal fields of zeros.

Two colons (::) are used to separate fields.

A single interface will have multiple IPv6 addresses of different types.

A. 1 and 3

B. 2 and 4

C. 1, 3 and 4

D. All of the above

Answer: Option **B**

To enable RIPng, which of the following would you use?

A. Router1(config-if)# *ipv6 ospf 10 area 0.0.0.0*

B. Router1(config-if)# *ipv6 router rip 1*

C. Router1(config)# *ipv6 router eigrp 10*

D. Router1(config-rtr)# *no shutdown*

E. Router1(config-if)# *ipv6 eigrp 10*

Answer: Option **B**

Which of the following is true when describing a global unicast address?

A. Packets addressed to a unicast address are delivered to a single interface.

B. These are your typical publicly routable addresses, just like a regular publicly routable address in IPv4.

C. These are like private addresses in IPv4 in that they are not meant to be routed.

D. These addresses are meant for nonrouting purposes, but they are almost globally unique so it is unlikely they will have an address overlap.

Answer: Option **B**

What two multicast addresses does OSPFv3 use?

FF02::A
FF02::9
FF02::5
FF02::6

A. 2 only

B. 3 only

C. 1 and 3

D. 3 and 4

Answer: Option **D**

What multicast addresses does EIGRPv6 use?

A. `FF02::A`

B. `FF02::9`

C. `FF02::5`

D. `FF02::6`

Answer: Option **A**

To enable EIGRP, which of the following would you use?
Router1(config-if)# `ipv6 ospf 10 area 0.0.0.0`
Router1(config-if)# `ipv6 router rip 1`
Router1(config)# `ipv6 router eigrp 10`
Router1(config-rtr)# `no shutdown`
Router1(config-if)# `ipv6 eigrp 10`

A. 1, 3 and 5

B. 3, 4 and 5

C. 1 and 3

D. 5 only

Answer: Option **B**

Which of the following is true when describing a link-local address?

A. Packets addressed to a unicast address are delivered to a single interface.

B. These are your typical publicly routable addresses, just like a regular publicly routable address in IPv4.

C. These are like private addresses in IPv4 in that they are not meant to be routed.

D. These addresses are meant for nonrouting purposes, but they are almost globally unique so it is unlikely they will have an address overlap.

Answer: Option **C**

Which of the following is true when describing a unique local address?

A. Packets addressed to a unicast address are delivered to a single interface.

B. These are your typical publicly routable addresses, just like a regular publicly routable address in IPv4.

C. These are like private addresses in IPv4 in that they are not meant to be routed.

D. These addresses are meant for nonrouting purposes, but they are almost globally unique so it is unlikely they will have an address overlap.

Answer: Option **D**

Which of the following is true when describing an anycast address?

A. Packets addressed to a unicast address are delivered to a single interface.

B. Packets are delivered to all interfaces identified by the address. This is also called one-to-many addresses.

C. This address identifies multiple interfaces and the anycast packet is only delivered to one address. This address can also be called one-to-one-of-many.

D. These addresses are meant for nonrouting purposes, but they are almost globally unique so it is unlikely they will have an address overlap.

Answer: Option **C**

You want to ping the loopback address of your local host(with IPv6). What will you type?

A. `ping 127.0.0.1`

B. `ping 0.0.0.0`

C. `ping ::1`

D. `trace 0.0.::1`

Answer: Option **C**

Which statement(s) about IPv4 and IPv6 addresses are true?

An IPv6 address is 32 bits long, represented in hexidecimal.

An IPv6 address is 128 bits long, represented in decimal.

An IPv4 address is 32 bits long, represented in decimal.

An IPv6 address is 128 bits long, represented in hexidecimal.

A. 1 and 3 only

B. 2 only

C. 3 and 4

D. 2 and 4

Answer: Option **C**

Which layer 1 devices can be used to enlarge the area covered by a single LAN segment?

Switch

NIC

Hub

Repeater

RJ45 transceiver

A. 1 only

B. 1 and 3

C. 3 and 4

D. 5 only

Answer: Option **C**

Routers operate at layer _____. LAN switches operate at layer _____. Ethernet hubs operate at layer _____. Word processing operates at layer _____.

A. 3, 3, 1, 7

B. 3, 2, 1, none

C. 3, 2, 1, 7

D. 3, 3, 2, none

Answer: Option **B**

Which of the following describe router functions?

A. Packet switching

B. Packet filtering

C. Internetwork communication

D. Path selection

E. All of the above

Answer: Option **E**

Why does the data communication industry use the layered OSI reference model?

It divides the network communication process into smaller and simpler components, thus aiding component development, design, and troubleshooting.

It enables equipment from different vendors to use the same electronic components, thus saving research and development funds.

It supports the evolution of multiple competing standards and thus provides business opportunities for equipment manufacturers.

It encourages industry standardization by defining what functions occur at each layer of the model.

A. 1 only

B. 1 and 4

C. 2 and 3

D. 3 only

Answer: Option **B**

A receiving host has failed to receive all of the segments that it should acknowledge. What can the host do to improve the reliability of this communication session?

A. Send a different source port number.

B. Restart the virtual circuit.

C. Decrease the sequence number.

D. Decrease the window size.

Answer: Option **D**

What are the decimal and hexadecimal equivalents for the binary number *10110111*?

A. *69/0x2102*

B. *183/B7*

C. *173/A6*

D. *83/0xC5*

Answer: Option **B**

What is the purpose of flow control?

A. To ensure that data is retransmitted if an acknowledgment is not received.

B. To reassemble segments in the correct order at the destination device.

C. To provide a means for the receiver to govern the amount of data sent by the sender.

D. To regulate the size of each segment.

Answer: Option **C**

Which three statements are true about the operation of a full-duplex Ethernet network?

There are no collisions in full-duplex mode.

A dedicated switch port is required for each full-duplex node.

Ethernet hub ports are preconfigured for full-duplex mode.

In a full-duplex environment, the host network card must check for the availability of the network media before transmitting.

The host network card and the switch port must be capable of operating in full-duplex mode.

A. 1, 2, and 5

B. 2 and 4

C. 2, 3 and 4

D. 5 only

Answer: Option **A**

Which of the following are types of flow control?

Buffering

Cut-through

Windowing

Congestion avoidance

A. 1 and 2

B. 1, 3 and 4

C. 2 only

D. 3 only

Answer: Option **B**

What are two purposes for segmentation with a bridge?

To add more broadcast domains.

To create more collision domains.

To add more bandwidth for users.

To allow more broadcasts for users.

A. 1 only

B. 2 and 3

C. 2 and 4

D. 4 only

Answer: Option **B**

How does a host on an Ethernet LAN know when to transmit after a collision has occurred?

In a CSMA/CD collision domain, multiple stations can successfully transmit data simultaneously.

In a CSMA/CD collision domain, stations must wait until the media is not in use before transmitting.

You can improve the CSMA/CD network by adding more hubs.

After a collision, the station that detected the collision has first priority to resend the lost data.

After a collision, all stations run a random backoff algorithm. When the backoff delay period has expired, all stations have equal priority to transmit data.

A. 1 and 3

B. 2 and 4

C. 1,3 and 4

D. 2 and 5

Answer: Option **D**

Which of the following types of connections can use full duplex?

Hub to hub

Switch to switch

Host to host

Switch to hub

Switch to host

A. 1, 2 and 4

B. 3 and 4

C. 3 and 5

D. 2, 3 and 5

Answer: Option **D**

Acknowledgments, sequencing, and flow control are characteristics of which OSI layer?

A. Layer 2

B. Layer 3

C. Layer 4

D. Layer 7

Answer: Option **C**

Which fields are contained within an IEEE Ethernet frame header?

Source and destination MAC address

Source and destination network address

Source and destination MAC address and source and destination network address

FCS field

A. 1 and 4

B. 2 only

C. 2 and 3 only

D. 3 only

Answer: Option **A**

What type of RJ45 UTP cable do you use to connect a PC's COM port to a router or switch console port?

A. Straight-through

B. Crossover cable

C. Crossover with a CSU/DSU

D. Rolled

Answer: Option **D**

How to implement a network medium that is not susceptible to EMI. Which type of cabling should you use?

A. Thicknet coax

B. Thinnet coax

C. Category 5 UTP cable

D. Fiber-optic cable

Answer: Option **D**

Segmentation of a data stream happens at which layer of the OSI model?

A. Physical

B. Data Link

C. Network

D. Transport

Answer: Option **D**

When data is encapsulated, which is the correct order?

A. Data, frame, packet, segment, bit

B. Segment, data, packet, frame, bit

C. Data, segment, packet, frame, bit

D. Data, segment, frame, packet, bit

Answer: Option **C**

Which of the following are unique characteristics of half-duplex Ethernet when compared to full-duplex Ethernet?

Half-duplex Ethernet operates in a shared collision domain.

Half-duplex Ethernet operates in a private collision domain.

Half-duplex Ethernet has higher effective throughput.

Half-duplex Ethernet has lower effective throughput.

A. 2 only

B. 1,2 and 3

C. 1 and 4

D. 4 only

Answer: Option **C**

What type of RJ45 UTP cable is used between switches?

A. Straight-through

B. Crossover cable

C. Crossover with a CSU/DSU

D. Crossover with a router in between the two switches

Answer: Option **B**

Which of the following services use TCP?

DHCP

SMTP

HTTP

TFTP

FTP

A. 1 and 2

B. 2, 3 and 5

C. 1, 2 and 4

D. 1, 3 and 4

Answer: Option **B**

What layer in the TCP/IP stack is equivalent to the Transport layer of the OSI model?

A. Application

B. Host-to-Host

C. Internet

D. Network Access

Answer: Option **B**

Which of the following describe the DHCP Discover message?
It uses `FF:FF:FF:FF:FF:FF` as a layer 2 broadcast.

It uses UDP as the Transport layer protocol.

It uses TCP as the Transport layer protocol.

It does not use a layer 2 destination address.

A. 1 only

B. 1 and 2

C. 3 and 4

D. 4 only

Answer: Option **B**

You want to implement a mechanism that automates the IP configuration, including IP address, subnet mask, default gateway, and DNS information. Which protocol will you use to accomplish this?

A. SMTP

B. SNMP

C. DHCP

D. ARP

Answer: Option **C**

Which of the following is private IP address?

A. 12.0.0.1

B. 168.172.19.39

C. 172.15.14.36

D. 192.168.24.43

Answer: Option **D**

Which of the following allows a router to respond to an ARP request that is intended for a remote host?

A. Gateway DP

B. Reverse ARP (RARP)

C. Proxy ARP

D. Inverse ARP (IARP)

Answer: Option **C**

The DoD model (also called the TCP/IP stack) has four layers. Which layer of the DoD model is equivalent to the Network layer of the OSI model?

A. Application

B. Host-to-Host

C. Internet

D. Network Access

Answer: Option **C**

Which of the following services use UDP?

DHCP

SMTP

SNMP

FTP

HTTP

TFTP

A. 1, 3 and 6

B. 2 and 4

C. 1, 2 and 4

D. All of the above

Answer: Option **A**

Which class of IP address provides a maximum of only 254 host addresses per network ID?

A. Class A

B. Class B

C. Class C

D. Class D

Answer: Option **C**

If you use either Telnet or FTP, which is the highest layer you are using to transmit data?

A. Application

B. Presentation

C. Session

D. Transport

Answer: Option **A**

Which of the following is the decimal and hexadecimal equivalents of the binary number 10011101?

A. 155, 0x9B

B. 157, 0x9D

C. 159, 0x9F

D. 185, 0xB9

Answer: Option **B**

Which statements are true regarding ICMP packets?

They acknowledge receipt of a TCP segment.

They guarantee datagram delivery.

They can provide hosts with information about network problems.

They are encapsulated within IP datagrams.

A. 1 only

B. 2 and 3

C. 3 and 4

D. 2, 3 and 4

Answer: Option **C**

Which of the following are layers in the TCP/IP model?

Application

Session

Transport

Internet

Data Link

Physical

A. 1 and 2

B. 1, 3 and 4

C. 2, 3 and 5

D. 3, 4 and 5

Answer: Option **B**

Which layer 4 protocol is used for a Telnet connection?

A. IP

B. TCP

C. TCP/IP

D. UDP

Answer: Option **B**

Which statements are true regarding ICMP packets?

ICMP guarantees datagram delivery.

ICMP can provide hosts with information about network problems.

ICMP is encapsulated within IP datagrams.

ICMP is encapsulated within UDP datagrams.

A. 1 only

B. 2 and 3

C. 1 and 4

D. All of the above

Answer: Option **B**

Which of the following are TCP/IP protocols used at the Application layer of the OSI model?

IP

TCP

Telnet

FTP

TFTP

A. 1 and 3

B. 1, 3 and 5

C. 3, 4 and 5

D. All of the above

Answer: Option **C**

What protocol is used to find the hardware address of a local device?

A. RARP

B. ARP

C. IP

D. ICMP

Answer: Option **B**

Which of the following protocols uses both TCP and UDP?

A. FTP

B. SMTP

C. Telnet

D. DNS

Answer: Option **D**

What is the address range of a Class B network address in binary?

A. *01xxxxxx*

B. *0xxxxxxx*

C. *10xxxxxx*

D. *110xxxxx*

Answer: Option **C**

With which network type will OSPF establish router adjacencies but not perform the DR/BDR election process?

A. Point-to-point

B. Backbone area 0

C. Broadcast multi-access

D. Non-broadcast multi-access

Answer: Option **A**

Which of the following describe the process identifier that is used to run OSPF on a router?

It is locally significant.

It is globally significant.

It is needed to identify a unique instance of an OSPF database.

It is an optional parameter required only if multiple OSPF processes are running on the router.

A. 1, 2 and 4

B. 1 and 3

C. 3 and 5

D. All of the above

Answer: Option **B**

A network administrator needs to configure a router with a distance-vector protocol that allows classless routing. Which of the following satisfies those requirements?

A. IGRP

B. OSPF

C. RIPv1

D. EIGRP

E. IS-IS

Answer: Option **D**

What is the administrative distance of OSPF?

A. 90

B. 100

C. 110

D. 120

Answer: Option **C**

Your company is running IGRP using an AS of 10. You want to configure EIGRP on the network but want to migrate slowly to EIGRP and don't want to configure redistribution. What command would allow you to migrate over time to EIGRP without configuring redistribution?

A. `router eigrp 11`

B. `router eigrp 10`

C. `router eigrp 10 redistribute igrp`

D. `router igrp combine eigrp 10`

Answer: Option **B**

Where are EIGRP successor routes stored?

A. In the routing table only

B. In the neighbor table only

C. In the topology table only

D. In the routing table and the topology table

E. In the routing table and the neighbor table

Answer: Option **D**

Which command will display all the EIGRP feasible successor routes known to a router?

A. `show ip routes *`

B. `show ip eigrp summary`

C. `show ip eigrp topology`

D. `show ip eigrp adjacencies`

Answer: Option **C**

Which is true regarding EIGRP successor routes?

A successor route is used by EIGRP to forward traffic to a destination.

Successor routes are saved in the topology table to be used if the primary route fails.

Successor routes are flagged as "active" in the routing table.

A successor route may be backed up by a feasible successor route.

Successor routes are stored in the neighbor table following the discovery process.

A. 1 and 3

B. 2 and 3

C. 1 and 4

D. 3, 4 and 5

Answer: Option **C**

Which EIGRP information is held in RAM and maintained through the use of Hello and update packets?

Neighbor table

STP table

Topology table

DUAL table

A. 2 only

B. 4 only

C. 1 and 3

D. All of the above

Answer: Option **C**

Which of the following are true regarding OSPF areas?

You must have separate loopback interfaces configured in each area.

The numbers you can assign an area go up to 65,535.

The backbone area is also called area 0.

If your design is hierarchical, then you don't need multiple areas.

All areas must connect to area 0.

A. 1 only

B. 1 and 2 only

C. 3 and 4 only

D. 3, 4 and 5

Answer: Option **D**

What are reasons for creating OSPF in a hierarchical design?

To decrease routing overhead

To speed up convergence

To confine network instability to single areas of the network

To make configuring OSPF easier

A. 1, 2 and 3

B. 3 only

C. 3 and 4

D. 2, 3 nd 4

Answer: Option **A**

Which two of the following commands will place network 10.2.3.0/24 into area 0?

```
router eigrp 10
router ospf 10
network 10.0.0.0
network 10.2.3.0 0.0.0.255 area0
network 10.2.3.0 0.0.0.255 area 0
```

A. 1 and 4

B. 2, 4, and 5

C. 2 and 5

D. 3 and 4

Answer: Option **C**

If routers in a single area are configured with the same priority value, what value does a router use for the OSPF Router ID in the absence of a loopback interface?

A. The lowest IP address of any physical interface

B. The highest IP address of any physical interface

C. The lowest IP address of any logical interface

D. The highest IP address of any logical interface

Answer: Option **B**

Which of the following protocols support VLSM, summarization, and discontiguous networking?

RIPv1

IGRP

EIGRP

OSPF

BGP

RIPv2

A. 1 and 4

B. 2 and 5

C. 3, 4 and 6

D. All of the above

Answer: Option **C**

You get a call from a network administrator who tells you that he typed the following into his router:

```
Router(config)#router ospf 1
Router(config-router)#network 10.0.0.0 255.0.0.0 area 0
```

He tells you he still can't see any routes in the routing table. What configuration error did the administrator make?

A. The wildcard mask is incorrect.

B. The OSPF area is wrong.

C. The OSPF Process ID is incorrect.

D. The AS configuration is wrong.

Answer: Option **A**

Which of the following network types have a designated router and a backup designated router assigned?

Broadcast

Point-to-point

NBMA

NBMA point-to-point

A. 1, 2 and 3

B. 1 and 3

C. 3 and 4

D. All of the above

Answer: Option **B**

Which type of OSPF network will elect a backup designated router?

Broadcast multi-access

Non-broadcast multi-access

Point-to-point

Broadcast multipoint

A. 1 and 2

B. 3 and 4

C. 3 only

D. None of the above

Answer: Option **A**

You need the IP address of the devices with which the router has established an adjacency. Also, the retransmit interval and the queue counts for the adjacent routers need to be checked. What command will display the required information?

A. `show ip eigrp adjacency`

B. `show ip eigrp topology`

C. `show ip eigrp interfaces`

D. `show ip eigrp neighbors`

Answer: Option **D**

Your router has the following IP address on Ethernet0: 172.16.2.1/23. Which of the following can be valid host IDs on the LAN interface attached to the router?

172.16.1.100

172.16.1.198

172.16.2.255

172.16.3.0

A. 1 only

B. 2 and 3 only

C. 3 and 4 only

D. None of the above

Answer: Option **C**

Which two statements describe the IP address 10.16.3.65/23?

The subnet address is 10.16.3.0 255.255.254.0.

The lowest host address in the subnet is 10.16.2.1 255.255.254.0.

The last valid host address in the subnet is 10.16.2.254 255.255.254.0.

The broadcast address of the subnet is 10.16.3.255 255.255.254.0.

A. 1 and 3

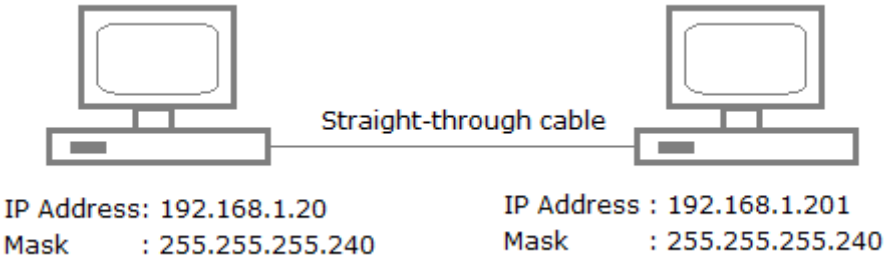
B. 2 and 4

C. 1, 2 and 4

D. 2, 3 and 4

Answer: Option **B**

A network administrator is connecting hosts A and B directly through their Ethernet interfaces, as shown in the illustration. Ping attempts between the hosts are unsuccessful. What can be done to provide connectivity between the hosts?



A crossover cable should be used in place of the straight-through cable.

A rollover cable should be used in place of the straight-through cable.

The subnet masks should be set to 255.255.255.192.

A default gateway needs to be set on each host.

The subnet masks should be set to 255.255.255.0.

A. 1 only

B. 2 only

C. 3 and 4 only

D. 1 and 5 only

E. 2 and 5 only

Answer: Option **D**

What is the maximum number of IP addresses that can be assigned to hosts on a local subnet that uses the 255.255.255.224 subnet mask?

A. 14

B. 15

C. 16

D. 30

Answer: Option **D**

You need to subnet a network that has 5 subnets, each with at least 16 hosts. Which classful subnet mask would you use?

A. 255.255.255.192

B. 255.255.255.224

C. 255.255.255.240

D. 255.255.255.248

Answer: Option **B**

You have a network that needs 29 subnets while maximizing the number of host addresses available on each subnet. How many bits must you borrow from the host field to provide the correct subnet mask?

A. 2

B. 3

C. 4

D. 5

Answer: Option **D**

If an Ethernet port on a router were assigned an IP address of 172.16.112.1/25, what would be the valid subnet address of this host?

A. 172.16.112.0

B. 172.16.0.0

C. 172.16.96.0

D. 172.16.255.0

Answer: Option **A**

You have an interface on a router with the IP address of 192.168.192.10/29. Including the router interface, how many hosts can have IP addresses on the LAN attached to the router interface?

A. 6

B. 8

C. 30

D. 32

Answer: Option **A**

What is the subnetwork number of a host with an IP address of 172.16.66.0/21?

A. 172.16.36.0

B. 172.16.48.0

C. 172.16.64.0

D. 172.16.0.0

Answer: Option **C**

The network address of 172.16.0.0/19 provides how many subnets and hosts?

A. 7 subnets, 30 hosts each

B. 8 subnets, 8,190 hosts each

C. 8 subnets, 2,046 hosts each

D. 7 subnets, 2,046 hosts each

Answer: Option **B**

You need to configure a server that is on the subnet 192.168.19.24/29. The router has the first available host address. Which of the following should you assign to the server?

A. 192.168.19.0 255.255.255.0

B. 192.168.19.33 255.255.255.240

C. 192.168.19.26 255.255.255.248

D. 192.168.19.31 255.255.255.248

Answer: Option **C**

You have an interface on a router with the IP address of 192.168.192.10/29. What is the broadcast address the hosts will use on this LAN?

A. 192.168.192.15

B. 192.168.192.31

C. 192.168.192.63

D. 192.168.192.127

Answer: Option **A**

You have a network with a subnet of 172.16.17.0/22. Which is the valid host address?

A. 172.16.17.1 255.255.255.252

B. 172.16.0.1 255.255.240.0

C. 172.16.20.1 255.255.254.0

D. 172.16.18.255 255.255.252.0

Answer: Option **D**

On a VLSM network, which mask should you use on point-to-point WAN links in order to reduce the waste of IP addresses?

A. /27

B. /28

C. /29

D. /30

Answer: Option **D**

To test the IP stack on your local host, which IP address would you ping?

A. 127.0.0.0

B. 1.0.0.127

C. 127.0.0.1

D. 127.0.0.255

Answer: Option **C**

If a host on a network has the address 172.16.45.14/30, what is the subnetwork this host belongs to?

A. 172.16.45.0

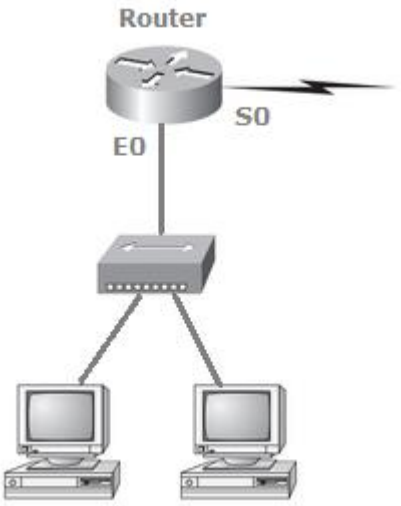
B. 172.16.45.4

C. 172.16.45.8

D. 172.16.45.12

Answer: Option **D**

Using the following illustration, what would be the IP address of E0 if you were using the eighth subnet? The network ID is 192.168.10.0/28 and you need to use the last available IP address in the range. The zero subnet should not be considered valid for this question.



A. 192.168.10.142

B. 192.168.10.66

C. 192.168.100.254

D. 192.168.10.143

E. 192.168.10.126

Answer: Option **A**

Which configuration command must be in effect to allow the use of 8 subnets if the Class C subnet mask is 255.255.255.224?

A. `Router(config)#ip classless`

B. `Router(config)#no ip classful`

C. `Router(config)#ip unnumbered`

D. `Router(config)#ip subnet-zero`

Answer: Option **D**

Using the illustration from the previous question, what would be the IP address of S0 if you were using the first subnet? The network ID is 192.168.10.0/28 and you need to use the last available IP address in the range. Again, the zero subnet should not be considered valid for this question.

A. 192.168.10.24

B. 192.168.10.62

C. 192.168.10.30

D. 192.168.10.127

Answer: Option **C**

What is the subnetwork address for a host with the IP address 200.10.5.68/28?

A. 200.10.5.56

B. 200.10.5.32

C. 200.10.5.64

D. 200.10.5.0

Answer: Option **C**

Which command would you place on interface connected to the Internet?

A. `ip nat inside`

B. `ip nat outside`

C. `ip outside global`

D. `ip inside local`

Answer: Option **B**

Which command will show you all the translations active on your router?

A. `show ip nat translations`

B. `show ip nat statistics`

C. `debug ip nat`

D. `clear ip nat translations *`

Answer: Option **A**

Which command would you place on interface on a private network?

A. `ip nat inside`

B. `ip nat outside`

C. `ip outside global`

D. `ip inside local`

Answer: Option **A**

Port Address Translation is also termed what?

A. NAT Fast

B. NAT Static

C. NAT Overload

D. Overloading Static

Answer: Option **C**

When creating a pool of global addresses, which of the following can be used instead of the `netmask` command?

A. `/` (slash notation)

B. `prefix-length`

C. `no mask`

D. `block-size`

Answer: Option **B**

Which of the following would be a good starting point for troubleshooting if your router is not translating?

A. Reboot.

B. Call Cisco.

C. Check your interfaces for the correct configuration.

D. Run the `debug all` command.

Answer: Option **C**

Which command will show you the summary of the NAT configuration?

A. `show ip nat translations`

B. `show ip nat statistics`

C. `debug ip nat`

D. `clear ip nat translations *`

Answer: Option **B**

Which of the following is considered to be the destination host before translation?

A. Inside local

B. Outside local

C. Inside global

D. Outside global

Answer: Option **B**

Which of the following is considered to be the address after translation?

A. Inside local

B. Outside local

C. Inside global

D. Outside global

Answer: Option **C**

Which are considered the methods of NAT?

Static

IP NAT pool

Dynamic

NAT double-translation

Overload

A. 1 and 6

B. 3 only

C. 1, 3 and 5

D. All of the above

Answer: Option **C**

Which command will allow you to see real-time translations on your router?

A. `show ip nat translations`

B. `show ip nat statistics`

C. `debug ip nat`

D. `clear ip nat translations *`

Answer: Option **C**

Which of the following would be good reasons to run NAT?

You need to connect to the Internet and your hosts don't have globally unique IP addresses.

You change to a new ISP that requires you to renumber your network.

You don't want any hosts connecting to the Internet.

You require two intranets with duplicate addresses to merge.

A. 1, 2 and 4

B. 2 and 4

C. 3 only

D. All of the above

Answer: Option **A**

Which of the following are advantages of using NAT?

Translation introduces switching path delays.

Conserves legally registered addresses.

Causes loss of end-to-end IP traceability.

Increases flexibility when connecting to the Internet.

Certain applications will not function with NAT enabled.

Reduces address overlap occurrence.

A. 1, 3 and 4

B. 3, 5 and 6

C. 5 and 6

D. 2, 4 and 6

Answer: Option **D**

Which of the following is considered to be the address before translation?

A. Inside local

B. Outside local

C. Inside global

D. Outside global

Answer: Option **A**

Which of the following are disadvantages of using NAT?

Translation introduces switching path delays.

Conserves legally registered addresses.

Causes loss of end-to-end IP traceability.

Increases flexibility when connecting to the Internet.

Certain applications will not function with NAT enabled.

Reduces address overlap occurrence.

A. 1, 3 and 5

B. 3 and 4

C. 2, 4 and 5

D. 1 and 3

Answer: Option **A**

Which of the following is considered to be the destination host after translation?

A. Inside local

B. Outside local

C. Inside global

D. Outside global

Answer: Option **D**

Which command will create a dynamic pool named Todd that will provide you with 30 global addresses?

A. `ip nat pool Todd 171.16.10.65 171.16.10.94 net 255.255.255.240`

B. `ip nat pool Todd 171.16.10.65 171.16.10.94 net 255.255.255.224`

C. `ip nat pool todd 171.16.10.65 171.16.10.94 net 255.255.255.224`

D. `ip nat pool Todd 171.16.10.1 171.16.10.254 net 255.255.255.0`

Answer: Option **B**

Which command will clear all the translations active on your router?

A. `show ip nat translations`

B. `show ip nat statistics`

C. `debug ip nat`

D. `clear ip nat translations *`

Answer: Option **D**