QUESTION 501
You are a technician at Certkiller . Your newly appointed Certkiller trainee wants to know what a router must determine in order to route data.
What would your reply be?

A. the route age of the next-hop device
B. the subnet mask of the source network
C. the cost metric of the path to the destination
D. the outbound interface of the best path to the destination

Answer: D

Explanation:
The router must know which interface that the data will be forwarded to. The other items listed are not used to determine if the router can route the data.
Chapter: 2

QUESTION 502
Which routing protocol does not have a hop count limit?

A. IGRP
B. OSPF
C. EIGRP
D. RIPv1
E. RIPv2

Answer: B

Explanation:
RIP has a maximum allowable hop count of 15 meaning a value of 16 is considered unreachable.
IGRP and EIGRP have a limit of 255 (100 by default).
Chapter: 2

QUESTION 503
You are the network administrator at Certkiller . Certkiller uses the RIPv2 routing protocol. Due to a dropped connection, your core router has not received an update from a neighboring router for four minutes and the route is marked invalid.
What is the next step for the core router?

A. It recalculates the network topology
B. It purges that link from its routing table
C. It places a hold-down on the routes from that link
D. An invalid timer is started

Answer: D

Explanation:
RIP versions 1 and 2 use timed updates to respond to changes in topology. Updates are sent every 30 seconds by all participating routers. If a neighbor does not respond for 180 seconds, the router assumes the link or neighbor is down. The router then marks the route as invalid and an invalid timer is started (180seconds). When the invalid timer expires, a hold-down time begins. During this period, the route is marked as possibly down and the metric is set and advertised with infinity. If a new route was received during the invalid or hold-down periods, the router begins advertising the new route. If not, a request is sent to neighbors for an alternate route to the destination. The last timer is the flush timer. It is activated when the invalid timer expires and last 60 seconds after the hold-down timer expires. When the flush timer expires (240 seconds), the route is finally deleted if no alternate route was found.
Chapter: 2

QUESTION 504
Which routing protocol provides support for load balancing over unequal cost paths?

A. IGRP
B. OSPF
C. RIPv1
D. RIPv2

Answer: A

Explanation:
IGRP and EIGRP provide support for load balancing via unequal cost paths using the variance command. In order for RIP to perform balancing, the hop count must be the same as RIP looks at hop count only when determining the best path to a destination. IGRP and EIGRP use a composite metric to determine the cost to a remote network. The variance command controls the load balancing between the best path and the worst acceptable path.
Chapter: 2

QUESTION 505
An LSA is used by which routing protocol to send topology change information across the network?

A. RIP
B. IGRP
C. OSPF
D. EIGRP

Answer: C

Explanation:
The OSPF routing protocol uses different types of LSA to send information to other OSPF routers. An OSPF router's link state database is comprised of LSA's Listed below are the five

types of LSA's used by the OSPF protocol:
LSA Type 1 Router link state
LSA Type 2 Network link state
LSA Type 3 Summary link state (type 3)
LSA Type 4 Summary link state (type 4)
LSA Type 5 External link state
Chapter: 2

QUESTION 506
Which of the following is a characteristic of link-state protocols?

A. A network topology change generates an update that is broadcast to every router on the network.
B. The periodic routing update interval is slightly different in each router on a subnet.
C. Each router creates a routing table that only includes its directly connected neighbors.
D. Link-state protocols send routing updates only when there is a change in the network topology.

Answer: D

Explanation:
One of the differences between distance-vector and link-state routing protocols is the way topology changes are conveyed across the network. Distance-vector protocols use periodic updates and send out complete routing tables. If a link goes down somewhere in the network, routers running only distance-vector protocols will not know about the change until the next update.
Link-state routing protocols send updates only when there is a topology change and the change is also included within the update. In addition, only the change is sent in the update. This means that each router does not have to rebuild its entire routing table with each update. The update is either added or removed from the routing table.
Chapter: 2

QUESTION 507
What is the term associated with synchronizing the routing tables after a topology change occurs?

A. flooding
B. broadcasting
C. convergence
D. summarization

Answer: C

Explanation:
Convergence is the time required for all routers on the network to agree on the network topology after a change has occurred. Simply stated, all routers synchronize the routing tables with the

same information.
Chapter: 2

QUESTION 508
Which of the following must be determined first by the router in order to route the data?

A. the distance metric of the data
B. the source address of the data
C. which routing protocol is used by the data
D. whether the protocol suite of the data is active

Answer: C

Explanation:
Before a routing decision can be made three major decisions must be made in the following order:
1) Is the logical destination address a known protocol and is the protocol active/enabled on the router?
2) Is the destination address in the routing table?
3) If the destination address is in the routing table, which interface will be used to forward the data?
Chapter: 2

QUESTION 509
You are a technician at Certkiller . Certkiller has the subnet/mask of 172.29.100.0/26 set aside for small remote locations. Each location will have 5 IP devices connected to the network.
Which VLSM mask will provide the minimum number of hosts you require?

A. /27
B. /28
C. /29
D. /30
E. /31

Answer: C

Explanation:
/29 mask is equal to 255.255.255.248 in decimal format. If 29 bits are used for the network portion of the address, then 3 bits are left for the host portion of the address. Once the reserved network and the broadcast addresses are removed, there are six usable addresses for hosts on the subnet. 2x2x2 = 8 minus network and broadcast address = 6 valid host addresses (Requirement from question is 5).
Chapter: 2

QUESTION 510
You are a trainee technician at Certkiller . Your instructor shows you the following route summarization entry:
192.168.134.0/22
Your instructor wants to know how many class C addresses are contained in this summarization.
What would your reply be?

A. 1
B. 2
C. 4
D. 8
E. 16

Answer: C

Explanation:
The valid class C addresses are:
192.168.134.0
192.168.135.0
192.168.136.0
192.168.137.0
Chapter: 2

QUESTION 511
Which two UDP ports are NOT enabled automatically when the ip helper-address command is used on a router? (Choose all that apply.)

A. 53 (DNS)
B. 69 (TFTP)
C. 515 (LPR)
D. 161 (SNMP)
E. 49 (TACACS)

Answer: C, D

Explanation:
By default, if an IP helper address is specified, UDP forwarding is enabled on certain ports.
Broadcast packets destined to the following port numbers are forwarded by default:
Trivial File Transfer Protocol (TFTP) (port 69)
Domain Naming System (port 53)
Time service (port 37)
NetBIOS Name Server (port 137)
NetBIOS Datagram Server (port 138)
Boot Protocol (BOOTP) client and server datagrams (ports 67 and 68)
TACACS service (port 49)

IEN-116 Name Service (port 42)
Chapter: 2

QUESTION 512
You are a technician at Certkiller . Your newly appointed Certkiller trainee wants to know what the benefit of hierarchical IP addressing is.
What would your reply be?

A. support for network address translation
B. efficient address allocation
C. translation of private addresses
D. support for link-state routing protocols

Answer: B

Explanation:
The only listed benefit of hierarchical IP address is efficient address allocation. Another major benefit in large enterprise networks is the reduced number of entries in the routing table. Combined with link-state routing protocols, overall CPU and memory requirements are reduced on deployed routers.
Chapter: 2

QUESTION 513
What entry would be used to summarize all the address space between 172.18.129.0 and 172.18.133.255?

A. 172.18.128.0/21
B. 172.18.128.0/22
C. 172.18.130.0/22
D. 172.18.132.0/20

Answer: A

Explanation:
172.18.128.0/21 is the only network/mask combination that will cover the entire listed range.
Using this network/mask, the valid subnets would be (partial listing):
172.18.0.0 172.18.104.0 172.18.208.0
172.18.8.0 172.18.112.0 172.18.216.0
172.18.16.0 172.18.120.0 172.18.224.0
172.18.24.0 172.18.128.0 172.18.232.0
172.18.32.0 172.18.136.0 172.18.240.0
172.18.40.0 172.18.144.0 172.18.248.0
172.18.48.0 172.18.152.0
172.18.56.0 172.18.160.0
172.18.64.0 172.18.168.0
172.18.72.0 172.18.176.0

172.18.80.0 172.18.184.0
172.18.88.0 172.18.192.0
172.18.96.0 172.18.200.0
Chapter: 2

QUESTION 514
With regard to route filtering, which of the following statements are true?

A. It uses the same technique as packet filtering; it's based on standard access-lists
B. It is required when using EIGRP and OSPF at the same time
C. Unlike packet filtering (which uses inverted subnet masks, route filtering uses normal subnet masks
D. Route filtering is used only while performing route redistribution

Answer: A

Explanation:
Routes can be filtered so that only a subset of routes can be advertised or received. Two configuration commands are necessary to filter a route. First, a standard access list is created that specifies which networks are allowed/denied. Second, the distribute-list command is configured for the routing protocol.
!
access-list 2 permit 192.168.1.0 0.0.0.255
access-list 2 permit 192.168.2.0 0.0.0.255
!
router eigrp 100
distribute-list 2 in
!
Chapter: 2

QUESTION 515
Which of these are benefits of incorporating hierarchical addressing?

A. You can summarize multiple routes into a single route summaries, making the network more scaleable
B. A contiguous address assignment allows the most efficient use of address
C. Reduction in the number of routing table entries for participating routers
D. A more efficient allocation of addresses network-wide

Answer: B, C, D

Explanation:
Incorporating hierarchical and contiguous addressing minimizes the number of wasted addresses, reduces the number of entries in routing tables (summarizing), and simplifies network design and administration.
Chapter: 3

QUESTION 516
How can a single IP statement indicate many IP addresses?

A. Source-route bridge
B. Route summarization
C. Helper address
D. Default gateway
E. Passive interface

Answer: B

Explanation:
A single IP network entry can represent multiple subnets using route summarization and VLSM. Classless routing protocols carry/distribute the mask information when managing routing tables and sending updates to topology changes.
Chapter: 3

QUESTION 517
What is NOT a reason reasons makes OSPF a better and/or more efficient routing protocol over RIP?

A. OSPF can select paths based on bandwidth
B. Link-State protocols generally have faster convergence than Distance-Vector
C. OSPF sends its topology database to configured neighbors on a regular basis to ensure that all routers have the same view of the network
D. OSPF supports VLSM
E. OSPF has no hop count limitation because it is based on path cost

Answer: C

Explanation:
RIP periodically (60 seconds) broadcasts its entire routing table to all routers in the network. RIP also employs a series of timers that must expire before alternate routes can be discovered or routes removed in the event of a link failure. These are considered drawbacks to distance-vector protocols as it increases the time for the network to convergence.
Chapter: 3

QUESTION 518
With regard to EIGRP, which of the following are true?

A. It only sends change-updates to the systems that are affected by the event
B. It can provide client address conflict resolution
C. It is considerably more complex than OSPF
D. It supports Variable Length Subnet Masking
E. It supports compression over the WAN link

Answer: A, D

Explanation:
EIGRP is considered an advanced distance-vector routing protocol. EIGRP uses the DUAL (Distributed Update Algorithm) to ensure that updates and queries are not propagated beyond affected routers. EIGRP is also a classless routing protocol meaning that the network mask information is retained and advertised by the protocol. By default, EIGRP advertises the natural classful network boundary for all EIGRP internal routes. This behavior can be modified using the no auto-summary command and EIGRP will leave the network mask unchanged.
!
router eigrp 93
no auto-summary
!
Chapter: 3

QUESTION 519
Which of the statements below correctly describes the BGP regular expression ^200_[0-9]*$?

A. Matches AS path 200 only
B. Matches all AS's
C. Matches AS path that is originated in AS 200 regardless of location
D. Matches AS path that is originated in AS 200 and AS's that are directly connected to AS 200

Answer: D

Explanation:
You can use regular expressions in the ip as-path access-list command with BGP. This allows you to setup filters to allow incoming and outgoing updates based on the BGP autonomous system paths. In the example above, the ^ starts the input string and designates "AS". The _ signifies a null string or space follows 200 and [0-9]*$ indicates that any connected AS with a valid AS string can pass the filter. The $ matches the end of the input string.
Chapter: 3

QUESTION 520
You are a technician at Certkiller . Your newly appointed Certkiller trainee wants to know what a BGP peer is.
What would your reply be?

A. A BGP neighbor that the router has formed a TCP connection with
B. Another BGP router that the router is currently speaking with
C. Another router on the network running BGP
D. A BGP neighbor with a broken TCP connection

Answer: A, B

Explanation:
If BGP cannot establish the TCP connection with its specified neighbor, the routers are not considered to be peering and thus not peers. A peering relationship only exists between routers that explicitly identify other routers as neighbors. BGP does not "auto-discover" neighbors as other routing protocols such as EIGRP.
Chapter: 3

QUESTION 521
With regard to BGP, which of the following statements are true?

A. iBGP is used between the AS
B. iBGP is used within the AS
C. eBGP is used between the AS
D. eBGP is used within the AS

Answer: B, C

Explanation:
Internal BGP (iBGP) sessions are contained within the autonomous system. The active session is between routers with the same AS number.
External BGP (eBGP) sessions are connections between two different autonomous systems. The active session is between routers with different AS numbers.
Chapter: 3

QUESTION 522
OSPF stub or totally stubby Areas can only exist if adjacent to which of the following?

A. LSA
B. LSP
C. BDR
D. ABR
E. DR
F. LSU

Answer: D

Explanation:
There are only two possible answers - BDR and ABR. The function of the BDR is not directly related to stub or stubby areas. The BDR is a hot standby for the DR and would assume the role of the DR in the event the DR failed. The purpose of a DR is to minimize the number of adjacencies formed and disseminate/receive routing updates throughout the network. An ABR has multiple area assignments and two or more interfaces in two or more areas. An ABR would be used to connect a stub or totally stubby area to the rest of the network.
Chapter: 3

QUESTION 523
You are the network administrator at Certkiller . You stop sending RIP broadcasts from all router interfaces that do not require it. You notice that RIP is broadcasting on Ethernet0, Serial0, and Serial1 on the router in question. You determine that Serial0 does not need to participate in RIP updates.
What command would you use to disable RIP on this interface?

A. Configure RIP using the 'passive interface' command
B. Configure RIP using the 'no router rip' command
C. Configure Serial0 using the 'shutdown rip' command
D. Configure the serial interface using the passive interface command

Answer: A

Explanation:
The passive interface would be defined in the RIP configuration as follows:
!
router rip
network 192.168.1.0
passive interface serial 0
!
Chapter: 3

QUESTION 524
Why will an EIGRP route get stuck in the Active state?

A. The EIGRP router on the far end of the link has crashed
B. The reply to a query caused by a change in a route takes too long and times out
C. The physical link between the two AS's has gone down
D. The network is unstable and probably has a routing loop

Answer: B

Explanation:
EIGRP sends out queries to neighbors when it detects a change in topology. In some situations, the response to the query could be delayed longer than the router issuing the query is willing to wait. When this happens, the route in question is stuck in the active state. This means that EIGRP is manipulating the route and cannot route data to the remote network. Eventually, the router sending the query will give up and clear its connection with the neighbor. This can be caused by slow links, bad connections, dropped packets, or an overloaded router.
Chapter: 3

QUESTION 525
You are a technician at Certkiller . Your newly appointed Certkiller trainee wants to know what the most effective method is to reduce large routing tables.
What would your reply be?

A. Route filters
B. CIDR summary blocks
C. Compression
D. Switching

Answer: B

Explanation:
The only valid choice is to use CIDR (Classless Interdomain Routing) summaries whenever possible. With CIDR, masks in address space are grouped together to form one update. The lack of midsize address space (between a Class C and Class B), the growth of the Internet routing tables, and the eventual exhaustion of the 32-bit IP address space all fueled the creation of CIDR.
Chapter: 3

QUESTION 526
You are a technician at Certkiller . You need to create filter for EIGRP network 198.30.64.0/24.
What mask should be used to create the filter?

A. 0.0.0.255
B. 0.0.255.255
C. 255.255.1.0
D. 255.255.254.0

Answer: A

Explanation:
A distribution list is used to block (filter) routing updates or queries and relies on an access-list to match the criteria. The configuration commands are listed below to allow only route information for the 198.30.60.0/24 network:
!
router eigrp 1
network 198.30.64.0
distribute-list 2 in
!
access-list 2 permit 198.30.64.0 0.0.0.255
Chapter: 3

QUESTION 527
Which of the following best describes a Type 3 or 4 LSA?

A. Summary link entry which shows routing tables as IA for OSPF inter-area
B. Autonomous System External type-1 which shows in routing tables as 'E1' for OSPF External-1
C. Network link entry that shows in routing tables as '0' for OSPF

D. Router link entry/record which show in routing tables as '0' for OSPF

Answer: A

Explanation:
Type 3 and 4 LSA's are generated by ABR's and sent to all routers within an area. These type LSA's advertise intra-area routes to the backbone area and both intra-area and inter-area routes to non-backbone areas.
Chapter: 3

QUESTION 528
You are a technician at Certkiller . Your newly appointed Certkiller trainee wants to know how long OSPF will wait after receiving no updates before it sends a new LSA.
What would your reply be?

A. 10 minutes
B. 20 minutes
C. 30 minutes
D. 1 hour

Answer: C

Explanation:
The fixed OSPF constant "Link State Refresh" is defined as the maximum amount of time between distinct origination of the same LS
A. When the LSA age reaches this interval, the router
must originate a new instance of the same LSA, keeping everything the same. The value of this constant is 30 minutes.
Chapter: 3

QUESTION 529
By default, how does BGP handle IGP routes?

A. BGP automatically redistributes all IGP routes
B. BGP advertisements are independent of IGP route propagation
C. BGP must wait until the IGP has propagated routing information across the autonomous system
D. BGP can immediately advertise routes without waiting until the IGP has propagated information across the autonomous system

Answer: C

Explanation:
BGP synchronization rules dictate when traffic from a different AS passes through an AS to a third AS, BGP will not advertise the route until all routers within the AS have learned of the of

the route through IGP.
Chapter: 3

QUESTION 530
What methods does EIGRP use to determine if a previous neighbor is dead?

A. Unicast
B. Hold Time
C. Multicast
D. Broadcast

Answer: B, C

Explanation:
EIGRP multicasts hello packets to all neighbors at regular intervals (5 or 60 seconds). Every neighbor must send these hello packets. By default, if three consecutive hello packets are not received, the hold time expires and the neighbor is declared dead.
Chapter: 3

QUESTION 531
Select the valid subnet number and broadcast address combinations for mask /26:

A. Subnet 10.0.0.128, broadcast 10.0.0.192
B. Subnet 10.0.0.64, broadcast 10.0.0.127
C. Subnet 10.0.0.128, broadcast 10.0.0.191
D. Subnet 10.0.0.0, broadcast 10.255.255.255

Answer: B, C

Explanation:
If 26 bits are used for the network portion of the address, then 6 bits are used in the mask portion. 2x2x2x2x2x2 = 64 addresses per subnet. The broadcast address is always the all 1's address or the last address within the subnet.
Subnet 10.0.0.0 broadcast 10.0.0.63
Subnet 10.0.0.64 broadcast 10.0.0.127
Subnet 10.0.0.128 broadcast 10.0.0.191
Subnet 10.0.0.192 broadcast 10.0.0.255
Chapter: 3

QUESTION 532
Policy-Based routing has which of these criteria?

A. Can Deny based on subnet mask
B. Can Deny based on RIP version
C. Can Match based on the IP address
D. Can Match based on Next Hop address

Answer: C

Explanation:
Policy-based routing relies on standard or extended access list to define the traffic matching criteria. Using standard or extended access lists, we cannot match subnet mask, RIP version, or next hop address. IP addresses can easily be matched using access lists.
Chapter: 3

QUESTION 533
Which of the following BGP Path Attributes (metrics) is a proprietary enhancement?

A. Community
B. Origin
C. Aggregator
D. Weight

Answer: D

Explanation:
The weight attribute is a Cisco proprietary attribute used for path selection. This allows as administrator to "prefer" one path over one or more paths to the same destination.
Chapter: 3

QUESTION 534
Which of the following are needed for an OSPF to form an adjacency?

A. Autonomous System Number
B. Area ID
C. Hello and Dead intervals
D. Stub Area Flag

Answer: C

Explanation:
In order to form an adjacency hello packets are exchanged. All routers connected to a common network must agree on all the parameters from the hello packet listed below:
Network Mask
Hello Interval
Dead Interval
Neighbor
Chapter: 3

QUESTION 535
Which of the following correctly describes an OSPF Area Border Router?

A. It is used to connect various OSPF Areas
B. It is used only at the outside edge of an OSPF network for protocol translation
C. It is used only internally for OSPF to EIGRP redistribution
D. It is used for routing protocol redistribution

Answer: A

Explanation:
An ABR is defined as having multiple area assignments and two or more interfaces in two or more areas. An ABR would be used to connect a different, stub or totally stubby area to the rest of the network.
Chapter: 3

QUESTION 536
You are a technician at Certkiller . You are troubleshooting a problem on the Certkiller network. You issue the debug ip ospf adj command. Your newly appointed Certkiller trainee wants to know what the purpose of this command is.
What would your reply be?

A. LSA type 1
B. Elections
C. LSA type 3 and 4
D. OSPF neighbor relationships

Answer: D

Explanation:
The output from this command can be very useful in troubleshooting neighbor relationships. A sample output from the command is listed below:
Router#debug ip ospf adj
OSPF: Receive dbd from 70.70.70.70 seq 0x14B
OSPF: 2 Way Communication to neighbor 70.70.70.70
OSPF: send DBD packet to 192.16.64.2 seq 0x1797
OSPF: Receive dbd from 70.70.70.70 seq 0x1797
OSPF: NBR Negotiation Done We are the MASTER
OSPF: send DBD packet to 192.16.64.2 seq 0x1798
OSPF: Database request to 70.70.70.70
OSPF: sent LS REQ packet to 192.16.64.2, length 12
OSPF: Receive dbd from 70.70.70.70 seq 0x1798
OSPF: send DBD packet to 192.16.64.2 seq 0x1799
OSPF: Receive dbd from 70.70.70.70 seq 0x1799
OSPF: Exchange Done with neighbor 70.70.70.70
OSPF: Synchronized with neighbor 70.70.70.70, state:FULL
OSPF: Build router LSA, router ID 172.16.13.1
Chapter: 3]

QUESTION 537
What are BGP routers with the same AS number exchange information known as?

A. BGP
B. eBGP
C. IGRP
D. iBGP

Answer: D

Explanation:
Internal BGP (iBGP) sessions are contained within the autonomous system. The active session is between routers with the same AS number.
External BGP (eBGP) sessions are connections between two different autonomous systems. The active session is between routers with different AS numbers.
Chapter: 3

QUESTION 538
BGP falls into which routing protocol category below?

A. Link-state protocol
B. Interior gateway protocol
C. Exterior gateway protocol
D. Distance-Path state protocol

Answer: C

Explanation:
BGP is an EGP (Exterior Gateway Protocol used to connect and find routes to/from autonomous systems.
Chapter: 3

QUESTION 539
Which of the following is untrue of routers running internal BGP?

A. Routers are running iBGP when two BGP speakers are in different AS's
B. They must form a TCP port 179 connection with each other
C. They do not have to be directly connected
D. Routers are running iBGP when two BGP speaking routers are in the same AS

Answer: A

Explanation:
Internal BGP (iBGP) sessions are contained within the autonomous system. The active session is between routers with the same AS number.
External BGP (eBGP) sessions are connections between two different autonomous systems. The

active session is between routers with different AS numbers.
Chapter: 3

QUESTION 540
Which of the following are true of a network design with a high number of OSPF routers in a single area?

A. Increased problems with routing table 'black holes'
B. Increased SPF algorithm re-calculation times
C. Decreased OSPF update traffic overhead
D. Increased OSPF update traffic overhead

Answer: B, D

Explanation:
SPF path re-calculation times are increased as more routers (and paths) are added to the network. In addition, as more routers and paths are added additional LSA's must be generated for each network and summary that exists within the area.
Chapter: 3

QUESTION 541
Which of these values is required by EIGRP as a Seed Metric when performing Route Redistribution?

A. Bandwidth, Delay, Reliability, Load, MTU
B. Cost, Delay, Reliability
C. Route-Tag
D. Cost

Answer: A

Explanation:
When redistributing routes into IGRP or EIGRP, the bandwidth, delay, reliability, load and MTU (maximum transmission unit) must be specified.
!
router eigrp 91
network 10.10.108.0.
redistribute static
redistribute rip
default-metric 10000 100 255 1 1500
Chapter: 3

QUESTION 542
With regard to an OSPF internal router, which of the following statements are true?

A. Internal routers are in more than one area

B. At least one interface is in Area 0
C. All interfaces are in the same Area
D. Internal routers redistribute routing information with routers in other areas

Answer: C

Explanation:
An internal OSPF router is defined by having all its interfaces members of the same area.
Chapter: 3

QUESTION 543
What is the inverted wildcard mask of /26?

A. 63.255.255.255
B. 0.0.0.63
C. 192.255.255.255
D. 0.0.0.192

Answer: B

Explanation:
The regular dotted decimal format of a /26 prefix is represented as: 255.255.255.192 or 11111111.11111111.11111111.1100000.
To get the wildcard mask, use 256-192=64, which is the block size of the subnet mask. The wildcard mask is always one less then the block size or 63 in this case. A wildcard of zero (0) means all networks bits are on. So the answer is 0.0.0.63.
Chapter: 3

QUESTION 544
You are the network administrator at Certkiller . You attempt to start an OSPF process on Router CK1 but you receive an 'Unable to allocate router ID' error.
What could be the cause of this problem?

A. The OSPF area is Stubby
B. No IP address assigned to any interface
C. Router ID is used by another router
D. All interfaces are shut down

Answer: B, D

Explanation:
When OSPF is enabled on a router, the loopback interface IP address is used to assign the Router ID by default. If the loopback interface is not configured, then the highest IP address of all interfaces is assigned as the Router ID. At least one interface must be active/enabled and configured with an IP address to enable OSPF.
Chapter: 3

QUESTION 545
Which types of LSA's are passed into a Totally Stubby Area?

A. Summary Type 3
B. Summary Type 4
C. Router Link Advertisement Type 1
D. External Link Advertisement Type 5

Answer: C

Explanation:
Only possible answer might be C. Type 3, 4 and 5 are all blocked from going into a Totally stubby area. So only intra-area and default.
Source: BSCI Self Study Cisco Press (2003) 2nd Edition, P190

QUESTION 546
With regard to Route Reflectors, which of the following are true?

A. The increase the size of the BGP routing table
B. They enable the use of Route Summarization
C. They reduce the number of TCP sessions
D. A route reflector cannot propagate iBGP routes to iBGP peers.

Answer: C

Explanation:
One of the major reasons route reflectors are deployed is to relieve the iBGP full-mesh requirement. The BGP split-horizon rule is modified by route reflectors. It is modified by allowing a route reflector to be the only router that propagates routes learned by iBGP to other iBGP peers.
Chapter: 3

QUESTION 547
Among these methods of sending an IGP route into BGP, which is not recommended?

A. Redistribute the IGP into BGP
B. Use the network command with the 'mask' option
C. Redistribute BGP into the IGP
D. Use the network command without the 'mask' option

Answer: A

Explanation:
Redistribution can cause routing loops and route flapping. In addition, BGP actually pulls information that other IGP's have learned about their environment. BGP handles the translation

of one protocol to another if multiple routing protocols are used in the AS.
Chapter: 3

QUESTION 548
Which of the following are reasons a network administrator would choose to run multiple routing protocols at the same time on the same network?

A. Reduce routing protocol overhead on the network
B. Optimize the route redistribution between areas
C. Convert from an older routing protocol to a more modern one
D. Acquisition of a company running a different routing protocol than your own

Answer: C

Explanation:
In general, multiple routing protocols are not needed simultaneously on the same network. However, when migrating to a new routing protocol, this is a good methodology as migration configurations can be tested without affecting existing traffic.
Chapter: 3

QUESTION 549
You are a technician at Certkiller . Certkiller has a BGP network. Your newly appointed Certkiller trainee wants to know when BGP is not suitable for use.
What would your reply be?

A. Routing policy and route selection are not important for your AS
B. A single connection to the Internet
C. When you need to perform load-sharing to multiple ISP's simultaneously
D. Low bandwidth between your AS and the other AS

Answer: A, C, D

Explanation:
"B" " A single connection to the Internet" is suitable for BGP. According to this Question, "ACD " is correct , because these are unsuitable responses to this Question.

QUESTION 550
Which command can be used to view the state of the link, such as exstart, exchange, or full?

A. show ospf neighbor
B. show ip protocols
C. show ip ospf neighbor
D. show ospf interface

Answer: C

Explanation:
Answer D lists the state of the DR on the interface. Answer C shows all information about all OSPF neighbor routers including the state.
router2#show ip ospf neighbor
Neighbor ID Pri State Dead Time Address Interface
170.170.5.1 1 INIT/- 00:00:34 170.170.1.1 Serial0
router-2#
Chapter: 3

QUESTION 551
Which routing protocol features provide solutions to the problems associated with very large routing tables?

A. Filtering
B. Data Compression
C. Route summarization
D. Incremental updates

Answer: C, D

Explanation:
Route summarization reduces the number of entries in the routing tables. Incremental updates only send information about the network topology that has changed. Both of these features free up resources on routers, and bandwidth on the network.
Chapter: 3

QUESTION 552
What is the router command to diagnose and display the entire route, including delays, given the path to a destination?

A. routepath
B. routetrace
C. pathtrace
D. traceroute

Answer: D

Explanation:
The traceroute command provides each hop and delay information about the path to a destination.
Chapter: 3

QUESTION 553
You are the network administrator at Certkiller . You configure a static route on router running EIGRP. Your newly appointed Certkiller trainee wants to know what the default

administrative distance of this static route would be.
What would your reply be?

A. 255
B. 5
C. 1
D. 90

Answer: C

Explanation:
Static routes are assigned a default administrative distance of 1.
Chapter: 3

QUESTION 554
With regard to an OSPF backbone router, which of the following statements is true?

A. It redistributes routing information with routers in other areas
B. All backbone routers must be in more than one area
C. At least one interface is in Area 0
D. All interfaces are in the same Area

Answer: C

Explanation:
A backbone router has at least one interface in the backbone area.
Chapter: 3

QUESTION 555
Which of these packet types does an OSPF router use at bootup to receive information?

A. SPF
B. LCP
C. Flood
D. Hello

Answer: D

Explanation:
OSPF uses hello packets to build adjacencies when OSPF is enabled on a router or when a router boots up with OSPF already configured.
Chapter: 3

QUESTION 556
You are a technician at Certkiller . You reboot the existing DR. This results in the BDR being promoted to DR.

With regard to this scenario, which of the following statements are true?

A. Upon boot of the old DR, the newly elected DR will automatically demote itself back to BDR
B. When the old DR comes back online, it will send out an LSA to override the new DR
C. The newly elected OSPF DR will remain DR even when the old DR comes back on-line
D. Upon boot of the old DR another election will occur

Answer: C

Explanation:
Once a DR and BDR have been elected, the DR/BDR is sent to all routers via hello packets. In this case, the existing DR is rebooted and the BDR is promoted to DR and a new BDR is elected. When the previous DR comes back on-line, it accepts the newly promoted/elected DR/BDR that is received in the hello packets.
Chapter: 3

QUESTION 557
Which of the following supports multiple routed protocols?

A. IP
B. OSPF
C. BGP
D. EIGRP
E. IGRP

Answer: D

Explanation:
One of the enhancements to EIGRP from IGRP is its support for all major Layer 3 routed protocols. EIGRP supports IP, IPX, and AppleTalk. All of the other routing protocols listed provide support for routing IP only.
Chapter: 3

QUESTION 558
You are a technician at Certkiller . Your newly appointed Certkiller trainee wants to know what the BGP MED attribute is used for.
What would your reply be?

A. Setting the route maps peer ID
B. Setting IGP synchronization
C. Setting the route reflectors peer ID
D. Setting a preferred return-pathway back into the originating AS

Answer: D

Explanation:

The MED attribute in BGP is used to indicate the best entry point or path to reach a particular destination to a neighboring AS. A lower MED is preferred over a higher MED. The MED attribute is also non-transitive because the AS does not pass the MEDs it learns from one AS to another.
Chapter: 3

QUESTION 559
With regard to RIPv1, which of the following statements are true? (Choose all that apply.)

A. Maximum hop count is 16
B. Update interval is 90 seconds
C. Update interval is 30 seconds
D. VLSM is not supported
E. Maximum hop count is 15

Answer: C, D, E

Explanation:
Answer A is tricky as the maximum allowable hop count is 15. If the hop count is set to 16 (infinity), the destination is considered unreachable. The RIP periodic update interval is 30 seconds.
Chapter: 3

QUESTION 560
How does the command 'ip bandwidth-percent eigrp' set EIGRP maximum bandwidth allocation?

A. On a per AS basis
B. On a per packet basis
C. On a per interface basis
D. Globally for all IGRP and EIGRP AS's on the router

Answer: C

Explanation:
This command is applied to an interface to set the maximum amount of bandwidth to be used on an interface for EIGRP traffic.
Chapter: 3

QUESTION 561
Which of the following are possible reasons that EIGRP might not make an adjacency to a neighbor router?

A. Both routers are not running DUAL
B. Hop counts do not match on both routers
C. The feasible successor is still in the Hello state

D. Update packets have not been sent

Answer: D

Explanation:
When EIGRP begins making adjacencies, it multicasts hello packets out an interface(s). The neighbors become adjacent when they acknowledge each others hello packets and their K values match.
Chapter: 3

QUESTION 562
With regard to OSPF, which of the following statements are correct? (Choose all that apply)

A. OSPF computes cost based on the interface's bandwidth setting
B. OSPF is not limited to a hop count metric
C. OSPF uses LSA packets instead of broadcasts
D. OSPF sends the complete routing table inside of each LSA packet

Answer: A, B, C

Explanation:
OSPF does not send its complete routing table inside each LS
A. An LSA is sent for each
network that is included in the routing process.
Chapter: 3

QUESTION 563
All BGP routers belong to which of these communities by default?

A. no-export
B. classless
C. Internet
D. no-advertised

Answer: C

Explanation:
All routers by default belong to the "Internet" community and can be used to advertise routes to all other routers. No-export tags the routes so that it will not be sent outside the AS. The Noadvertise tag will prevent the route from being advertised to any other BGP router. Classless is not a valid BGP community.
Chapter: 3

QUESTION 564
Which Administrative Distances listed below are correct? (Choose all that apply)

A. BGP=20
B. Static Route=1
C. External IGRP=170
D. EIGRP=120
E. Summary EIGRP=5

Answer: A, B, E

Explanation:
Administrative distances are used to rate the reliability or trustworthiness of a route. Connected interfaces are assigned a value of 0, and static routes assigned a value of 1. These two are the most "trusted" routes, while an administrative distance of 255 indicates the route will never be used. Different routing protocols are assigned different values and can have different values for different types of routes for each protocol (internal, external and summary). Choice C is incorrect because IGRP does not distinguish between internal and external routes. EIGRP is assigned a default administrative distance of 90 not 120 as specified in choice D.
Chapter: 3

QUESTION 565
With regard to RIPv1, which of the following statements are true? (Choose all that apply.)

A. rip v.1 route updates include a subnet mask field.
B. rip v.1 is considered a "classful" routing protocol.
C. rip v.1 is considered a "classless" routing protocol.
D. rip v.1 route updates do not include a subnet mask field.

Answer: B, D

Explanation:
Ok, set the "wayback" machine to the first day of networking class. On that day, we learned some interesting things about routing protocols and their behaviors. We know RIP v.1 is a "distance vector" routing protocol that relies on "hop count" for pathing decisions. We also know that RIP v.1 is a "classful" routing protocol, which means that it "observes" address class boundaries. When you advertise a network, using the "network" command, you are not given an opportunity to enter a subnet mask. RIP is going to assume the default mask for that address class (255.0.0.0 for a Class "A", 255.255.0.0 for a Class "B" and so on). RIP does NOT include subnet masks in its routing updates. Only a classless routing protocol like OSPF would need to furnish that kind of information.
Router(config)#router rip
Router(config-router)#network 192.168.1.10
Router(config-router)#network 192.168.2.10
Router(config-router)#network 192.168.3.10
Router(config-router)#^Z
Router#
Chapter: 4

QUESTION 566
Which two routing protocols will most likely be used in a network with limited scalability in mind?

A. IGRP
B. OSPF
C. EIGRP
D. RIPv2
E. RIPv1

Answer: A, E

Explanation:
This should be a relatively easy one to answer since there are only two "classful" routing protocols in the list of possible answer choices. Due to the fact that RIP v1 summarizes all known routes along classful network boundaries, using VLSM (Variable Length Subnet Mask)to extend your addressing scheme is out of the question. RIP limits network scalability thanks to its classful nature and its need to send updates every 30 seconds. Imagine how long it would take a network of 200+ routers to converge with RIP sending updates every 30 seconds.
Chapter: 4

QUESTION 567
You are a technician at Certkiller . Certkiller has an OSPF network. Your newly appointed Certkiller trainee wants to know what he benefits of running a "link-state" protocol like OSPF are.
What would your reply be? (Choose all that apply.)

A. link-state protocols maintain a central network topology database
B. link-state protocols react quickly to topology changes.
C. link-state protocol updates are sent out every 30 seconds regardless of topology change
D. link-state protocols use very little bandwidth in a stable network.

Answer: A, B, D

Explanation:
Link-state routing protocols like OSPF maintain a central network topology database that is built during convergence. They also react quickly to topology changes. If a router's interface goes down, that information is sent out at once in the form of an LSA (Link-State Advertisement), which informs the other routers of the change. Link-state routing protocols like OSPF (starting to notice a theme here?) use very little bandwidth as their routing updates are "incremental" in nature and only advertise which part of the network has changed. This behavior is the opposite of RIP, which sends a complete copy of its routing table with every update.
Chapter: 4

QUESTION 568
The BGP routing protocol maintain which two types of tables?

A. IP
B. BGP topology
C. BGP attributes
D. BGP information sent to and received from other BGP routers
E. shared table that combines UDP and BGP route information

Answer: A, D

Explanation:
The BGP routing protocol maintains two sets of tables, an IP table and a table composed of BGP information sent to and received from other BGP routers. The information in these tables is by default maintained separately, however you can configure the router to share the information if you so desire.
Chapter: 4

QUESTION 569
If you want a permanently created static route entry picked up by the routing process, what command would you use?

A. static insert
B. static announce perm
C. static redistribute
D. redistribute static

Answer: D

Explanation:
When you create a static route that is not included in the list of the networks advertised by the IOS "network" command, it will not be picked up/learned/injected into the routing protocol unless you specifically advertise it. This feat is accomplished through the use of the "redistribute static" command.
Chapter: 4

QUESTION 570
BGP peers communicate via which method?

A. RIP
B. TCP
C. UDP
D. ICMP

Answer: B

Explanation:
BGP peers communicate via TCP port 179. The peers initiate a TCP session in which they exchange a series of "OPEN" messages, which ultimately forms the connection. The newly formed connections are kept active by exchanging "KEEPALIVE" messages. Once all this has been completed, the peers exchange routing table, and periodic incremental updates.
Chapter: 4

QUESTION 571
What BGP is considered to be?

A. both an internal and external routing protocol
B. an internal routing protocol only
C. an external routing protocol only
D. an independent routing protocol

Answer: A

Explanation:
BGP is truly a magical thing! It runs as both an internal routing protocol (iBGP) within the AS and an external routing protocol (eBGP) between ASes. When BGP is used internally (iBGP) its routing duties do not leave the confines of the AS. iBGP learns of new routes within the AS and passes these updates to eBGP peers for distribution. eBGP learns and distributes routes between different ASes.
Chapter: 4

QUESTION 572
What does BGP "ingress filtering" allows you to do?

A. allows filtering of data packets based on protocol type
B. allows you to decide which routes will be accepted from peers or neighbors
C. allows you to decide which routes will be advertised to peers or neighbors
D. allows filtering of data packets based on protocol number

Answer: B

Explanation:
AAPT has deployed "ingress filtering" on all customer, peer and provider links. This means that filters will be installed to prevent traffic sourced from customer networks not registered for routing with AAPT from entering the AAPT network and will thus prevent this traffic from entering the networks of our peers and providers via AAPT

QUESTION 573
BGP communities perform what function?

A. they group routes into a single administrative control group
B. they delete routes based on administrative control group names

C. they restrict routes based on network class
D. they allow routers to filter incoming or outgoing BGP routes

Answer: D

Explanation:
BGP communities allow a router a more effective way to filter BGP route updates than would be possible using distribute lists and prefix lists. A BGP community is a tag that is applied to a route update indicating a destination route (or other common attribute) that is shared with other routes. The router can therefore make pathing decisions based on the commonality of a group of updates as opposed to individually assessing each route.
Chapter: 4

QUESTION 574
You are the network administrator at Certkiller . You are logged into the ASBR in Area 0 (backbone). You want to advertise the address class 192.168.1.0.
Which of the following commands will make that route available to routers outside the area?

A. network 192.168.1.0 0.0.0.255 area 0
B. network 192.168.1.0 255.255.255.0 area 0
C. adv address 192.168.1.0 255.255.255.0
D. adv address 192.168.1.0 0.0.0.255

Answer: A

Explanation:
This should have been another easy one to answer. Since the "adv address" command is not used to advertise networks, you should have been able to exclude the answers that used it. That left us with the two commands containing the "network" command. One of the network commands uses a standard subnet mask "255.255.255.0" and one uses a "reverse" or "wildcard" mask. The "network" command uses the "wildcard" mask to indicate how far into the class it should advertise. The correct answer is "network 192.168.1.0 0.0.0.255 area 0"
Chapter: 4

QUESTION 575
Which of the following is NOT a type of OSPF Area?

A. Normal
B. Stub
C. Totally Stub
D. Not-So-Stubby
E. Not-So-Normal

Answer: E

Explanation:
There are only four OSPF area types (according to Cisco) and they are stub, totally stub, not-sostubby and normal. The answer "Not-So-Normal" is the made up one.
Chapter: 4

QUESTION 576
With regard to VLSM, which of the following statements are true? (Choose all that apply.)

A. the area number must be carried with the routing update
B. the addresses being summarized must be classful in nature
C. the subnet mask is carried with the routing update
D. addresses being summarized must contain the same "high-order" bits

Answer: C, D

Explanation:
Variable Length Subnet Masking or VLSM gives the router the ability to announce a series of addresses with a single routing table entry. Pretty neat trick huh?
The way that is does this, is it looks at the addresses and ascertains which of those addresses are similar out to a designated bit pattern, also known as "high-order bits". It then looks at the subnet mask accompanying the update and decides which series of addresses are considered matches. You could potentially advertise as many as five destination addresses with a single routing table entry.
Chapter: 4

QUESTION 577
You are a technician at Certkiller . You are designing a multi-area OSPF network.
What two things must you do?

A. make sure that each area connects to the backbone (Area 0).
B. assign each area a unique number
C. configure Areas 1-4 as Stub Areas
D. configure Areas 1-4 as Not-So-Stubby Areas

Answer: A, B

Explanation:
Creating a multi-area OSPF network requires a few design considerations such as, all areas must have a connection to Area 0 so that routing updates will have a central distribution point, all created areas must have a unique area number (that one is kind of obvious) to prevent routing updates from being confused by the fact that two areas are using the same number.
Chapter: 4

QUESTION 578
What function does the "area range" command perform?

A. instructs the ABR to summarize the routes for a specific area before advertising them
B. instructs the ABR to segregate the routes for a specific area before advertising them
C. specifies a range of areas to advertise exclusively
D. specifies a range of areas to observe and report the routing status

Answer: A

Explanation:
The "area range" command instructs the ABR to summarize the addresses within the area before sending them out in a routing update.
Chapter: 4

QUESTION 579
You are a technician at Certkiller . You want to check the status of configured virtual links.
Which command should you issue?

A. show ospf virtual-links
B. show virtual-links ospf
C. show ip ospf virtual-links
D. show ip ospf v-links

Answer: C

Explanation:
The command "show ip ospf virtual-links" will show you information about configured virtuallinks. new-york router#show ip ospf virtual-links Interface address: 192.168.1.10 (POS 1/1/1) cost: 1, state: P To P, transit area: 1.2.3.4 hello: 10, dead: 40, retrans: 5 nbr id: 192.168.1.20, nbr address: 192.168.1.20 nbr state: Full, nbr mode: Master, last hello: 38
Chapter: 4

QUESTION 580
An OSPF router must be in what state in order to route traffic?

A. mixed
B. partial
C. two-way
D. full

Answer: D

Explanation:
An OSPF router must be in "full" state (down, attempt, init, 2-way, exstart, exchange, loading, or full). When a router is in "full" state, adjacencies are fully established and the router is ready to route traffic.
Chapter: 4

QUESTION 581
You are the network administrator at Certkiller .Your newly appointed Certkiller network engineer has not quite grasped the concept of classless routing.
How would you explain the concept? (Choose all that apply.)

A. classless routing protocols carry the subnet mask with updates
B. classful routing protocols carry the subnet mask with updates
C. classless routing enables the use of VLSM
D. classless routing enables the use of high-order routing

Answer: A, C

Explanation:
Classless routing is a pretty complex topic for new engineers to fully grasp. The best way to explain the basic principles is to re-enforce the fact that the classless routing is not bound by address class limitations, routing updates carry the specialized subnet mask which makes VLSM possible.
Chapter: 4

QUESTION 582
The "ip bandwidth-percentage eigrp" performs what function?

A. it dictates what the maximum bandwidth percentage that EIGRP packets are allowed to use on a single router interface.
B. it dictates what the maximum bandwidth percentage that IP packets are allowed to use on a single router interface
C. it dictates what the maximum bandwidth percentage that EIGRP packets are allowed to use on all router interfaces.
D. it dictates what the maximum bandwidth percentage that packets routed via EIGRP are allowed to use on a single router interface.

Answer: A

Explanation:
The ip bandwidth-percent eigrp command is used to configure the percentage of bandwidth that may be used by EIGRP on an interface. If you issue the "ip bandwidth-percentage eigrp" command at the command line, the router will only allow 50% of the interface's bandwidth (which is the default) to be used for EIGRP.
Chapter: 4

QUESTION 583
What is the cost between the next hop router and the destination?

A. reliable distance
B. calculated distance
C. reasonable distance

D. advertised distance
E. administrative distance

Answer: D

Explanation:
The Diffusing Update Algorithm (DUAL) is the "brains" behind the EIGRP routing protocol's path decision making process. When routes to a destination network go down, the DUAL algorithm calculates new paths to make sure that traffic gets to its intended destination. One of the metrics involved in this decision making process is "advertised distance" which is equal to the cost between the next hop router and the destination network.
Chapter: 4

QUESTION 584
What is the cost between the local router and the next hop router?

A. feasible distance
B. partial distance
C. next-hop distance
D. agregate distance
E. advertised distance

Answer: C

Explanation: Only possible answer might be C.
Not A: Feasible distance is the cost of the route from the current router to the remote network.
Source BSCI Self Study Cisco Press (2003) 2nd Edition P362-363.

QUESTION 585
In order to determine the "best" path to a destination network, you need to add which two path costs together? (Select two.)

A. feasible distance
B. partial distance
C. advertised distance.
D. agregate distance
E. next hop distance

Answer: C, E

Explanation:
Two path costs would be advertised distance plus the next hop distance.
Source BSCI Self Study Cisco Press (2003) 2nd EditionP362-363.

QUESTION 586
What could cause EIGRP routes to be considered "stuck-in-active"?

A. the route being reported by the "stuck-in-active" message no longer exists.
B. the route being reported by the "stuck-in-active" message has been activated.
C. a query for the route generated by an EIGRP neighbor has not yet been replied to.
D. a query for the route generated by an OSPF neighbor has not yet been replied to.

Answer: A, C

Explanation:
The "stuck-in-active" message refers to the condition in which a primary route is no longer available and no feasible successor is available. The EIGRP router has sent out a query to its neighbors and no reply has been heard back for three minutes.
Chapter: 4

QUESTION 587
What are Query, Update and Reply known as?

A. EIGRP renewable packets
B. EIGRP reliable packets
C. TCP/IP reliable packets
D. QueryAll packets
E. OSPF reliable packets

Answer: B

Explanation:
EIGRP utilizes five different types of packets:
1) ACK
2) hello
3) query
4) reply
5) update
These packets are instrumental in EIGRP's ability to reliably route packets from source to destination network. The "reliable packets" are query, update, and reply.
Chapter: 4

QUESTION 588
You are a technician at Certkiller . Certkiller has an IS-IS network. Your newly appointed Certkiller trainee wants to know what IS-IS stand for.
What would your reply be?

A. intercontinental station-to-intercontinental station
B. intermediate section-to-intermediate section
C. intermediate station-to-intermediate station
D. intermediate system-to-intermediate system

Answer: D

Explanation:
The intermediate system-to-intermediate system routing protocol, more commonly known as ISIS was developed by Digital Equipment Corporation.
Chapter: 4

QUESTION 589
Which of the following attributes are common to both OSPF and IS-IS?

A. they both maintain a link-state database.
B. they both run the SPF algorithm to determine the shortest path to destination networks
C. they both utilize the concept of "areas" to maintain hierarchical network topologies
D. they both use RIP as their data transfer medium
E. they both communicate via port 80 when sending routing updates

Answer: A, B, C

Explanation:
IS-IS and OSPF share a number of common features; link-state databases, the running of the SPF algorithm, the use of "areas" among other similarities.
Chapter: 4

QUESTION 590
Which of the following subnet masks is the most optimized for providing five internet addresses?

A. 225.255.255.192
B. 225.255.255.248
C. 225.255.255.255
D. 225.255.255.254

Answer: B

Explanation:
Do the math and win a prize! This should have taken you about 5 minutes to answer. The subnet mask 255.255.255.248 will give you 32 subnets with 6 hosts per subnet. Sounds pretty efficient to me. If you want a great shortcut for figuring out number of hosts per subnet, subtract 248 from 256, that leaves you with 8 right?
Subtract two from 8 (can't use the first and last addresses in the range) and you are left with 6. There are six hosts in each of the subnets. It works every time.
The other subnet masks:
255.255.255.192 = 4 subnets with 62 hosts per subnet, way too many hosts.
255.255.255.255 = Gong! I hope no one fell for this one
255.255.255.254 = 128 subnets with two hosts per subnet, won't work if you need five hosts.

(*TIP* use this for point to point serial connections)
Chapter: 4

QUESTION 591
On a point-to-point network, what acknowledges each LSP that it receives.

A. PSNP
B. POPN
C. BPDU
D. LMNOP

Answer: A

Explanation:
On a point-to-point IS-IS network, an LSP(Link State Packet) is generated to announce a router's links and the status of the those links. When the LSP is received, a PSNP (Partial Sequence Number Packet) is sent to acknowledge each of the LSPs that are received.
Chapter: 4

QUESTION 592
What is the IS-IS equivalent of the OSPF backbone Area 0?

A. level-0 backbone
B. area 0 backbone
C. level-1 backbone
D. level-2 backbone

Answer: D

Explanation:
In order to answer this question, we are only going to deal with Level-1 and Level-2 routers (I see the guy with his hand raised...Yes, there are Level1/2 routers in IS-IS as well). The Level-1 routers are similar to OSPF areas; they are independent of each other and require a concentration point to share routing updates.
It is in this capacity that the Level-2 backbone functions. Level-2 routers provide the common connection point through which route updates from the other Level-1 routers flow. This concept has been highly simplified, but with good reason...hint-hint.
Chapter: 4

QUESTION 593
With which of the following can Level-2 IS routers establish an adjacency?

A. Level-1 IS in the same area
B. Level-2 IS in a different area
C. Level-2 IS in the same area
D. Level-1 IS in a different area

Answer: B, C

Explanation:
L2 router only establish adjanceny with other L1/L2 or L2 routers - - never with a plain L1 router

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QUESTION 594
Which of the following are most like an OSPF Area Border Router (ABR)?

A. Level 1 IS
B. Level 2 IS
C. Level1/Level2 IS
D. Level2/Level3 IS
E. IS-IS Media Border Router (IMBR)

Answer: C

Explanation:
IS-IS L1/L2 routers are a hybrid router type (which is the default setting when activating an ISIS router). The L1/L2 router is most like the OSPF ABR because L1/L2 routers can connect to both the backbone (L2) and a router in a different area (L1), which as we know an ABR is also capable of doing.
Chapter: 4

QUESTION 595
From the answer choices below, choose the statements that are true regarding IS-IS.

A. L1 IS routers can be used to connect areas together
B. L2 IS routers can be used to connect areas together
C. IS-IS routers can either be an L1 or L2
D. IS-IS routers can be both an L1 and L2 at the same time

Answer: B, D

Explanation:
IS-IS L1/L2 routers are a hybrid router type (which is the default setting when activating an ISIS router). The L1/L2 router is most like the OSPF ABR because L1/L2 routers can connect to both the backbone (L2) and a router in a different area (L1).
Chapter: 4

QUESTION 596
What will an OSPF ABR connect to when introduced into an existing network?

A. one or more OSPF areas
B. a single IS-IS area
C. L2 IS router

D. L1/L2 IS router

Answer: A

Explanation:
The OSPF Area Border Router's job is to sit on the border of one or more OSPF areas and provide a communication conduit between the areas and the backbone. The ABR runs the SPF algorithm and maintains the data for each area that it is connected to.
Chapter: 4

QUESTION 597
Level 1/2 IS routers provide which service for IS-IS networks?

A. intra-area routing services
B. inter-area routing services
C. intra-level routing services
D. consolidation of OSPF and IS-IS routing updates

Answer: B

Explanation:
IS-IS L1/L2 routers are a hybrid router type (which is the default setting when activating an ISIS router). The L1/L2 router is most like the OSPF ABR because L1/L2 routers can connect to both the backbone (L2) and a router in a different area (L1). Much in the same way that an OSPF ABR sits on the borders of one or more areas so does the L1/L2 router. Since the L1/L2 router straddles the area "fence", it is capable of providing inter-area routing services.
Chapter: 4

QUESTION 598
OSPF can handle VLSM because it has what capability?

A. OSPF organizes the network hierarchy when the SPF algorithm is run
B. OSPF's nature as a link-state database automatically supports VLSM
C. OSPF carries the subnet mask within its routing updates
D. OSPF organizes areas and their ABRs into hierarchical groups

Answer: C

Explanation:
In order for VLSM to be deployed on a network infrastructure, you need to use a routing protocol that is capable of sending specialized subnet masks as part of the routing table updates. When you configure OSPF, one of the steps is to enter the network addresses with corresponding subnet masks.
Chapter: 4

QUESTION 599
Which of the following are metrics available to IS-IS?

A. delay
B. error
C. expense
D. hop count

Answer: A, B, C

Explanation:
The IS-IS routing protocol incorporates three metrics: delay, expense, and error.
delay - measures the amount of delay on the link
expense - measures cost in resources of using the link
error - measures the number of errors occurring on the link
Chapter: 4

QUESTION 600
What is the purpose of the "show isis route" command?

A. It displays the Level-1 routing table for integrated IS-IS
B. It displays the Level-2 routing table for integrated IS-IS
C. It displays the routes most recently taken to a Level-1 ABR
D. It displays the hops taken by a packet leaving the nearest Level-1 router

Answer: A

Explanation:
The "show isis route" command will show the Level-1 routing table as seen in the example below:
Certkiller #show isis route
IS-IS Level-1 Routing Table - Version X
System Id Next-Hop SNPA Interface Metric State
BB00.0400.020C BB00.0400.020C bb00.0400.020c Serial0 10 Up
0800.2BB1.4434 0000.0000.0000 -- -- 0 Up
0800.2BB3.785B 0800.2BB3.785B bb00.0400.020c Serial0 10 Up
Chapter: 4

QUESTION 601
You are a technician at Certkiller . Certkiller has an OSPF network. Your newly appointed Certkiller trainee wants to know what an OSPF router does when a link-state change occurs.
What would your reply be?

A. it shuts down and runs the SPF algorithm
B. it multicasts the link-state change on ip address 224.0.0.6 to the DRs and BDRs via an LSU

C. it multicasts the link-state change on ip address 255.255.255.224 to the DRs and BDRs via an LSU
D. it unicasts the link-state change on ip address 255.255.255.224 to the ABRs and ASBRs via an LSU

Answer: B

Explanation:
An OSPF router reacts to link-state changes in the follow manner:
1) Link-state change is detected by a router
2) The router multicasts an LSU (Link-state update) to DRs and BDRs on address 224.0.0.6
3) The DR confirms receipt of the LSU and then floods it to other routers via address 224.0.0.5
There is more to the story, but this gives you the basic idea.
Chapter: 4

QUESTION 602
You are a technician at Certkiller . Certkiller has an OSPF network. Your newly appointed Certkiller trainee wants to know OSPF which multi-cast addresses are used on the Certkiller network.
What would your reply be? (Choose all that apply.)

A. 224.0.0.6
B. 224.0.0.5
C. 225.0.0.3
D. 255.255.255.224

Answer: A, B

Explanation:
An OSPF router reacts to link-state changes in the follow manner:
1) Link-state change is detected by a router
2) The router multicasts an LSU (Link-state update) to DRs and BDRs on address 224.0.0.6
3) The DR confirms receipt of the LSU and then floods it to other routers via address 224.0.0.5
These addresses are defined in RFC-1583.
224.0.0.5 OSPFIGP OSPFIGP All Routers
224.0.0.6 OSPFIGP OSPFIGP Designated Routers
Chapter: 4

QUESTION 603
You are a technician at Certkiller . Certkiller has an OSPF network. Your newly appointed Certkiller trainee wants to know why OSPF scales better than other routing protocols.
What would your reply be? (Choose all that apply.)

A. OSPF converges faster
B. OSPF uses a faster update protocol
C. OSPF sends updates in a compressed format

D. OSPF updates are incremental in nature, thus smaller in size

Answer: A, D

Explanation:
OSPF can scale better than some of its contemporaries due to a couple of factors. OSPF updates are based on topology changes, as opposed to RIP, which sends updates regardless of network topology status. When OSPF does send out an update, the update only contains elements that are different due to a linkstate change. RIP sends out a copy of its entire routing table whether anything has changed or not. OSPF is also aware of link costs, which means it won't send updates out over a slow link.
Chapter: 4

QUESTION 604
You are a technician at Certkiller . Your newly appointed Certkiller trainee wants to know why route summarization is so desirable
What would your reply be?

A. summarization results in smaller routing tables
B. summarization results in larger, more complex routing tables
C. summarization is easier on router cpu due to decreased number of routes to manage
D. summarization makes packets travel faster due to summarization compression routines

Answer: A, C

Explanation:
Route summarization is the process of condensing a series of routing table entries into a single entry that is maintained by the router. When you summarize, you compare a series of addresses and try to determine which ones have the same "high order" bit pattern (also known as significant bits). If you have a number of addresses with similar "high order" bit patterns, you can represent them with a single routing table entry as opposed to listing them separately. An end result of route summarization is that multiple "down stream" routes can be represented by a single table entry.
Chapter: 4

QUESTION 605
You are a technician at Certkiller . The Certkiller network is connected to the internet via more than one ISP. Your newly appointed Certkiller trainee wants to know what this type of network is known as.
What would your reply be?

A. multi-gnomed
B. mega-homed
C. multi-homed
D. maxi-homed

Answer: C

Explanation:
If your company requires high availability to the internet you might consider having more than one ISP provide your internet connectivity. This arrangement is referred to as being "multihomed". Many businesses that do a large amount of their business via "the net" utilize two or more ISP in order to provide fault tolerance should one service provider experience difficulties.
Chapter: 4

QUESTION 606
Which of the following routing protocols support VLSM?

A. EIGRP
B. IGRP
C. OSPF
D. RIP version 1
E. RIP version 2

Answer: A, C, E

Explanation:
EIGRP, RIP v.2 and OSPF are classless routing protocols, which means that they are capable of including a specialized subnet mask in routing updates. Any protocol that carries a subnet mask in updates is a candidate for supporting VLSM. IGRP and RIP v.1 are classful routing protocols, which they are excluded from VLSM membership.
Chapter: 4

QUESTION 607
You are a trainee technician at Certkiller . The Certkiller network implements the Border Gateway Protocol (BGP). Your instructor tells you that BGP comes in two flavors. He wants to what these two flavors are.
What would your reply be? (Choose all that apply.)

A. reliable gateway protocol (RGP)
B. interior gateway protocol (IGP)
C. silent gateway protocol (SGP)
D. exterior gateway protocol (EGP)

Answer: B, D

Explanation:
BGP runs in either of two capacitates, as an IGP where it maintains routing tables inside the AS and EGP in which it maintains routing tables between AS's.
Chapter: 4

QUESTION 608
You are a network engineer at Certkiller . Your newly appointed Certkiller trainee wants to know what command she should issue to view EIGRP entries in the routing table.
What would your reply be?

A. show ip eigrp current
B. show ip eigrp route recent
C. show current ip eigrp route
D. show ip eigrp route

Answer: D

Explanation:
The "show ip eigrp route" command will show only the routing table entries that are EIGRP relevant.
Chapter: 4

QUESTION 609
With regard to BGP Prefix Lists, which of the following statements are true?

A. prefix list sequence numbers by default start at 5 and increment by 5 as more are added
B. if a router matches a prefix list entry, processing of that list ceases
C. if a router matches a prefix list entry, processing of that list continues till another match is made
D. the command "no ip prefix-list sequence-number" deletes the specified prefix list from memory

Answer: A, B

Explanation:
BGP prefix lists function much in the same way as ACLs, but with a few differences. Prefix lists allow increment updating, while ACLs do not. A router will cease processing a prefix list once a match is made; ACLs get processed all the way to the end. If you do not specify a BGP Prefix List sequence-numbering scheme, the list entries will increment by 5 as you enter new statements.
Chapter: 4

QUESTION 610
You are a network engineer at Certkiller . Your newly appointed Certkiller trainee wants to know what the term "feasible distance" means.
What would your reply be?

A. It is the distance from the web server to the mail server
B. It is the sum of the cost of the route from the next-hop to the next-hop
C. It is the distance from the firewall to the ISP
D. It is the distance from the next-hop router to the destination

E. None of the above answers is correct

Answer: E

QUESTION 611
What is the relevance of "priority" when dealing with DR/BDR elections?

A. a priority of 1 means the router is eligible to become a DR
B. a priority of -1 means the router is eligible to become a DR
C. a priority of 0 means the router is ineligible to become a DR or BDR
D. DR/BDR elections run at regular intervals regardless of network topology status.

Answer: A, C

Explanation:
DR and BDR elections are handled as follows:
- Highest priority will become the DR
- Second Highest priority will become the BDR
- Only the malfunction of a DR or BDR will cause an election.
- A priority of "1" indicates eligibility to become a DR
- A priority of "0" indicates ineligibility to become a DR or BDR
Chapter: 4

QUESTION 612
You are the network administrator at Certkiller . Your newly appointed Certkiller trainee wants to know when the use of BGP would be appropriate.
What would your reply be? (Choose all that apply.)

A. if the border router in your AS is behind your corporate firewall
B. if your AS is at the edge of another routing protocol's border
C. if your network is multi-homed to the internet
D. if you have a need to manage the traffic entering and exiting your autonomous system
E. if your AS is a transit area for packets destined for another ASs

Answer: C, D, E

Explanation:
When to use BGP is a tough question.
The rule of thumb for when to use BGP usage is as follows:
1) if your network is multi-homed to the internet
2) if you have a need to manage the traffic entering and exiting your autonomous system
3) if your AS is a transit area for packets destined for another ASs
Chapter: 4

QUESTION 613
You are the network administrator at Certkiller . Your newly appointed Certkiller trainee

wants to know when the use of BGP would NOT be appropriate.
What would your reply be? (Choose all that apply.)

A. if your network only has a single connection to the internet
B. if you have a low bandwidth link between ASs
C. if the selection of routes to outside ASs is not a high priority
D. if the AS connecting you to the internet charges by the packet
E. if the router connecting to your external AS is running IOS version 11.2 or earlier

Answer: A, B, C

Explanation:
When not to use BGP is an even tougher question.
The rule of thumb for when NOT to use BGP usage is as follows:
1) if your network only has a single connection to the internet
2) if you have a low bandwidth link between ASs
3) if the selection of routes to outside ASs is not a high priority
Most of the choices for not to BGP relate to the fact that BGP can easily overwhelm an underpowered link or router. So you should only use BGP if your situation really warrants the configuration and management that comes along with it.
Chapter: 4

QUESTION 614
What attribute must all BGP implementations recognize?

A. customized
B. synchronized
C. well-known
D. well-adjusted
E. optional

Answer: C

Explanation:
A BGP "well-known" attribute is one that must be recognized by all implementations of BGP and must be included in every update message. There are other types of updates that may or may not need to be included in the update messages.
The following BGP attributes are the most commonly known:
1) Well-known mandatory.
2) Well-known discretionary.
3) Optional transitive.
4) Optional non-transitive.
Chapter: 4