Exam Code: 350-001
Cisco Certified Internetworking Expert

Demo Version

QUESTION 1
Layer 6 of the 7-Layer OSI model is responsible for:

A. Common Data Compression and Encryption Schemes
B. Establishing, managing, and terminating communication sessions
C. Synchronizing communication
D. Determining resource availability
E. None of the above
Answer: A
Explanation:
Layer 6 is the Presentation Layer. This layer provides independence from differences in data representation (e.g., encryption and compression) by translating from application to network format, and vice versa. The presentation layer works to transform data into the form that the application layer can accept. This layer formats and encrypts data to be sent across a network, providing freedom from compatibility problems. It is sometimes called the syntax layer.
Incorrect Answers:
B: This describes layer 5 of the OSI model, which is the Session Layer.
C, D: These are not responsibilities of the Presentation Layer.

QUESTION 2
Which of the following is a component of the Data Link Layer of the OSI model?

A. NIC
B. Repeater
C. Multiplexer
D. Hub
E. Router
Answer: A
Explanation:
The data link layer is layer 2 in the OSI model, and deals with things like MAC addresses, and link level technologies such as Ethernet and Token Ring. Network interface cards (NICs) typically implement a specific data link layer technology, so they are often called "Ethernet cards", "Token Ring cards", and so on. They also include a 48 bit MAC address, also called a burned in address since these addresses are burned into the cards.
Incorrect Answers:
B, C, D: Repeaters, Hubs, and Multiplexers deal with the physical connections of devices into a network, and they are considered to reside on the physical layer of the OSI model (layer 1).
E: Routers operate at layer 3 and 4 of the OSI model, since they deal with things like layer 3 IP addresses, and TCP/UDP ports.

QUESTION 3
Which statement is true regarding the use of TFTP?

A. TFTP lies at the Transport layer and runs over IP.
B. TFTP lies at the Application layer and runs over FTP.
C. TFTP lies at the Transport layer and runs over ICMP.
D. TFTP lies at the Application layer and runs over TCP.
E. TFTP lies at the Application layer and runs over UDP.

Answer: E

Explanation:
Trivial File Transfer Protocol (TFTP) is a simplified version of FTP that allows files to
be transferred from one computer to another over a network, usually without the use of
client authentication (for example, username and password). It is an application that uses
UDP port 69.

QUESTION 4
In a data communication session between two hosts, the session layer in the OSI
model generally communicates with what other layer of the OSI model?

A. The Physical layer of the peer
B. The data link layer of the peer
C. The peer's presentation layer
D. The peer's application layer
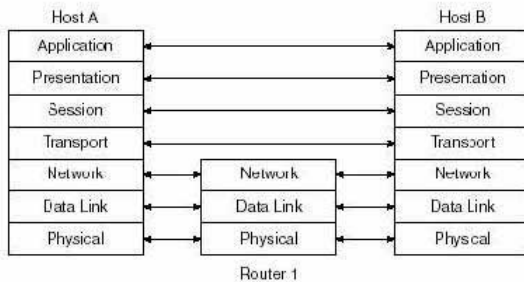E. The peer's session layer

Answer: E

Explanation:

Interactions Between the Same Layers on Different Computers

Layer *N* must interact with Layer *N* on another computer to successfully implement its functions. For example, the transport layer (Layer 4) can send data, but if another computer does not acknowledge that the data was received, the sender will not know when to perform error recovery. Likewise, the sending computer encodes a destination network layer address (Layer 3) in the network layer header. If the intervening routers do not cooperate by performing their network layer tasks, the packet will not be delivered to the true destination.

To interact with the same layer on another computer, each layer defines a header and, in some cases, a trailer. Headers and trailers are additional data bits, created by the sending computer's software or hardware, that are placed before or after the data given to Layer *N* by Layer *N+1*. The information needed for this layer to communicate with the same layer process on the other computer is encoded in the header and trailer. The receiving computer's Layer *N* software or hardware interprets the headers and trailers created by the sending computer's Layer *N*, learning how Layer *N*'s processing is being handled, in this case.

Figure 3-3 provides a conceptual perspective on the same-layer interactions. The application layer on Host A communicates with the application layer on Host B. Likewise, the transport, session, and presentation layers on Host A and Host B also communicate. The bottom three layers of the OSI model have to do with delivery of the data; Router 1 is involved in that process. Host A's network, physical, and data link layers communicate with Router 1; likewise, Router 1 communicates with Host B's physical, data link, and network layers. Figure 3-3 provides a visual representation of the same-layer interaction concepts.

Figure 3-3   *Same-Layer Interactions on Different Computers*

QUESTION 5

Which layers do the OSI model and the TCP/IP models share in common? (Choose all that apply)

A. Application
B. Presentation
C. Session
D. Transport
E. Data link
F. Physical

Answer: A, D

Explanation:
The TCP/IP reference model has the following layers:
Application, Transport, Internet, and Host to Network.
Incorrect Answers:
B, C, E, F. The TCP/IP reference model does not have a presentation layer, a session layer, a physical layer, or a data-link layer.

QUESTION 6

Under the OSPF process of your router's configuration, you type in "redistribute igrp 25 metric 35 subnets" in order to redistribute your OSPF and IGRP routing information. What affect did the "subnets" keyword have in your configuration change?

A. It resulted in OSPF recognizing non-classful networks.
B. It had no effect since IGRP will summarize class boundaries by default.
C. It forced IGRP into supporting VLSM information.
D. It caused OSPF to accept networks with non-classful masks.

Answer: D

Explanation:
Whenever there is a major net that is subnetted, you need to use the keyword subnet to redistribute protocols into OSPF. Without this keyword, OSPF only redistributes major network boundaries. It is possible to run more than one OSPF process on the same router, but running more than one process of the same protocol is rarely needed, and it consumes the router's memory and CPU.
Incorrect Answers:

A. OSPF already always recognizes non-classful networks and their VLSM information.
B. Although IGRP does indeed summarize by class boundaries, OSPF does not by default. The "subnets" keyword enables OSPF to use VLSM information from the IGRP routes.
C. IGRP does not support VLSM routing information.

QUESTION 7
Which routing protocols do not need to have their router ID reachable by other routers within any given network in order to maintain proper network connectivity? (Choose all that apply)

A. EIGRP
B. OSPF
C. BGP
D. LDP
E. TDP
F. None of the above
Answer: A, B, C
Explanation:
The router ID of each router does not necessarily need to be reached by other routers in the network for EIGRP and OSPF. BGP uses TCP as the reliable exchange of information between routers, and BGP routers do not need to even be directly connected.
Incorrect Answers:
D, E. LDP and TDP are not routing protocols.

QUESTION 8
Which of the following does On Demand Routing use to transport ODR information from router to router?

A.   RIP
B. BGP
C. CDP
D. UDP
E. LSP

Answer: C

Explanation:
ODR uses information from the Cisco Discovery Protocol (CDP).
Incorrect Answers:
A, B, D, E. ODR has nothing to do with RIP, BGP, UDP, or LSP.

QUESTION 9
A router running multiple protocols learns how to reach a destination through numerous
different methods. Which of the following information will the router use first to
determine the best way to reach the given destination?

A. The length of the network mask of a route.
B. The administrative distance of a route.
C. The metric of a route.
D. None of the above.

Answer: A

Explanation:
Most specific network match is always used first.
Incorrect Answers:
B, C: The administrative distance and metric is consulted only for routes with the same
network mask length.

QUESTION 10
Which of the following routing protocols has a default administrative distance less that
the default IS-IS AD?

A. External EIGRP routes
B. iBGP routes
C. Internal EIGRP routes
D. RIP version 1 routes
E. eBGP

Answer: C, E

Explanation:
The default IS-IS administrative distance is 115. Internal EIGRP routes are 90, and

external BGP is 20.
Incorrect Answers:
A. External EIGRP routes have an AD of 170.
B. Interior BGP routes have an AD of 200.
D. RIP routes have an AD of 120.

QUESTION 11
Which of the following are key differences between RIP version 1 and RIP version 2?
(Choose all that apply)

A. RIP version 1 supports authentication while RIP version 2 does not.
B. RIP version 2 uses multicasts while RIP version 1 does not.
C. RIP version 1 uses hop counts as the metric while RIP version 2 uses bandwidth
information.
D. RIP version 1 does not support VLSM while RIP version 2 does. E.
RIP version 1 is distance vector while RIP version 2 is not.

Answer: B, D

Explanation:
Both Classless Routing and Multicast updates (224.0.0.9) were impossible with RIP v1
and are available with RIP version 2.
Incorrect Answers:
A. RIPv2 supports neighbor authentication. RIPv1 does not support this.
C. Both RIP version use hop counts as the metric.
E. Both RIP versions are distance vector routing protocols.

QUESTION 12
You are deciding which routing protocol to implement on your network. When weighing
the different options, which of the following are valid considerations?

A. Distance vector protocols have a finite limit of hop counts whereas link state protocols
place no limit on the number of hops.
B. Distance vector protocols converge faster than link state protocols.
C. RIP is a distance vector protocol. RIP v2 and OSPF are link state protocols.
D. Distance vector protocols only send updates to neighboring routers. Link state
protocols depend on flooding to update all routers in the within the same routing domain.

Answer: A
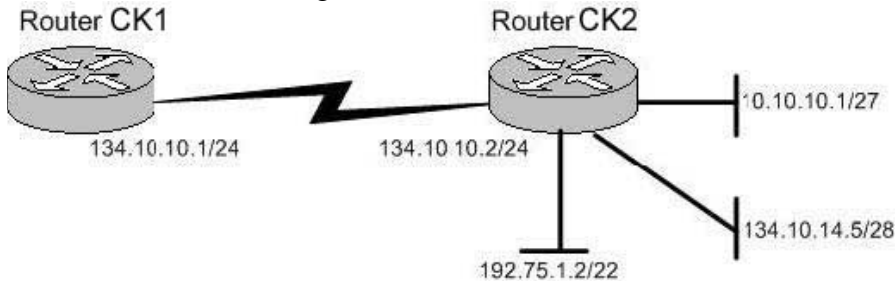Explanation:
Only A is true.
Incorrect Answers:
B. Link state protocols have the benefit of better convergence than distance vector
protocols.
C. RIPv2 is a distance vector protocol, just like RIP version 1.

D. Link state protocols do not flood updates to every router within the same domain, just within their area.

QUESTION 13

The Itexamworld network contains two routers named Router CK1 and Router CK2 as shown in the following exhibit:

Both Router CK1 and Router CK2 are running RIPv1. Both routers are configured to advertise all of their attached networks via RIP. Which of the networks connected to Router CK2 will be advertised to Router CK1 ?

A. 10.10.10.0/27 and 134.10.15.0/28
B. 10.0.0.0/8 and 192.75.0.0/24
C. 134.10.15.0/28 and 192.75.0.0/22
D. Only 10.0.0.0/8
E. Only 134.10.15.0/28
F. Only 10.10.10.0/27
G. None of the above

Answer: D

Explanation:

Only one subnet 10.0.0.0/8 will be advertised.

In this scenario we are being tested on the following concepts:

RIP V1 performs auto summarization at network boundaries by default. It treats the subnets to be advertised differently depending upon several attributes of the respective subnets.

Here is the process RIP v1 uses to advertise, assuming that there are no filters (such as distribute-lists, or route-maps) to block the packet:

Is the route to be advertised part of the major network of the interface?

If it is, then advertise. If it is not, then summarize the network to its classful boundary and send it out.

This is the fate of the 10.10.10.0/27 subnet, which will be summarized as 10.0.0.0/8 and sent out.

Incorrect Answers:

A, C, E. If the route is part of the major network, check to see of the subnet mask matches that of the outgoing interface. If the subnet mask does match then advertise the route out the interface. If the subnet mask of the route does not match the interface's subnet mask, then do not advertise the route out the interface unless the route is a host

route (/32). This is the fate of the 134.10.15.0/28 subnet, which will not be sent out (advertised) at all.

B, C. Super net advertisement (advertising any network prefix less than its classful major network) is not allowed in RIP route summarization. This is the fate of the 192.75.1.2/22 subnet, which will be not be sent out (advertised) at all.

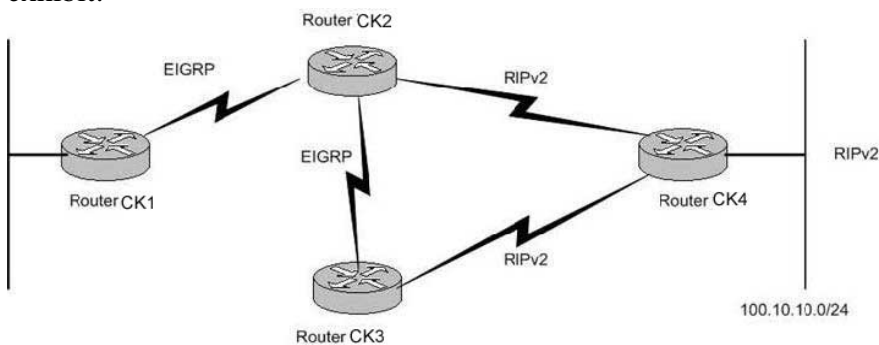F. The 10.10.10.0/27 network will be summarized and sent as10.0.0.0/8.

Please note:

If the route is a host route then advertise it out.

QUESTION 14

You are the network administrator at Itexamworld . The Routing protocols which run between the different routers in the Itexamworld network are shown in the following exhibit:

On Router CK3 RIPv2 is being redistributed into EIGRP. No other redistribution is done to the network.

With regard to this scenario, who owns the route for subnet 100.10.1.0/24 in the routing table of Router CK1 ?

A. Nobody, because the route is neither in the routing table of Router CK1 , nor EIGRP topology table.
B. External EIGRP.
C. The route is only in the EIGRP topology table only and not in the routing table of Router CK1 .
D. Internal EIGRP.
E. The route is only but is in the EIGRP topology table as an active route and not in the routing table of Router CK1 .

Answer: B

Explanation:
External EIGRP will own the route, because the route is from outside the AS. Routes that are redistributed into EIGRP are automatically considered external EIGRP routes.
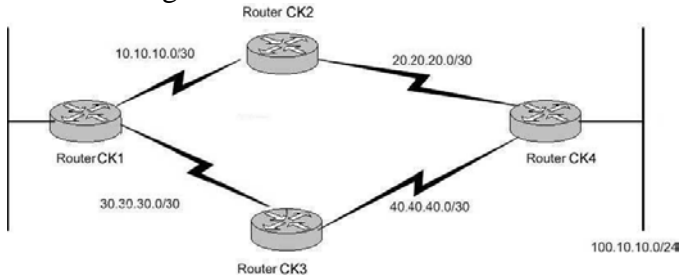Incorrect Answers:
A. Since RIPv2 allows for VLSM information to be carried in the route, there are no concerns about the route not being advertised due to summarization. Since RIPv2 is being redistributed into EIGRP, CK1 will learn about the route via CK2 and CK3 .
C, E. This route will be in both the EIGRP table, as well as the IP routing table.
D. Redistributed routes always show up as External routes.

Note: From the perspective of router CK1 , all routes are EIGRP learned, since that is the only protocol running on this router. Although the AD of RIP is lower than external EIGRP routes, RIP is not being configured on CK1 so it will not learn this route via RIP.

QUESTION 15
The router topology for the multi-protocol Itexamworld network is shown in the following exhibit:

The current configuration for Router CK1 , Router CK2 , Router CK3 , and Router CK4 are as follows:
Router CK1 :
interface loopback0
ip address 1.1.1.1 255.255.255.255
router eigrp 10
network 1.0.0.0
network 10.0.0.0
interface loopback1
ip address 4.4.4.4 255.255.255.255
Router CK2
router eigrp 10
network 10.0.0.0
network 20.0.0.0
no auto-summary
Router CK3
router ospf 10
network 30.30.30.0 0.0.0.255 area 0
network 40.40.40.0 0.0.0.255 area 0
Router CK4
router eigrp 10
redistribute connected metric 1400 230 1 255 1500
network
20.0.0.0 no auto-
summary   router
ospf 10
redistribute connected metric 100 subnets
network 40.40.40.0 0.0.0.255 area 0
router bgp 10
network 100.10.1.0 mask 255.255.255.0
neighbor 1.1.1.1 remote-as 10
neighbor update-source loopback
no auto-summary

Your newly appointed Itexamworld trainee wants to know who owns the subnet
100.10.1.0/24 in the routing table of Router CK1 .
What would your reply be?

A. Router CK1 does not have this subnet in its routing table.
B. EIGRP
C. OSPF
D. BGP
E. RIP
F. It is there as a static route.

Answer: B

Explanation:
Routers CK1 , CK2 , and CK4 are all EIGRP neighbors with all relevant subnets
advertised, so this route will show up as an EIGRP route.
Incorrect Answers:
C, D, E. Router CK1 is only running the EIGRP protocol, so the other routing protocols
are completely ruled out.

QUESTION 16
Which of the following are Distance Vector routing protocols? (Choose all that
apply)

A. OSPF
B. BGP
C. RIP version 1
D. ISIS
E. EIGRP
F. RIP version 2

Answer: C, E, F

Explanation:
Both RIP version 1 and RIP version 2 are distance vector protocols.
EIGRP is an enhanced distance vector protocol, relying on
the Diffused Update Algorithm (DUAL) to calculate the shortest path to a
destination within a network
Incorrect Answers:
A, D. OSPF and ISIS are link state routing protocols.
B. BGP is a path vector protocol, which is similar to a distance vector protocol, but with
a key difference. A distance vector protocol chooses routes based on hop count, where
BGP chooses routes that traverse the least number of Autonomous Systems, among other
things.

QUESTION 17

As the administrator of the Itexamworld network, you are planning to implement a dynamic routing protocol to replace the static routes. When comparing link state and distance vector routing protocols, what set of characteristics best describe Link-State routing protocols?

A. Fast convergence and lower CPU utilization
B. High CPU utilization and prone to routing loops
C. Slower convergence time and average CPU utilization
D. Fast convergence and greater CPU utilization
E. None of the above
Answer: D
Explanation:
Link State protocols, such as IS-IS and OSPF, converge more quickly than their distance vector counterparts, through the use of flooding and triggered updates. In link state protocols, changes are flooded immediately and computed in parallel.
Triggered updates improve convergence time by requiring routers to send an update message immediately upon learning of a route change. These updates are triggered by some event, such as a new link becoming available or an existing link failing.
The main drawbacks to Link State protocols are the amount of CPU overhead involved in calculating route changes and memory resources that are required to store neighbor tables, route tables, and a complete topology map.

QUESTION 18

A customer has a router with an interface connected to an OSPF network, and an interface connected to an EIGRP network. Both OSPF and EIGRP have been configured on the router. However, routers in the OSPF network do not have route entries in the route table for all of the routers form the EIGRP network. The default-metric under OSPF is currently set to 16. Based on this information, what is the most likely cause of this problem?

A. The 'subnets' keyword was not used under the OSPF process when redistributing EIGRP into OSPF.
B. EIGRP is configured as a Stub area, and therefore routes will not be redistributed unless a route-map is used to individually select the routes for redistribution.
C. The 'subnets' keyword was not used the EIGRP process when redistributing between OSPF into EIGRP.
D. The default metric for OSPF is set to 16, and therefore all EIGRP routes that are redistributed are assigned this metric, and are automatically considered unreachable by EIGRP.
E. A metric was not assigned as part of the redistribution command for EIGRP routes redistributing into OSPF, and the default behavior is to assign a metric of 255, which is considered unreachable by OSPF.

Answer: A

Explanation:
When routes are redistributed into OSPF, only routes that are not subnetted are redistributed if the subnets keyword is not specified. It is generally a good idea to include the "subnets" keyword at all times when redistributing routes from other protocols into OSPF.
Incorrect Answers:
B. There is nothing in this question to lead us to believe that stub networks are being used at all. Even if they were, route maps would not be needed to redistribute the EIGRP and OSPF routes.
C. The "subnets" keyword needs to be placed under the OSPF process, not the EIGRP process.
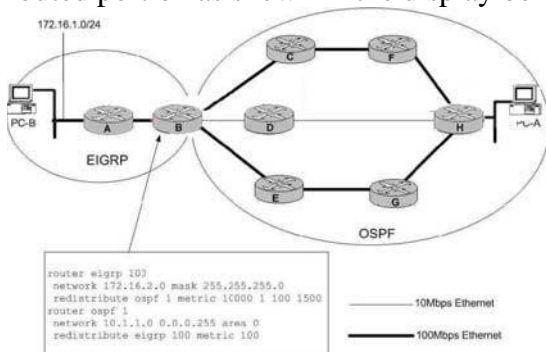D. EIGRP routes with a metric of 16 are acceptable, and not considered unreachable. If the routing protocol used was RIP instead of EIGRP then this would be true.
E. When redistributing from one OSPF process to another OSPF process on the same router, the metric will be carried through from one process to the other if no metric value is specified. When redistributing other processes to an OSPF process, the default metric is 20 when no metric value is specified.

QUESTION 19
The Itexamworld WAN consists of an OSPF network portion and an EIGRP routed portion as shown in the display below:

Given the network and OSPF configuration shown in the exhibit, what statement is true regarding traffic flowing from PC-A to PC-B?

A. Traffic will only flow on the shortest, low-speed path, PC-A-H-D-B-A-PC-B.
B. Traffic will flow on both of the high speed paths (PC-A-H-F-C-B-A-PC-B and PC-A-H-G-E-B-A-PC-B) but not the slow-speed path.
C. Traffic will flow on all three of the paths.
D. Traffic will flow uni-directionally on one of the high-speed paths form PC-A to PC-B, and uni-directionally on the other high-speed path from PC-B to PC-A.
E. Traffic will flow bi-directionally on only one of the high-speed paths, and the path selected will be based on the OSPF process IDs.

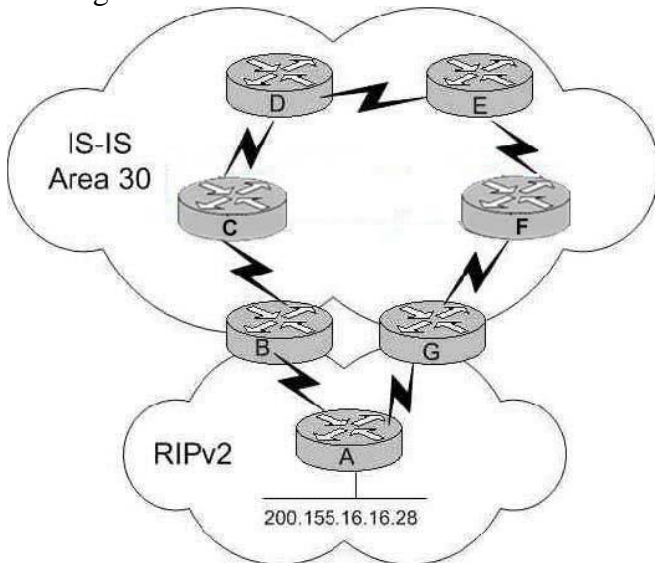Answer: B

Explanation:
The default metric for OSPF is 100,000,000 divided by the bandwidth. For each 100 Mbps fast Ethernet link, the OSPF cost will be 1. For the slower, 10 Mbps Ethernet link, the OSPF cost will be 10, so the traffic will be routed around the slower link to the high speed links even though more hops are involved, because each high speed link across the entire OSPF cloud will have a total cost of 3 (1+1+1). By default, OSPF will load balance traffic across up to four equal cost paths. Therefore, choice B is correct in that traffic will utilize both high speed links.

QUESTION 20
The Itexamworld network is redistributing IS-IS and RIP version 2 routes as shown in the diagram below:

Routers B and G both advertise RIP learned routes into IS-IS. Network is added to Router A via an Ethernet port and Router B is the First router to learn about this new network. After the network has converged, what path will Router G take to reach network 200.155.16.16?

A. Router G takes the direct path through router A.
B. Router G takes the path through routers, F, E, D, C, B, A.
C. Router G will oscillate between the path through router A and the path through router F.
D. Router G and router B will both think the other router is the best path to network 200.155.16.16, causing a routing loop.
E. The answer can not be determined unless the default-metric used in the redistribution is known.

Answer: B

Explanation:
When a router receives identical route and subnet mask information for a given network from two different routing protocols, the route with the lowest administrative distance is

chosen. IS-IS has a lower administrative Distance than RIP, so this route is installed in the routing table and used, even though it is obviously not the optimal route in this specific example.