QUESTION 1
The Certkiller A router is configured as shown below:
Certkiller A(config)# interface loopback 0
Certkiller A(configif)#
ip address 192.168.16.24 255.255.255.255
As a result of this change, which of the statements below are true? (Select all valid responses)
A.It creates a virtual, software only, interface.
B.It provides a way to test the convergence of OSPF routing updates.
C.The mask of 255.255.255.255 is called a host mask.
D.It uses a wildcard mask of 255.255.255.255.
E.It ensures that an interface is always active for OSPF processes.
F.Loopback interfaces must be numbered 0.

Answer: A, C, E

Explanation:
When the OSPF process starts, the Cisco IOS uses the highest local IP addresses its
OSPF router ID.If a loopback interface is configured, that address is used regardless of its value.
A loopback interface is a logical, software interface that is always up.
A 32bit
mask is sometimes called a host mask, because it specifies a single host and not a network orsubnetwork.
Incorrect Answers:
B.The addition of a loopback interface will in no way test the convergence speed of any OSPF process.
D.A wildcard mask of value 255.255.255.255 will not check any of the bit values in the IP address.
F.A loopback interface can be any number from 1-255.

QUESTION 2
Which IEEE standards apply when a company wants to implement 1000mbps Ethernet? (Select two options)?
A.802.3u
B.802.3ae
C.802.3ab
D.802.3e
E.802.3z
F.802.3i

Answer: C, E

Explanation:
The IEEE 802.3z standard describes 1000BASESX.
The 1000BaseT standard was released in June 1999, defined byIEEE 802.3ab.
Incorrect Answers:
A.This describes the standard used for wireless networks.
B.This is the standard for token ring networks.
D.OnJune 17, 2002theIEEE 802.3aespecification for10 Gigabit Ethernetwas approved as an IEEE standard by the
IEEE Standards Association (IEEESA)

Standards Board.
F.IEEE 802.3u describes the standard for 100BASETX.

QUESTION 3
You are a technician at Certkiller . Your newly appointed Certkiller trainee wants you to give her some examples of crosstalk.
What would your reply be? (Choose all that apply.)
A.nearendcrosstalk (NEXT)
B.jitter crosstalk (JEXT)
C.far end crosstalk (FEXT)
D.middle closedend crosstalk (MCEXT)
E.power sum nearendcrosstalk (PSNEXT)

Answer: A, C, E

Explanation: Near End Crosstalk (NEXT) is crosstalk measured at the transmitting end of the cable. Far End Crosstalk (FEXT) is measured at the far end from where the signal was injected into the cable.
Power Sum NEXT (PSNEXT) is basically a mathematical calculation that simulates all four pairs being energized at the
same time. PSNEXT calculations are used to ensure that a cable will not exceed crosstalk noise performance requirements when all pairs are operating simultaneously.
PSNEXT is typically u sed in Gigabit Ethernet, rather than 10BaseT or 100BaseT.
Reference:SybexCCNA 4.0P.30

QUESTION 4
You are a technician at Certkiller . Your newly appointed Certkiller trainee wants to know what the valid options for Frame LMI types are.
What would your reply be? (Choose all that apply.)
A.EIA/TIA
B.Q.932
C.q933a
D.IEEE
E.Cisco
F.ansi

Answer: C E F

Explanation:
NameDocumentIOS LMI Type Parameter
*CiscoProprietarycisco
*ANSIT1.617 Annex Dansi
*ITUQ.933. Annex Aq.933a
Reference:
CCNA SelfStudy CCNA ICND exam certification Guide (Cisco Press, ISBN 158720083X) Page 382

QUESTION 5
You are the network administrator at Certkiller . The Certkiller network has expanded considerably over the last year. It is now one large, cumbersome network. You want to segment the network.
What devices can you use? (Choose all that apply.)
A.Hubs
B.Repeaters
C.Switches
D.Bridges
E.Routers

Answer: C, D, E

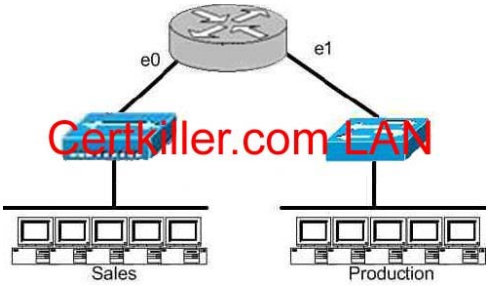
Explanation:
Routers, switches, and bridges don't transmit broadcasts. They segment a large cumbersome network, into multiple
efficient networks.Incorrect Answers:
A.Hubs is incorrect because a hub doesn't segment a network, it only allows more hosts on one.Hubs operate at layer
one, and is used primarily to physically add more stations to the LAN.
B.This also incorrect because the job of a repeater is to repeat a signal so it can exceed distance limitations.It also
operates at layer one and provides no means for logical LAN segmentation.
F.This is incorrect because media converters work by converting data from a different media type to work with the
media of a LAN.It also operates at layer one and provides no means for logical LAN segmentation.
Routers perform which of the following functions?(Select three)
A.Packet switching
B.Collision prevention on a LAN segment.
C.Packet filtering
D.Broadcast domain enlargement
E.Broadcast forwarding
F.Internetworkcommunication

Answer: A, C, F

Explanation:
A.Routers work in Layer 3 of the OSI Model.A major function of the router is to route packets between networks.
C.Through the use of access lists, routers can permit and deny traffic using layer 3 and layer 4 packet information.
F.The primary purpose of a router is to route traffic between different networks, allowing for internetworking.
Incorrect Answers:
B.While routers can be used to segment LANs, which will reduce the amount of
collisions from occurring.As long as there are 2 or more devices on a LAN segment, the possibility of a collision exists,
whether a router is used or not.

D.The broadcast domain of a LAN is often segmented through the use of a router.This results in reducing the size of the
broadcast domain.
E.Routers do not forward broadcast traffic.

QUESTION 6
The Sales and Production networks are separated by a router as shown in the diagram below:



Which of the following statements most accurately describes the characteristics of the above networks broadcast and collision domains? (Select the two best answer choices)
A.There are two broadcast domains in the network.
B.There are four broadcast domains in the network.
C.There are six broadcast domains in the network.
D.There are four collision domains in the network.
E.There are five collision domains in the network.
F.There are seven collision domains in the network.

Answer: A, F

Explanation:
In this network we have a hub being used in the Sales department, and a switch being used in the Production department.Based on this, we have two broadcast domains: one for each network being separated by a router.For the
collision domains, we have 5 computers and one port for E1 so we have 6 collision domains total because we use a
switch in the Production Department so 5 are created there, plus one collision domain for the entire Sales department
because a hub is being used.

QUESTION 7
The Certkiller corporate LAN consists of one large flat network.You decide to segment this LAN into two separate networks with a router.What will be the affect of this change?
A.The number of broadcast domains will be decreased.
B.It will make the broadcasting of traffic between domains more efficient between segments.
C.It will increase the number of collisions.
D.It will prevent segment 1's broadcasts from getting to segment 2.
E.It will connect segment 1's broadcasts to segment 2.

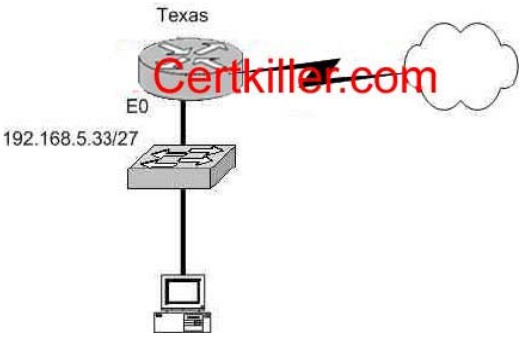
Answer: D
Explanation

A router does not forward broadcast traffic. It therefore breaks up a broadcast domain, reducing unnecessary network
traffic.Broadcasts from one segment will not be seen on the other segment.
Incorrect Answers:
A.This will actually increase the number of broadcast domains from one to two.
B.All link level traffic from segment one to segment two will now need to be routed between the two interfaces of the
router.Although this will reduce the traffic on the LAN links, it does also provide a less efficient transport between the
segments.
C.Since the network size is effectively cut into half, the number of collisions should decrease dramatically.
E.Broadcasts from one segment will be completely hidden from the other segment.

QUESTION 8
Which of the following are benefits of segmenting a network with a router? (Select all that apply)
A.Broadcasts are not forwarded across the router.
B.All broadcasts are completely eliminated.
C.Adding a router to the network decreases latency.
D.Filtering can occur based on Layer 3 information.
E.Routers are more efficient than switches and will process the data more quickly.
F.None of the above.

Answer: A, D
Explanation
Routers do not forward broadcast messages and therefore breaks up a broadcast domain. In addition, routers can be
used to filter network information with the use of access lists.
Incorrect Answers:
B.Broadcasts will still be present on the LAN segments.They will be reduced, because routers will block broadcasts
from one network to the other.
C.Adding routers, or hops, to any network will actually increase the latency.
E.The switching process is faster than the routing process.Since routers must do a layer 3 destination based lookup in
order to reach destinations, they will process data more slowly than switches.

QUESTION 9
The Certkiller Texas branch network is displayed in the following diagram:



Of the following choices, which IP address should be assigned to the PC host?
A.192.168.5.5
B.192.168.5.32
C.192.168.5.40
D.192.168.5.63
E.192.168.5.75

Answer: C.

Explanation:
Thesubnet mask used on this Ethernet segment is /27, which translates to 255.255.255.224.Valid hosts on the 192.168.5.33/27 subnet are 192.168.5.33192.168.5.62, with 192.168.5.32 used as the network IP address and 192.168.5.63 used as the broadcast IP address.Therefore, only choice C falls

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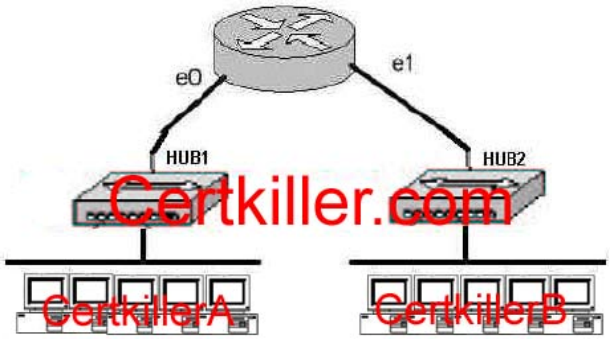
QUESTION 10
The Certkiller .com network is displayed in the diagram below:



Based on the diagram above, how many collision domains are present in the Certkiller .com network??

A. One
B. Two
C. Three
D. Four
E. Five
F. Six
G. Fourteen

Answer: B

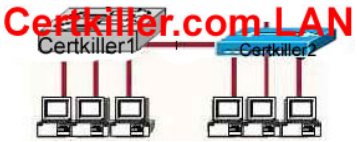
Explanation:
Since hubs are being used for both Ethernet segments, there are a total of two collision domains.Routers do not forward
broadcast and are used to segment LANs, so Certkiller A consists of one collision domain while Certkiller B consists of
the second collision domain.

QUESTION 11
Which of the following devices can an administrator use to segment their LAN?(Choose all that apply)
A.Hubs
B.Repeaters
C.Switches
D.Bridges
E.Routers
F.Media Converters
G.All of the above

Answer: C, D, E

Explanation:
Routers, switches, and bridges don't transmit broadcasts. They segment a large cumbersome network, into multiple
efficient networks.
Incorrect Answers:
A.Hubs is incorrect because a hub doesn't segment a network, it only allows more hosts on one.Hubs operate at layer
one, and is used primarily to physically add more stations to the LAN.
B.This also incorrect because the job of a repeater is to repeat a signal so it can exceed distance limitations.It also
operates at layer one and provides no means for logical LAN segmentation.
F.This is incorrect because media converters work by converting data from a different media type to work with the
media of a LAN.It also operates at layer one and provides no means for logical LAN segmentation.

QUESTION 12
Network topology exhibit

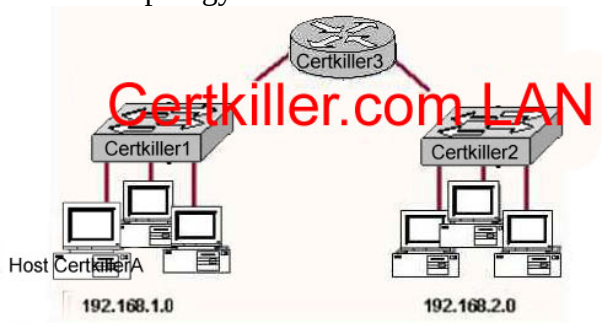


In the exhibit a part of the Certkiller .com is displayed. Notice the Certkiller 1 Switch and the Certkiller 2 hub.
Which of the devices shown can transmit simultaneously without causing collisions?
A.All hosts
B.Only hosts attached to the switch
C.All hosts attached to the hub and one host attached to the switch
D.All hosts attached to the switch and one host attached to the hub

Answer: B

Explanation:
As we know switch is the device which avoids collisions. When two computers communicate through a switch they
make their own collision domain. So, there is no chance of collisions. Whenever a hub is included, it supports on half
duplex communication and works on the phenomena of CSMA/CD so, there is always a chance of collision.

QUESTION 13
Network topology exhibit



Study the network topology exhibit carefully, in particular the two switches Certkiller 1, Certkiller 2, and the router Certkiller 3.
Which statements are true in this scenario? Select two.
A.All the devices in both networks will receive a broadcast to 255.255.255.255 sent by host Certkiller A.
B.Only the devices in network 192.168.1.0 will a broadcast to 255.255.255.255 sent by host Certkiller A.
C.All the devices on both networks are members of the same collision domain.
D.The hosts on the 192.168.1.0 network form one collision domain, and the hosts on the 192.168.2.0 network form a
second collision domain.
E.Each host is in a separate collision domain.

Answer: B, E

Explanation:
B is in fact correct, however D is not. If the diagram used hubs and notswitches then yes, there would only be two
collision domains, but thediagram has switches. The author may have intended to state broadcastdomains which would
have been correct as well.Answer E is correct, since the network is comprised of switches.

QUESTION 14
Which Layer 1 devices can be used to enlarge the area covered by a single LAN segment? Select two
A.Switch
B.Router
C.NIC
D.hub

E.Repeater
F.RJ45 transceiver

Answer: D, E

Explanation:
Both hub, Repeater, Router and Switch repeat the packet. But only hub and Repeater do not segment the network.

QUESTION 15
What information is supplied by CDP? Select three.
A.Device identifiers
B.Capabilities list
C.Platform
D.Route identifier
E.Neighbourtraffic data

Answer: A, B, C

Explanation:
CDP is a Cisco proprietary protocol; to support forwarding CDP messages over an interface, that interface must support SNAP headers. Any LAN interface, HDLC, Frame Relay, and ATM all support CDP. The router or switch can discover Layer 3 addressing details of neighboring routers—without even configuring that Layer 3 protocol—because CDP is not dependent on any particular Layer 3 protocol.

CDP discovers several useful details from the neighboring device:

- **Device Identifier**—Typically the host name.
- **Address list**—Network and data link addresses.
- **Port Identifier**—Text that identifies the port, which is another name for an interface.
- **Capabilities list**—Information on what the device does—for instance, a router or switch.
- **Platform**—The model and OS level running in the device.

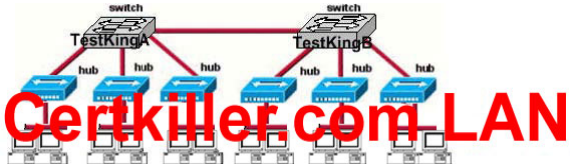
QUESTION 16
If a host on a network has the address 172.16.45.14/30, what is the address of thesubnetworkto which this host belongs?
A.172.16.45.0
B.172.16.45.4
C.172.16.45.8
D.172.16.45.12
E.172.16.45.18

Answer: D

Explanation:

The last octet in binary form is 00001110. Only 6 bits of this octet belong to the subnet mask. Hence thesubnetworkis
172.16.45.12.

QUESTION 17
Exhibit



How many broadcast domains are shown in the graphic assuming only the default VLAN is configured on the switches?
A.one
B.two
C.six
D.twelve

Answer: A

Explanation:
There is only one broadcast domain because switches and hubs do not switch the broadcast domains. Only layer 3
devices can segment the broadcast domains.

QUESTION 18
You have the binary number 10011101. Convert it to its decimal and hexadecimal equivalents. (Select two answer choices)
A.158
B.0x9D
C.156
D.157
E. 0x19
F.0x9F

Answer: B, D

Explanation:
10011101 = 128+0+0+16+8+4+0+1 = 157
For hexadecimal, we break up the binary number 10011101 into the 2 parts:
1001 = 9 and 1101 = 13, this is D in hexadecimal, so the number is 0x9D.Wecan further verify by taking the hex
number 9D and converting it to decimal by taking 16 times 9, and then adding 13 for D (0x9D = (16x9)+13 = 157).

QUESTION 19
How would the number 231 be expressed as a binary number?

A.11011011
B.11110011
C.11100111
D.11111001
E.11010011

Answer: C
Explanation
Decimal number 231 equates to 11100111 in binary (128+64+32+0+0+4+2+1)
Incorrect Answers:
A:Binary 11011011 equates to 219 (128+64+0+16+8+0+2+1)
B:Binary 11110011 equates to 243 (128+64+32+16+0+0+2+1)
D:Binary 11101011 equates to 249 (128+64+32+16+8+0+0+1)
E:Binary 11010011 equates to 211 (128+64+0+16+0+0+2+1)

QUESTION 20
How would the number 172 be expressed in binary form?
A.10010010
B.10011001
C.10101100
D.10101110

Answer: C

Explanation:
10101100= 128 + 0 + 32 + 0 + 8 + 4 + 0 + 0 = 172
Incorrect Answers:
A.Binary 10010010 = 128+0+0+16+0+0+2+0=146
B.Binary 10011001 = 128+0+0+16+8+0+0+1=153
D.Binary 10101110 = 128+0+32+0+8+4+2+0= 174

QUESTION 21
The MAC address for your PC NIC is:C93F32B4DC19.What is the address of the OUI portion of this NIC card, expressed as a binary number?
A.110011000011111100011000
B.110001101100000000011111
C.110011100001111101100000
D.110010010011111100110010
E.110011000111100000011000
F.111110000110011100011001

Answer: D

Explanation:
The first half of the address identifies the manufacturer of the card. This code, which is assigned to each manufacturer by

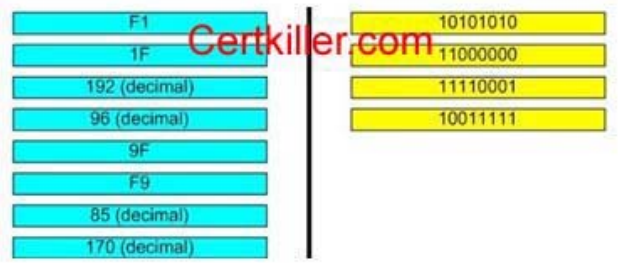
the IEEE, is called the organizationally unique identifier (OUI). In this example, the OUI isC93F32.
If we take this
number and convert it to decimal form we have:
C9 = (12x16) + 9 = 201
3F = (3x16) + 15 = 63
32 = (3x16) + 2 = 50
So, in decimal we have 201.63.50.If we then convert this to binary, we have:
201 = 11001001
63 = 00111111
50 = 00110010
So the correct answer is D:110010010011111100110010

QUESTION 22
How do you express the binary number 10110011 in decimal form?
A.91
B.155
C.179
D.180
E.201
F.227

Answer: C

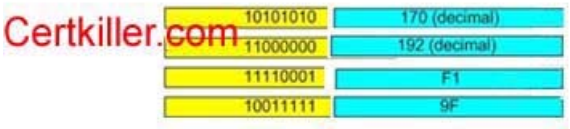
Explanation:
If you arrange the binary number 10110011, against the place value and multiply the values, and add them up, you get
the correct answer.
10110011
1286432168421
128 + 0 + 32 +16 + 0 + 0 +2 +1 =179

QUESTION 23
Convert the hex and decimal numbers on the left into binary, and match them to their corresponding slot on the right. (Not all of the hexadecimal and decimal numbers will be used)



Answer:

Explanation:



170 (Decimal)= 10101010
192 (Decimal)= 11000000
F1(241 = Decimal)= 11110001
9F(159 = Decimal)= 10011111
The following chart displays all of the possible IP address numbers, expressed in decimal, hexadecimal, and binary:

DEC	HEX	BIN	DEC	HEX	BIN	DEC	HEX	BIN
0	00	00000000	43	2B	00101011	86	56	01010110
1	01	00000001	44	2C	00101100	87	57	01010111
2	02	00000010	45	2D	00101101	88	58	01011000
3	03	00000011	46	2E	00101110	89	59	01011001
4	04	00000100	47	2F	00101111	90	5A	01011010
5	05	00000101	48	30	00110000	91	5B	01011011
6	06	00000110	49	31	00110001	92	5C	01011100
7	07	00000111	50	32	00110010	93	5D	01011101
8	08	00001000	51	33	00110011	94	5E	01011110
9	09	00001001	52	34	00110100	95	5F	01011111
10	0A	00001010	53	35	00110101	96	60	01100000
11	0B	00001011	54	36	00110110	97	61	01100001
12	0C	00001100	55	37	00110111	98	62	01100010
13	0D	00001101	56	38	00111000	99	63	01100011
14	0E	00001110	57	39	00111001	100	64	01100100
15	0F	00001111	58	3A	00111010	101	65	01100101
16	10	00010000	59	3B	00111011	102	66	01100110
17	11	00010001	60	3C	00111100	103	67	01100111
18	12	00010010	61	3D	00111101	104	68	01101000
19	13	00010011	62	3E	00111110	105	69	01101001
20	14	00010100	63	3F	00111111	106	6A	01101010
21	15	00010101	64	40	01000000	107	6B	01101011
22	16	00010110	65	41	01000001	108	6C	01101100
23	17	00010111	66	42	01000010	109	6D	01101101
24	18	00011000	67	43	01000011	110	6E	01101110
25	19	00011001	68	44	01000100	111	6F	01101111
26	1A	00011010	69	45	01000101	112	70	01110000
27	1B	00011011	70	46	01000110	113	71	01110001
28	1C	00011100	71	47	01000111	114	72	01110010
29	1D	00011101	72	48	01001000	115	73	01110011
30	1E	00011110	73	49	01001001	116	74	01110100
31	1F	00011111	74	4A	01001010	117	75	01110101
32	20	00100000	75	4B	01001011	118	76	01110110
33	21	00100001	76	4C	01001100	119	77	01110111
34	22	00100010	77	4D	01001101	120	78	01111000
35	23	00100011	78	4E	01001110	121	79	01111001
36	24	00100100	79	4F	01001111	122	7A	01111010
37	25	00100101	80	50	01010000	123	7B	01111011
38	26	00100110	81	51	01010001	124	7C	01111100
39	27	00100111	82	52	01010010	125	7D	01111101
40	28	00101000	83	53	01010011	126	7E	01111110
41	29	00101001	84	54	01010100	127	7F	01111111
42	2A	00101010	85	55	01010101			

DEC	HEX	BIN	DEC	HEX	BIN	DEC	HEX	BIN
128	80	10000000	171	AB	10101011	214	D6	11010110
129	81	10000001	172	AC	10101100	215	D7	11010111
130	82	10000010	173	AD	10101101	216	D8	11011000
131	83	10000011	174	AE	10101110	217	D9	11011001
132	84	10000100	175	AF	10101111	218	DA	11011010
133	85	10000101	176	B0	10110000	219	DB	11011011
134	86	10000110	177	B1	10110001	220	DC	11011100
135	87	10000111	178	B2	10110010	221	DD	11011101
136	88	10001000	179	B3	10110011	222	DE	11011110
137	89	10001001	180	B4	10110100	223	DF	11011111
138	8A	10001010	181	B5	10110101	224	E0	11100000
139	8B	10001011	182	B6	10110110	225	E1	11100001
140	8C	10001100	183	B7	10110111	226	E2	11100010
141	8D	10001101	184	B8	10111000	227	E3	11100011
142	8E	10001110	185	B9	10111001	228	E4	11100100
143	8F	10001111	186	BA	10111010	229	E5	11100101
144	90	10010000	187	BB	10111011	230	E6	11100110
145	91	10010001	188	BC	10111100	231	E7	11100111
146	92	10010010	189	BD	10111101	232	E8	11101000
147	93	10010011	190	BE	10111110	233	E9	11101001
148	94	10010100	191	BF	10111111	234	EA	11101010
149	95	10010101	192	C0	11000000	235	EB	11101011
150	96	10010110	193	C1	11000001	236	EC	11101100
151	97	10010111	194	C2	11000010	237	ED	11101101
152	98	10011000	195	C3	11000011	238	EE	11101110
153	99	10011001	196	C4	11000100	239	EF	11101111
154	9A	10011010	197	C5	11000101	240	F0	11110000
155	9B	10011011	198	C6	11000110	241	F1	11110001
156	9C	10011100	199	C7	11000111	242	F2	11110010
157	9D	10011101	200	C8	11001000	243	F3	11110011
158	9E	10011110	201	C9	11001001	244	F4	11110100
159	9F	10011111	202	CA	11001010	245	F5	11110101
160	A0	10100000	203	CB	11001011	246	F6	11110110
161	A1	10100001	204	CC	11001100	247	F7	11110111
162	A2	10100010	205	CD	11001101	248	F8	11111000
163	A3	10100011	206	CE	11001110	249	F9	11111001
164	A4	10100100	207	CF	11001111	250	FA	11111010
165	A5	10100101	208	D0	11010000	251	FB	11111011
166	A6	10100110	209	D1	11010001	252	FC	11111100
167	A7	10100111	210	D2	11010010	253	FD	11111101
168	A8	10101000	211	D3	11010011	254	FE	11111110
169	A9	10101001	212	D4	11010100	255	FF	11111111
170	AA	10101010	213	D5	11010101			

QUESTION 24
Which two of the addresses below are available for host addresses on the subnet 192.168.15.19/28? (Select two answer choices)
A.192.168.15.17
B.192.168.15.14
C.192.168.15.29
D.192.168.15.16
E.192.168.15.31
F.None of the above

Answer: A, C

Explanation:
The network uses a 28bit subnet (255.255.255.240).This means that 4 bits are used for the networks and 4 bits for the
hosts. This allows for 14 networks and 14 hosts (2n2). The last bit used to make 240 is the 4thbit (16) therefore the
first network will be 192.168.15.16. The network will have 16 addresses (but remember that the first address is the
network address and the last address is the broadcast address). In other words, the networks will be in increments of
16 beginning at 192.168.15.16/28. The IP address we are given is 192.168.15.19. Therefore the other host addresses
must also be on this network. Valid IP addresses for hosts on this network are: 192.168.15.17192.168.15.30.
Incorrect Answers:

B.This is not a valid address for this particular 28 bit subnet mask. The first network address should be 192.168.15.16.
D.This is the network address.
E.This is the broadcast address for this particular subnet.

QUESTION 25
You have a Class C network, and you need ten subnets.You wish to have as many addresses available for hosts as possible.Which one of the following subnet masks should you use?

A. 255.255.255.192
B. 255.255.255.224
C. 255.255.255.240
D. 255.255.255.248
E.None of the above

Answer: C

Explanation:
Using the 2n2 formula, we will need to use 4 bits forsubnetting, as this will provide for 242 = 14 subnets.The subnet
mask for 4 bits is then 255.255.255.240.
Incorrect Answers:
A.This will give us only 2 bits for the network mask, which will provide only 2 networks.
B.This will give us 3 bits for the network mask, which will provide for only 6 networks.
D.This will use 5 bits for the network mask, providing 30 networks.However, it will provide for only for 6 host addresses in each network, so C is a better choice.

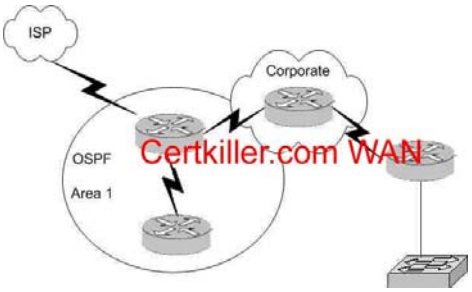
QUESTION 26
When designing OSPF networks; what is the purpose of using a hierarchical design? (Select all choices that apply)
A.To reduce the complexity of router configuration
B.To speed up convergence
C.To confine network instability to single areas of the network
D.To reduce routing overhead
E.To lower costs by replacing routers
F.To decrease latency

Answer: B, C, D

Explanation:
An OSPF network designed in a hierarchical fashion with different areas is used because a small change in the topology
of a single area won't force every router to run the SPF algorithm.Changes in one area are limited to that area only, not
to every router within the entire network.Confining the topology changes to one area reduces the overhead and speeds

the convergence of the network.
Reference:CCNA SelfStudy CCNA ICND exam certification Guide (Cisco Press, ISBN 158720083X) Page 194
Incorrect Answers:
A.This choice is incorrect because a hierarchical design actually adds complexity to the router configuration.
E.This is incorrect because a hierarchical design will not eliminate the need for routers.In fact, segmenting the network
into multiple areas may actually require the use of additional routers.
F.The use of a hierarchical design will in no way reduce the latency involved.If additional routers are implemented in
orderto segment the network into additional areas, then the latency involved may actually increase.

QUESTION 27
The Certkiller network is shown in the diagram below:



In this diagram, OSPF is used as the routing protocol between the corporate office and the offices on the left side of the diagram.An ISDN link provides connectivity from the central corporate router to the remotesales office on the right side of the diagram.Which type of route should the corporate office use to reach the router on the right side of the diagram if the overhead on the ISDN link is to be kept to a minimum?
A.A RIP route
B.An OSPF route
C.A static route
D.A default route
E.A dynamic route
F.None of the above

Answer: C

Explanation:
A static route uses the least amount of overhead because no routing protocol information will be exchanged over the
ISDN link.As long as the ISDN link is up, the static route will always remain in the routing table of the corporate router.
Incorrect Answers:
A.This will not only provide additional overhead on the ISDN link as the RIP information is passed from one side to the
other, but it will add additional overhead and complexity to the corporate router because now two routing protocols will
need to be running.With this choice, RIP and OSPF will need to be configured on the corporate router.
B.This will add the overhead of LSP information being passed between the two routers over the ISDN link.
D.Although a default route can be a type of static route, in this case a default route will be a poor choice

because then
traffic destined to the Internet will go to remote office on the right side, instead of towards the ISP on the left.
E.All dynamic routing protocols will add some level of overhead.Static routes will not increase the traffic level at all over
the ISDN link.

QUESTION 28
You are a network administrator and you need to implement a routing protocol on your network that provides:
*Scalability
*VLSM support
*Minimal overhead
*Support for connecting networks using routers of multiple vendors
Which of the following routing protocol would best serve your needs?
A.VTP
B.RIP version 1
C.EIGRP
D.OSPF
E.IGRP
F.CDP

Answer: D

Explanation:
Since one of the requirements is that the routing protocol must support other vendors, our only choices are RIP and
OSPF.Since RIP version 1 does not support VLSM, OSPF is the only choice.
Incorrect Answers:
A.VTP is the VLAN Trunking Protocol.This is not a routing protocol.
B.RIP version one does not support VLSM.Note that RIPv2 does support VLSM, and would be a valid choice.
C, E.EIGRP and IGRP are Cisco proprietary routing protocols, and are not supported by other vendors.
F.CDP is the Cisco Discovery Protocol, which is used to exchange information between Cisco devices.It can only be
used between Cisco routers and switches, and it is not a routing protocol.

QUESTION 29
You need to configure a single router into load balancing traffic across 4 unequal cost paths. Which routing protocols can satisfy this requirement? (Select two)
A.RIP v1
B.RIP v2
C.IGRP
D.EIGRP
E.OSPF
F.ISIS

Answer: C, D

Explanation:
In general, load balancing is the capability of a router to distribute traffic over all its network ports that are the same
distance from the destination address. Load balancing increases the utilization of network segments, thus increasing
effective network bandwidth. There are two types of load balancing: equal cost path and unequal cost path.
Every routing protocol supports equal cost path load balancing. In addition to that,IGRP and EIGRP also support
unequal cost path load balancing, which is known as variance.Thevariancecommand instructs the router to include routes with a metric less thanntimes the minimum metric route for that destination, wherenis the number specified
by thevariancecommand. The variablencan take a value between 1 and 128, with the default being 1, which means
equal cost load balancing (variance<n>for example.Traffic is also distributed proportionally among unequal cost links,
with respect to the metric.

QUESTION 30
You need to choose a routing protocol for a new Certkiller network.This network will be running IP, IPX, and Appletalk, and you wish to utilize only one routing protocol.Which one would be the best choice?
A.OSPF
B.EIGRP
C.RIP v2
D.IGRP
E.RIP v1

Answer: B

Explanation:
Only EIGRP provides routing protocol support for IP, IPX, andAppletalknetworks.

QUESTION 31
Which of the routing protocols shown below support both VLSM and route summarization? (Select three)
A.IGRP
B.EIGRP
C.RIP v1
D.RIP v2
E.OSPF
F.VTP
G.CDP

Answer: B, D, E

Explanation:
EIGRP and OSPF support Variable Length Subnet Masks (VLSM) and provide for both automatic and manual

route
summarization configurations.RIPv2 is an enhanced version of RIP, and overcame some of the limitations of RIP by
introducing support for VLSM.
Incorrect Answers:
A, C.IGRP and RIP are relatively old and simplistic routing protocols that were developed before the concepts of
VLSM and route summarization.
F.VTP is the VLAN Trunking Protocol, used in switched LAN environments to carry VLAN information.It is not a
routing protocol.
G.CDP is the Cisco Discovery Protocol, used between neighboring Cisco devices to automatically discover information.It is not a routing protocol.

QUESTION 32
Which of the following routing protocols support the use of VLSM (Variable Length Subnet Masking)? (Select three)
A.RIPv1
B.EIGRP
C.OSPF
D.IGRP
E.RIPv2

Answer: B, C, E

Explanation:
Static routing, OSPF, ISIS, EIGRP, BGP, and RIP version 2 all support VLSM.Incorrect Answers:A, D.RIPv1 and
IGRP do not support VLSM.
Reference:SybexCCNA Study Guide edition 4, Page 123

QUESTION 33
Which of the following routing protocols do NOT support VLSM (variable length subnet masking)? (Choose all that apply).
A.RIPv1
B.IGRP
C.EIGRP
D.OSPF
E.ISIS
F.RIPv2

Answer: A, B

Explanation:
RIP version 1 and IGRP areclassfulIP routing protocols.They do not support variable length subnet masks.

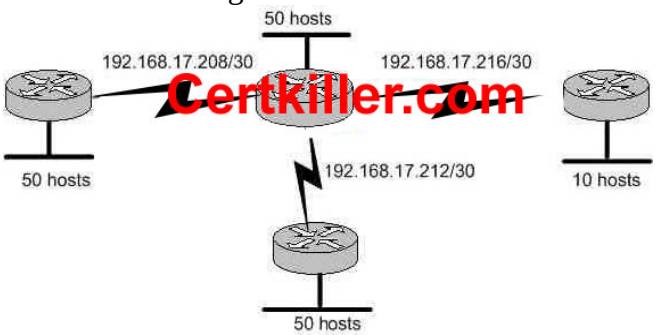
Incorrect Answers:
C, D, E, F.Static routing, OSPF, ISIS, EIGRP, BGP, and RIP version 2 all support VLSM.

QUESTION 34
You need to implement the use of a routing protocol that meets the following requirements:
1.Converges quickly
2.Supports VLSM, CIDR, IP, and IPX.
3. Uses minimal bandwidth for routing updates.
Which one of the following routing protocols would be the best choice?
A.RIPv1
B.RIPv2
C.IGRP
D.OSPF
E.EIGRP

Answer: E

Explanation:
EIGRP would be the best choice as it provides support for VLSM and CIDR, has faster convergence times than other
protocols, is scalable, and supports IP, IPX, andAppletalk.EIGRP is a Cisco proprietary routing protocol, so it will not
work with other vendors.However, the requirements of the question made no mention of the use of non-Cisco routers,
so it will not be an issue in this case.
Incorrect Answers:
A, C.Both of these routing protocols do not support VLSM.
B.While RIPv2 supports VLSM, it provides no support for IPX.The IPX RIP protocol is similar in function to RIP
version 1.Both versions of RIP are also consume more bandwidth than EIGRP.
D.OSPF does not support IPX.

QUESTION 35
See the WAN diagram below:



Certkiller has four offices, each with its own network, as shown in the graphic. Three of the networks have approximately 50 hosts each, and one network has 10 hosts. The multi vendorrouters are connected by serial links that use separatesubnetworknumbers.The Certkiller network has leased one Class C address to

be used for all networks and serial links, and they do not wish to replace any of their existing routers.
Which routing protocol would be most appropriate for this scenario?
A.TCP/IP
B.RIP version 1
C.RIP version 2
D.IGRP
E.EIGRP
F.All of the above are acceptable

Answer: C

Explanation:
The question describes 2 important requirements.The first is the fact that a routing protocol that supports VLSM is
needed, as specified by the fact that one class C address range is to be used for all networks.
The second important requirement is that routers from multiple vendors are being used, so the routing protocol chosen
must be nonproprietary.
RIP version 2 is a standards based routing protocol that supports variable length subnet
masking (VLSM).
Incorrect Answers:
A.This is not a routing protocol.
B.RIP version 1 does not support VLSM
D, E.Although these both support VLSM, IGRP and EIGRP are Cisco proprietary routing protocols which are not
supported by other router vendors.

QUESTION 36
RIP version 2 is being used as the routing protocol within the Certkiller network.What does RIP version 2 use to prevent routing loops? (Choose two)
A.CIDR
B.Splithorizon
C.Authentication
D.Classless masking
E.Holddown timers
F.Multicast routing updates
G.Path Vectoring

Answer: B, E

Explanation:
Distance Vector routing protocols employ thesplit horizonmechanism to reduce the possibility of routing loops.Split
horizon blocks information about routes from being advertised by a router out of any interface from which that information originated.
RIP versions 1 and 2 also use the concept of hold timers.When a destination has become unreachable (or the

metric has
increased enough to cause poisoning), the destination goes into "holddown". During this state, no new path will be
accepted for the same destination for this amount of time. The hold time indicates how long this state should last.
Incorrect Answers:
A, C, D, F.Although these are all features and functions of RIP version 2, they are not mechanisms used to prevent
routing loops.
G.Path Vectoring is a concept used by BGP routers.RIP version 1 and 2 are considered to be distance vector routing
protocols.

QUESTION 37
The Certkiller WAN is displayed in the diagram below:

Based on the information shown above, which routing protocols can be used within the Certkiller network show in the diagram? (Choose three).
A.RIP v1
B.RIP v2
C.IGRP
D.OSPF
E.BGP
F.EIGRP

Answer: B, D, F

Explanation: the exhibit showed routers withVariableLenghtSubnet Mask (VLSM), and asked which 3 protocols can
be used. 3 protocols that support VLSM are RIP v2, OSPF and EIGRP.
Incorrect Answers:
A, C.Both of these routing protocols do not support VLSM information.
E.BGPis used for external routing between different autonomous systems, and is not generally used within a single AS.

QUESTION 38
The Certkiller Network consists of the following 5 IP networks:
NETWORK 1: 192.168.10.0/26
NETWORK 2: 192.168.10.64/27
NETWORK 3: 192.168.10.96/27
NETWORK 4: 192.168.10.128/30
NETWORK 5: 192.168.10.132/30
Which of the following routing protocols will support this IP addressing scheme? (Choose all that apply).

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

Answer: B, D, E

Explanation:
Because this network is using IP subnets with variable length subnet masks, only routing protocols that support VLSM
will fit this particular case.The routing protocols that support VLSM are RIP v2, EIGRP and OSPF.
Incorrect Answers:
A, C.RIP version 1 and IGRP do not support VLSM information within the routing updates.
F.BGP is used for interAS
routing, such as the Internet.It is not normally used as an Interior routing protocol.

QUESTION 39
Exhibit:

Refer to the exhibit. A small office with twentyfive
employees has one connection to the Internet through
the CK1 router. What routing configurations are recommended on the CK1 and ISP routers?
A.BGP on both the routers.
B.RIP on both the routers.
C.Default routes on both routers.
D.BGP on the ISP router and a static route on CK1 .
E.A default route on CK1 and a static route on the ISP router.

Answer: E

QUESTION 40
Which one of the following commands would you enter to terminate a VTY line session?
A.close
B.disable
C.disconnect
D.suspend
E.exit
F.None of the above

Answer: E

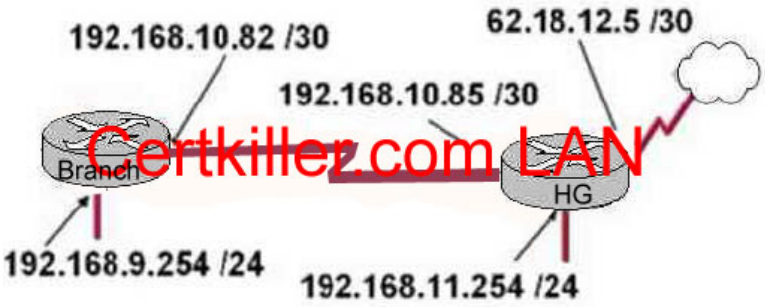
Explanation:
A VTY line is a telnet session.To end a telnet session from a remote device, enter the exit or logout command.
Incorrect Answers:
A, B, C, D.These are all invalid commands.

QUESTION 41
You are implementing a new frame relay network to provide connectivity between you offices.To do this, you set up the frame relay network using point to point sub interfaces.
Which of the following does NOT need to be configured?
A. The Frame Relay encapsulation on the physical interface.
B.The local DLCI on eachsubinterface.
C.An IP address on the physical interface.
D.Thesubinterfacetype as pointtopoint.

Answer: C

Explanation:
When using point to pointsubinterfacesin a frame relay network, thesubinterfaceswill each have their own IP addresses
and will each be contained within their own IP subnet.The physical interface does not require an IP address.
Incorrect Answers:
A.The physical interface will need to be configured with a layer two encapsulation type, so in this case it must be frame
relay.
B.Thesubinterfaceswill have the local DLCI assigned to each one, using the "framerelay interfacedlci" command for
each of thesubinterfaces.
D.Eachsubinterfaceshould be configured as a point to point network type.

QUESTION 42



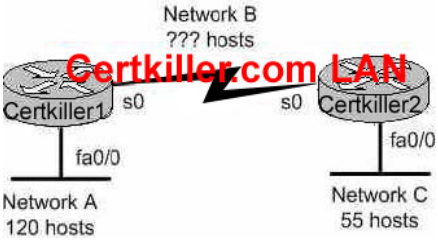
After the router interfaces shown in the diagram have been configured, it is discovered that hosts in the Branch LAN cannot access the Internet.
Further testing reveals additional connectivity issues.
What will fix this problem?
A.Change the address of the Branch router LAN interface.
B.Change the address of the Branch router WAN interface.

C.Change the subnet mask of the HQ router LAN interface.
D.Change the address of the HQ router LAN interface.
E.Change the address of the HQ router interface to the Internet.
F.Change the subnet mask of the HQ router interface to the Internet.

Answer: B

Explanation:
The serial line connection between the Branch office and the HG office should have interfaces that belong in the same
subnet.Based on the diagram above, the WAN interface of the Branch router is configured with an IP address that is in
a different IP network than the serial interface of the HG router.As it is set up currently, no traffic will pass from the
Branch router to the HG until these two interfaces are in the same subnet.

QUESTION 43
A portion of he Certkiller network is shown in the diagram below:



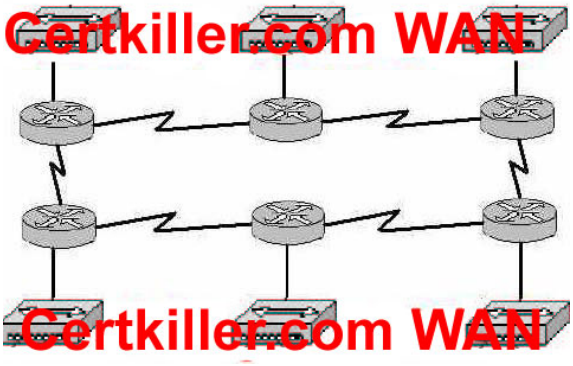
Consider the 192.1.1.0/24 network in this exhibit. This network uses RIP v2.
Which combination ofsubnetworkassignments will satisfy the requirements for networks A, B, and C of this design?(Select three)
A.Network A = 192.1.1.128/25
B.Network A = 192.1.1.0/25
C.Network B = 192.1.1.252/30
D.Network B = 192.1.1.4/30
E.Network C = 192.1.1.64/26
F.Network C = 192.1.1.224/27

Answer: A, D, E

Explanation:
To properly answer this question, it is best to start from the end, which is network C.Since network C requires at least
55 host addresses, a /26 network must be used.A network mask of /26 will provide for 62 usable IP addresses while a
/27 network will only provide for 30 so we must choose E.With choice E taken, hosts within the range of 192.1.1.65192.1.1.126 will be used.
For network A, both choices A and B are using the correct subnet mask, but we are only limited to choice A since
many of the hosts in choice B are already being used in network C.Finally, for network B we are left with

choice D
since hosts in choice C are already being used by network A.

QUESTION 44
The Certkiller network topology is displayed in the following diagram:



Assume that RIP v1 is the only routing protocol in use. What is the Maximum number of usable IP address that can be supported on each LAN if the Certkiller network is using one Class C address block?

A. 14
B. 16
C. 30
D. 32
E. 62
F. 64

Answer: A

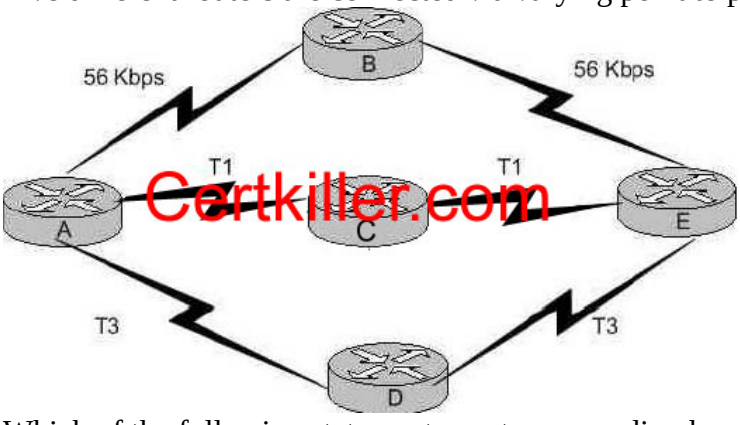
Explanation:
RIP version 1 does not support VLSM information, so all networks must have the same subnet mask.In the network
above, there are a total of 12 networks (6 LANs and 6 different point to point WAN connections).Therefore, if each of
the 12 networks use the 255.255.255.240 subnet mask, there will be a total of 16 networks with 14 usable hosts on
each LAN.
Incorrect Answers:
B.There are only 14 usable IP addresses in the 255.255.255.240 subnet mask, not 16, since we must subtract 2 for the
network and broadcast IP addresses.
C, E.These options will not provide enough separate networks.A total of 12 are required due to the use of a protocol
that does not support VLSM.
D, F.These options omit the fact that we must subtract 2 addresses from the usable range for the network and broadcast IP addresses for each subnet.

QUESTION 45
You are a technician at Certkiller . Your newly appointed Certkiller trainee wants to know what theCDP is. What would your reply be? (Choose all that apply.)
A.It is globally enabled by default on Cisco routers.
B.It is globally enabled by default on all routers.
C.It is a proprietary protocol.
D.It is a nonproprietary protocol.
E.It can be used to gather hardware and protocol information about neighbor devices.

Answer: A, C, E

Explanation:
Cisco Discovery Protocol (CDP) is a Cisco proprietary protocol designed to help administrators collect information
about local and remote devices. You can use the CDP to gather hardware and protocol information about neighbor
devices, which can be useful for troubleshooting and documenting the network.
The CDP discovers basic information about neighboring routers and switches, without needing to know the passwords
for the neighboring devices. CDP supports any LAN, HDLC, Frame Relay, and ATM interface in fact, it supports any
interface that supports the use of SNAP headers. The router or switch can discover Layer 2 and layer 3 addressing
details of neighboring router without even configuring that Layer 3 protocol this is because CDP is not dependant on
any particular Layer 3 protocol.

QUESTION 46
Five different routers are connected via varying point to point circuit types as displayed below:



Which of the following statements are true regarding how router A will chose a path to router E? (Choose three)
A.If RIP is the routing protocol, router A will determine all paths have an equal cost.
B.If RIP is the routing protocol, router A will install only the ADE path in its routing table.
C.If IGRP is the routing protocol, router A will determine that path ACE has the lowest cost.
D.If IGRP is the routing protocol, router A will determine that path ADE has the lowest cost.

E.If RIP and IGRP are both configured on router A, the router will use the route information learned by IGRP.
F.If RIP and IGRP are both configured on router A, the router will use the route information learned by RIP.

Answer: A, D, E

Explanation:
RIP simply uses hop counts as the metric for path determination, so RIP will see all routes as equal in this case.IGRP
uses bandwidth and delay, by default, so it will prefer the paths over the T3 links.By default, IGRP routes are always
preferred over RIP routes because IGRP has a lower Administrative Distance (AD) than RIP.The AD of IGRP is 100
while the AD of RIP is 120.

QUESTION 47
You work as a network engineer at Certkiller .com. You are required to allow establishment of a Telnet session with a router Certkiller C.
Which set command must be configured?
A. Certkiller C(config)#line console 0 Certkiller C(configline)# enable password Certkiller
B. Certkiller C(config)#line console 0 Certkiller C(configline)# enable secret Certkiller Certkiller C(configline)# login
C. Certkiller C(config)#line console 0 Certkiller C(configline)# password Certkiller Certkiller C(configline)# login
D. Certkiller C(config)#line vty 0 Certkiller C(configline)# enable password Certkiller
E. Certkiller C(config)#line vty 0 Certkiller C(configline)# enable secret Certkiller Certkiller C(configline)# login
F. Certkiller C(config)#line vty 0 Certkiller C(configline)# password Certkiller Certkiller C(configline)# login

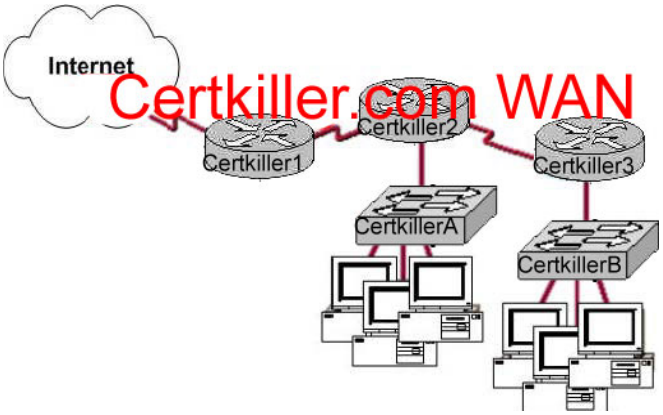
Answer: F

Explanation:
CLI Password Configuration:

Access From	Password Type	Configuration
Console	Console password	Line console 0 Login Password faith
Auxiliary	Auxiliary password	Line aux 0 Login Password hope
Telnet	Vty password	Line vty 0 4 Login Password love

Reference: Cisco CCNA intro 640811

QUESTION 48
Network topology exhibit

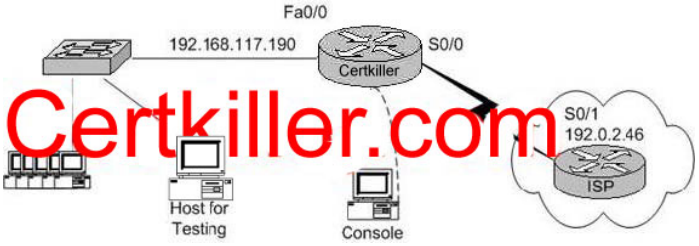


As a network technician at Certkiller .com you would like to implement NAT in the network shown in the exhibit. You would like to allow inside hosts to use a private addressing scheme. Where should NAT be configured?
A. Certkiller 1 router
B. Certkiller 2 router
C. Certkiller 3 router
D.All routers
E.All routers and switches

Answer: A

Explanation:
NAT should always be configured on the borderdevice. It can be a borderrouter or a Firewall.

QUESTION 49
Network topology exhibit



You work as a network administrator at Certkiller .com. You are configuring a router to provide Internet access. The ISP has provided Certkiller .com with six public IP addresses of 198.18.131.65, 198.18. 131.66, 198.18. 131.67, 198.18. 131.68, 198.18. 131.69, and, 198.18. 131.70. Certkiller .com has 62 hosts that need access to the Internet simultaneously. The hosts in the Certkiller .com LAN have been assigned private space addresses in the range of 192.168.117.129 192.168.117.190.
The following have already been configured on the router:
1.The basic router configuration
2.The appropriate interfaces have been configured for NAT inside an NAT outside.
** MISSING**
Simulation.

Answer:

Explanation:
Network has 63 hosts all requiring access to internet simultaneously. Only 6 public IP's have been assigned, therefore
PATneeds to be configured.Interfaces have been configured for NAT Inside and NAT outside, so all that remains to be done
is:
router(config)#ipnatinside source list 1 interface Serial0 overloadrouter(config)#accesslist 1 permit 192.168.117.129 0.0.0.61

QUESTION 50
Which command will configure a default route on a router?
A.router(config)# ip route 0.0.0.0 10.1.1.0 10.1.1.1
B.router(config)# ip defaultroute 10.1.1.0
C.router(config)# ip defaultgateway 10.1.1.0
D.router(config)# ip route 0.0.0.00.0.0.010.1.1.1

Answer: D

Explanation:
Ip route 0.0.0.00.0.0.0<ipaddress of the interface> command is used to configure a default route.
So, Choice D is correct.

QUESTION 51
In which situation would the use of a static route be appropriate?
A.To configure a route to the first Layer 3 device on the network segment.
B.To configure a route from an ISP router into a corporate network.
C.To configure a route when the administrative distance of the current routing protocol is too low.
D.To reach a network is more than 15 hops away.
E.To provide access to the Internet for enterprise hosts.

Answer: B

Explanation:
Static routes are special routes that the network administrator manually enters into the router configuration. Stub networks
are the ideal candidate for static routes.
There is no need to run a routing protocol over the WAN links between an ISP Router and a corporate network.

QUESTION 52
When are packets processed in an inbound access list?
A. Before they are routed to an outbound interface.
B.After they are routed for outbound traffic.
C.After they are routed to an outbound interface while queuing.
D.Before and after they are routed to an outbound interface.
E.Depends on the configuration of the interface
F.None of the above

Answer: A

Explanation:
When a packet is received on an interface with an inbound access list configured, the packets are matched against the
access list to determine if they should be permitted or denied.After this check, the packets are processed by the routing
function.The access list check is always done first.
Incorrect Answers:
B, C.The packets are always processed by the inbound access list prior to being routed.
D.All packets are always checked against a specific access list only once.While packets traversing through a router may
be checked against different access lists for each interface and in each direction (inbound and outbound), each access
list is always only consulted once.

QUESTION 53
Which of the following are benefits provided with access control lists (ACLs)? (Select all that apply)
A.ACLsmonitor the number of bytes and packets.
B.Virus detection.
C.ACLsdentifyinteresting traffic for DDR.
D.ACLsprovide IP route filtering.
E.ACLsprovide high network availability.
F.ACLsclassify and organize network traffic.

Answer: C, D

Explanation:
IP access control lists allow a router to discard some packets based on criteria defined by the network engineer. The
goal of these filters is to prevent unwanted traffic in the network whether to prevent hackers from penetrating the
network or just to prevent employees from using systems they should not be using.
IP access lists can also be used to filter routing updates, to match packets for prioritization, to match packets for prioritization, to match packets for VPN tunneling, and to match packets for implementing quality of service features.It is
also used to specify the interesting traffic, which is used to trigger ISDN and Dial on Demand Routing (DDR) calls.
Reference:
CCNA SelfStudy CCNA ICND exam certification Guide (Cisco Press, ISBN 158720083X) Page 427
Incorrect Answers:
A, F.ACLsdo not provide for management and traffic analysis functions such as the monitoring and organization of
network packets.
B.WhileACLs

detection and removal.
E.ACLsalone do not provide for any additional level of network availability.

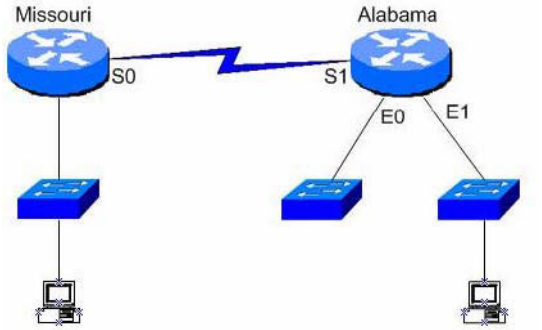
QUESTION 54
On the exhibit below, match the access list conditions on the left side with the corresponding design goal on the right side. (Not all the conditions will be used)

Answer:

Explanation:

1. permittcpany 192.168.47.4 0.0.0.0eq80 Allow all Web access to server 192.168.47.42. deny ip any 192.168.47.32 0.0.0.15 Block all IP access to subnet192.168.47.32/283. denyicmpany 192.168.47.5 0.0.0.0 Block
all ping messages only to server 192.168.47.5/27Note:Should be denyicmpany 192.168.47.5 0.0.0.0 to block all ping
messages ONLYto server ... with 0.0.0.0 wildcard
4. permit ip 192.168.45.32 0.0.0.31 192.168.47.32 0.0.0.15 Allow accessfrom subnet 192.168.45.32/27 to subnet
192.168.47.32/28

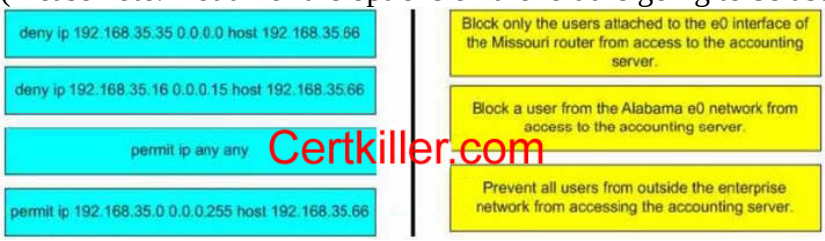
QUESTION 55
The Certkiller network consists of theMissouriandAlabamarouters as shown below:



You are a network administrator of a large corporation situated in theUnited States.
The network interfaces are:

Missouri e0 192.168.35.17/28;s0- 192.168.35.33/28;
Alabama: e0 192.168.35.49/ 28 e1 192.168.35.65/28, s1 192.168.35.34/ 28.
The address of the accounting server is:
Accounting Server: 192.168.35.66/28.

With your mouse; drag the access list conditions on the left with their correspondingobjectives on the right.
(Please note: Not all of the options on the left are going to be used.)



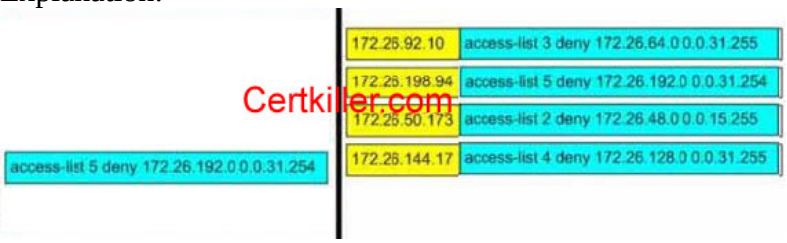
Answer:

Explanation:

QUESTION 56
Choose the correct access list statements form the left and drag them to their corresponding IP address on the right. (Not all the access list statements are used.)

Answer:

Explanation:

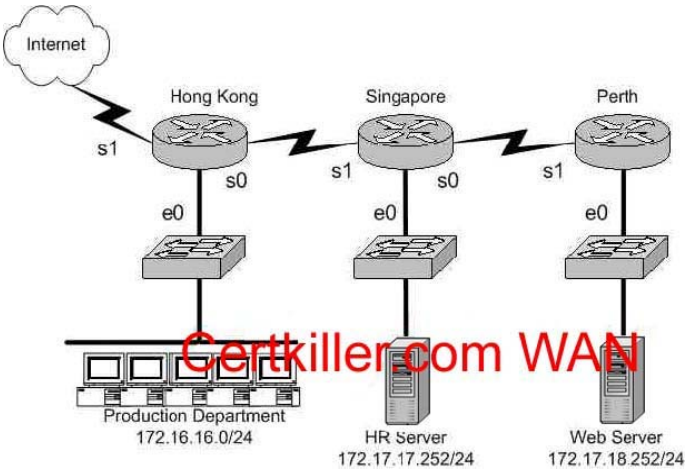


172.26.192.0 = 172.26.11000000.00000000
0.0.31.254 = 0.0.00011111.11111110
172.26.198.94 = 172.26.11000110.01011110

Since only 0 should be matched, the last bit HAS to be 0
In case of access list 6 deny 172.26.192.1 0.0.31.254
the last bit is 1 and then the matched address would not go through

---

QUESTION 57
The Certkiller worldwide WAN is shown in the exhibit below:



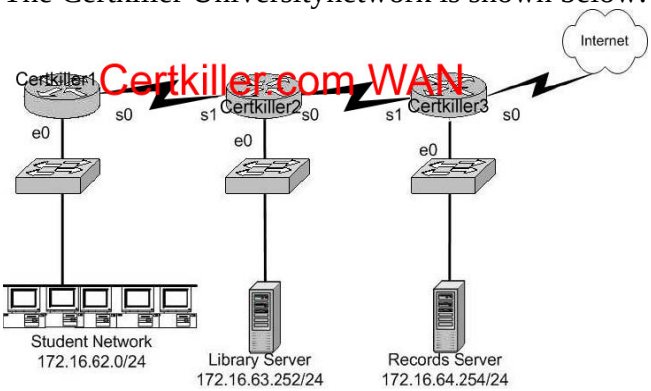
On theHong Kongrouter an access list is needed that will accomplish the following:
1.Allow a Telnet connection to the HR Server through the Internet
2.Allow internet HTTP traffic to access thewebserver
3.Block any other traffic from the internet to everything else
Which of the following access list statements are capable of accomplishing these three goals? (Select all that apply)
A.accesslist 101 permittcpany 172.17.18.252 0.0.0.0eq80
B.accesslist 1 permittcpany 172.17.17.252 0.0.0.0eq23
C. accesslist 101 permittcp172.17.17.252 0.0.0.0 anyeq23
D.accesslist 101 denytcpany 172.17.17.252 0.0.0.0eq23
E.accesslist 101 denytcpany 172.17.18.252 0.0.0.0eq80
F.accesslist 101 permittcpany 172.17.17.252 0.0.0.0eq23

Answer: A, F

Explanation:
Because of the implicit deny rule at the end of every access list, only two choices need to be made, as the final requirement is automatic.
A.This is correct as we need to allow the access list to allow port 80 connections (port 80 = HTTP) from anywhere, to
the web server's IP address.
F.This will fulfill the first requirement, as it allows port 23 (Telnet) traffic from anywhere.
Incorrect Answers:
B.The answer asks you to create an access list, a single one. The answer choices require you to choose two answers.
For two statements to be on the same list, you need them to have the same number. So answer choice B can be ruled
out by process of elimination.In addition to this, access list 1 is an illegal number, since we need an extended

access list
to use source and destination information, and extended access lists are in the 100199
range.
C.This is incorrect as it allows telnet traffic from the HR server to the Internet, but we need it to be the other way
around.
D, E.Because of the implicit deny any rule, we need to only be concerned with the access rules that permit traffic.

QUESTION 58
The Certkiller Universitynetwork is shown below:



In the above network, an access list was created inorderto prevent students and outsiders on the internet from changing student files in the Records Server, while still allowing other departments in the enterprise access. The access control list was applied to the e0 interface of the Certkiller 3 router going outbound.
Which two of the following conditions below were contained in the access control list?(Select two answer choices)
A.permit 172.16.64.254 0.0.0.0 172.16.0.0 0.0.255.255
B.permit 172.16.0.0 0.0.255.255 172.16.64.254 0.0.0.0
C.deny 172.16.64.254 0.0.0.0 172.16.62.0 0.0.0.255
D.deny 172.16.62.0 0.0.0.255 172.16.64.254 0.0.0.0
E. deny 172.16.64.254 0.0.0.0 any
F.permit anyany

Answer: B, D

Explanation:
Answer choice B and D together will specifically deny the students and the internet from accessing the Records Server,
while still allowing access to the Library Server.It is important to note that the rules in any access list are consulted in
order.Because of this, the actual access list used in this case would need to have choice D first, and then choice B.If this
was not done, then traffic coming from the students would be first allowed, before the rule denying them was consulted.
The rule to prevent traffic from the Internet to the records server is handled by the implicit deny any rule.

QUESTION 59
Which one of the access control list statements below will deny all telnet connections to subnet 10.10.1.0/24?
A.accesslist 15 deny telnet any 10.10.1.0 0.0.0.255eq23
B.accesslist 115 denyudpany 10.10.1.0eqtelnet
C.accesslist 15 denytcp10.10.1.0 255.255.255.0eqtelnet
D.accesslist 115 denytcpany 10.10.1.0 0.0.0.255eq23
E.accesslist 15 denyudpany 10.10.1.0 255.255.255.0eq23

Answer: D

Explanation:
Telnet uses port TCP port 23.Since we are using source and destination IP address information, an extended access list
is required.Extended access lists are access lists in the 100199 range.
Incorrect Answers:
A, C, E.These access lists are numbered 15.Standard access lists are numbered 199, and in this case an extended access lists is required.
B.This access list specifies UDP port 23, and TCP port 23 is the port used by telnet.

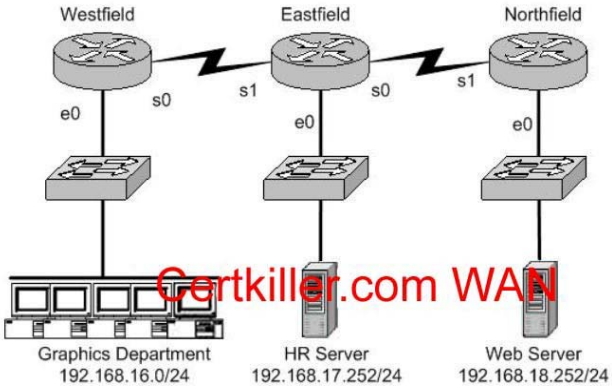
QUESTION 60
Which of the following answer choices are correct characteristics of named access list? (Select all that apply)
A.You can delete individual statements in a named access list
B. Named access lists require a numbered range from 1000 to 1099.
C.Named access lists must be specified as standard or extended.
D.You can use theip accesslistcommand to create named access lists.
E.You cannot delete individual statements in a named access list.
F.You can use theip namegroupcommand to apply named access lists.

Answer: A, C, D

Explanation:
Named access lists have two advantages over numbered access lists: the first one being that a name is easier to remember and the second being the fact that you can delete individual statements in a named access list. That makes A
correct.
When you create a named access list you use the ip accesslist command, and you have to specify whether it's standard
or extended (since there are no numbers). So C and D are both correct. An example from the textbook is the command, "ip accesslist extended Barney"
Incorrect Answers:
B.Named access lists don't require a number range from 1000 to 1099 so B is incorrect.
E.Answer choice E is not true.
F.This is incorrect because the command ip namegroup
is absolutely unnecessary.
Reference:CCNA SelfStudy

CCNA ICND exam certification Guide (Cisco Press, ISBN 158720083X) Pages 443-445

QUESTION 61
The Certkiller WAN is displayed below:

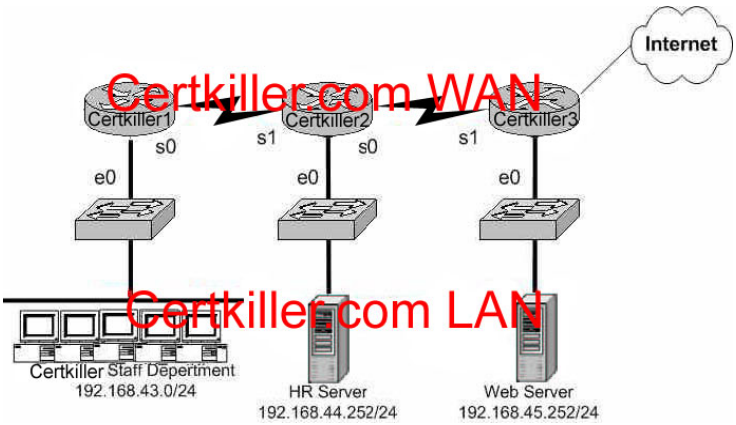


An access list needs to be implemented that will block users from the Graphics Department fromTelnettingto the HR server; and this list is to be implemented on the Ethernet 0 interface of the Westfield router for the inbound direction.All other office communications should be allowed.Which of the following answer choices would accomplish this?
A.denytcp192.168.16.0 0.0.0.255 192.168.17.252 0.0.0.0eq23
permit ip anyany
B.permit ip anyany
denytcp192.168.16.0 0.0.0.255 192.172.252 0.0.0.0eq23
C. permit ip anyany
denytcp192.168.17.252 0.0.0.0 192.168.0 0.0.0.255eq23
D.denytcp192.168.18.262 0.0.0.0 192.168.16.0 0.0.0.255eq23
permit ip anyany

Answer: A

Explanation:
The syntax for an access list is the source address first then the destination address. In this case the source address is
192.168.16.0/24 and the destination address 192.168.17.252.The "permit ip anyany" statement is required because of
the implicit deny all at the end of every access list.Generally speaking, all access lists require at least one permit statement, otherwise all traffic will be denied through the interface.

QUESTION 62
The Certkiller WAN is shown below:



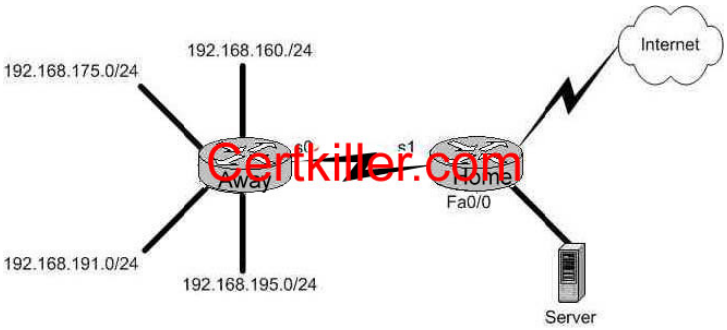
Your goal is to allow FTP access to the HR server from the internet, while blocking out all other traffic. Which of the access list configurations below will fulfill your goal? (Select two answer choices)

A. Accesslist 101 Permittcpany 192.168.44.252 0.0.0.0eq21
B. Accesslist 101 Permittcpany 192.168.44.252 0.0.0.0eq20
C. Accesslist 101 Permittcp192.168.44.252 0.0.0.0 anyeq20
D. Accesslist 101 Permittcp192.168.44.252 0.0.0.0 anyeq21
E. Accesslist 101 Denytcpany 192.168.44.255 0.0.0.0gt21
F. Accesslist 101 Permittcp192.168.44.255 0.0.0.0 anygt21

Answer: A, B

Explanation:
FTP uses two ports:TCP port 20 and TCP port 21.A and B allows all hosts to access the HR server through ftp and
the implicit deny any rule will block everything else.
Incorrect Answers:
C, D.These two choices have the source and destination networks switched around.These two lists combined together
will permit all FTP traffic sourced from the HR server and destined to the Internet.In this case, however, we wish to
have an access list permitting FTP sourced from the Internet and destined to the HR server.
E, F.Thegtdenotes "greater than", meaning that all TCP packets greater than port 21 will match the access list.This is not
the desired result for this question.

QUESTION 63
The Certkiller Network is displayed in the flowing diagram:



You need to place an access list on the Fa0 interface of the Home router; that will deny access to all hosts that lie within the range 192.168.160.0192.168.191.0.
Hosts in the 192.168.195.0 network should be granted
full access. Which one of the following answer choices fulfills your needs?
A. accesslist 1 deny 192.168.163.0 0.0.0.255
B.accesslist 1 deny 192.168.128.0 0.0.127.255
C.accesslist 1 deny 192.168.0.0 0.0.255.255
D.accesslist 1 deny 192.168.0.0 0.0.31.255

Answer: D

Explanation:
This question is really more of an inverse subnet masking questions than a security question.Your goal is to block access
to the host range 192.168.160.0 192.168.191.0 while allowing everything else (including hosts from 192.168.195.0)
full access. Answer choice D is correct because the address and mask are numbered correctly.

QUESTION 64
Which of the following access list statements would deny traffic from a specific host?
A.Router(config)#accesslist 1 deny 172.31.212.74 any
B.Router(config)#accesslist 1 deny 10.6.111.48 host
C.Router(config)#accesslist 1 deny 172.16.4.13 0.0.0.0
D.Router(config)#accesslist 1 deny 192.168.14.132 255.255.255.0
E.Router(config)#accesslist 1 deny 192.168.166.127 255.255.255.255

Answer: C

Explanation:
Only choice C is the correct syntax for a specific host.The access list is denying all traffic from the host with IP address
172.16.4.13.It is important to note that in an access list, the subnet mask is the inverse.Normally, a host subnet mask is
255.255.255.255, but in an access list it is 0.0.0.0.
Incorrect Answers:
A.The syntax is incorrect here, as there is no subnet mask at all specified.
B.This would be an acceptable choice, if the "host" keyword were placed in front of the IP address, not after.
D.The subnet mask here includes the entire class C network here, not an individual host.

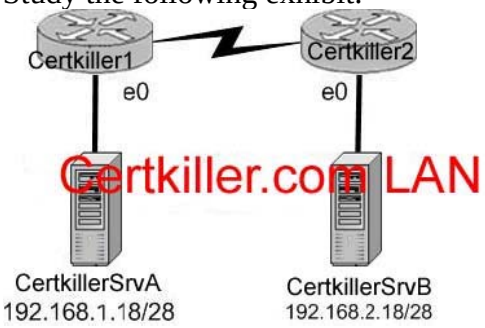
E.In an access list, the subnet mask is an inverse mask.The mask specified here would be equivalent to all 0's in a
subnet mask, meaning that the don't care bits apply to the entire address.

QUESTION 65
Which IP address and wildcard mask would you use in your ACL to block all the hosts in the subnet 192.168.16.43/28?
A. 192.168.16.32 0.0.0.16
B.192.168.16.43 0.0.0.212
C.192.168.16.0 0.0.0.15
D.192.168.16.32 0.0.0.15
E.192.168.16.0 0.0.0.31
F.192.168.16.16 0.0.0.31

Answer: D

Explanation:
Since there are 28 bits in the subnet mask, we can find the inverse mask by reversing the 1's and 0's.
/28=11111111.11111111.11111111.11110000
/28 Inverse =00000000.00000000.00000000.00001111 =192.168.16.32/15
The address 192.168.16.32 and the wildcard mask 0.0.0.15 is the correct answer as shown.This will match all addresses in the 192.168.16.32192.168.16.47 range.

QUESTION 66
Study the following exhibit:



Inorderto control access on the Certkiller network, the following access list is created:
accesslist 101 permittcp192.168.1.16 0.0.0.15 192.168.2 16 0.0.0.15eq23
What would happen if you applied the following ACL to any one of the Certkiller routers in the above exhibit?On what interface and what direction should you apply it?Once applied, what will this access list accomplish? (Select all valid answer choices)
A.Telnet traffic from 192.168.1.16 0.0.0.15 to 168.2.16 0.0.0.15 is allowed.
B.SMTP traffic from 192.168.1.16 0.0.0.15 to 168.2.16 0.0.0.15 is allowed.
C.The ACL is configured to allow traffic from one specific host to another.
D.The ACL should be applied inbound to the e0 interface of Router Certkiller 1.
E.The ACL should be applied outbound to the e0 interface of Router Certkiller 1.

Answer: A, D

Explanation:
This is a two part question.The first part is the type of traffic that will match this specific access list entry.Since telnet
uses TCP port 23, choice B is correct.
Next, to determine which interface and which direction to apply the access list, we see that the source of the traffic is the
192.168.1.16/28 network, while the destination is the 192.168.2.16/28 network.Therefore, only choice D makes sense.
Incorrect Answers:
B.SMTP uses TCP port 25.
C.There is a /15 network mask for both the source and destination in this access list, which translates to a /28 network.
E.This would not be useful if applied to the outbound, as no traffic would match then.Note that if this answer had stated
that the access list be placed on the outbound serial (WAN) interface, then this would have been an acceptable choice.

QUESTION 67
A standard IP access list is applied to an Ethernet interface of a router.What does this standard access list filter on?

A. The source and destination addresses
B. The destination port number
C. The destination address
D. The source address
E. All of the above

Answer: D

Explanation:
The standard IP accesslist will only filter on the source address contained in the packet.
Extended access lists can filter on the source and destination address and port information.

QUESTION 68
The Certkiller network is subnetted using 29 bits for the subnet mask. Which wild card mask should be used to configure an extended access list to permit or deny access to an entiresubnetwork?

A. 255.255.255.224
B. 255.255.255.248
C. 0.0.0.224
D. 0.0.0.8
E. 0.0.0.7
F. 0.0.0.3

Answer: E

Explanation:
Wild card masks start with 0.0.0.x. The subnet used in this example is 29 bits, or subnet mask 255.255.255.248. Therefore, we are left with 7 hosts in the final octet (255248) so the answer is 0.0.0.7.

QUESTION 69
Exhibit:

Refer to the exhibit. The network administrator wants to prevent computers on the 192.168.23.64/26 subnet from accessing the 192.168.23.128/26 subnet via FTP. All other hosts should be allowed to access. What commands should be entered on the router to accomplish this task?
A.Router(config)#accesslist 101 denytcp192.168.23.64 0.0.0.63 192.168.23.128 0.0.063eqftpRouter(config) #accesslist 101 permit ip anyanyRouter(config)#interface fa0/0Router(configif)# ip accessgroup 101 in
B.Router(config)#accesslist 101 denytcp192.168.23.64 0.0.0255 192.168.23.128 0.0.0.255eqftpRouter(config)# accesslist 101 permit ip anyanyRouter(config)#interface fa0/0Router(configif)# ip accessgroup 101 in
C.Router(config)#accesslist 101 denytcp192.168.23.64 0.0.063 192.168.23.128 0.0.0.63eqftpRouter(config) #accesslist 101 permit ip anyanyRouter(config)#interface fa0/0Router(configif)# accesslist 101 out
D.Router(config)#accesslist 101 denytcp192.168.23.64 0.0.0.255 192.168.23.128 0.0.0.255eqftpRouter(config) #accesslist 101 permit ip anyanyRouter(config)#interface fa0/1Router(configif)# ip accessgroup 101 in
E.Router(config)#accesslist 101 denytcp192.168.23.128 0.0.0.63 192.168.23.64 0.0.0.63eqftpRouter(config)# accesslist 101 permit ip anyanyRouter(config)#interface fa0/1Router(configif)# ip accessgroup 101 in
F.Router(config)#accesslist 101 denytcp192.168.23.128 0.0.0.255 192.168.23.128 0.0.0.255eqftpRouter(config) #accesslist 101 permit ip anyanyRouter(config)#interface fa0/1Router(configif)# ip accessgroup 101 out

Answer: A

QUESTION 70
The Certkiller Corporation consists of the head office inNew Yorkwith its regional offices in:Chicago,Detroit, Philadelphia,Toronto, andAtlanta.These offices need to be connected in a WAN, and Certkiller wishes to do this via a hub and spoke arrangement that will utilize packetswitched technology.
Which one of the WAN technologies below would be the best choice for Certkiller ?
A.ISDN
B.Wireless
C.Frame Relay
D.T1 leased line
E.ATM
F.VPN

Answer: C

Explanation:
To provide efficient IP multicast support in Frame Relay networks, the underlying Frame Relay network architecture
should be designed in a "hub and spoke" topology (hierarchical topology). The hub and spoke topology is also named a
"star" topology, because the central hub acts as the center of a star and the connections to the remote sites act as

light
radiating from the star.In the hub and spoke topology, each remote router may also act as a hub and each connection to
another remote site may act as a spoke (in a hierarchical fashion). In a multiple hub topology, the load associated with
sending broadcast and multicast data can be distributed across multiple central hub sites rather than concentrated at a
single central site. Thus, even though data may require extra hops to get to a particular location, data delivery is more
efficient in a hub and spoke network than in other network topologies. This design also provides a scalable, hierarchical
network that greatly reduces the resource requirements of the central router, allowing the Frame Relay network to utilize
the advantages of IP multicast applications.
Incorrect Answers:
A, B, D.These networks are typically not Hub and spoke, and do not operate via packet switching.
E.ATM is a somewhat viable choice, as they work in a similar fashion to frame relay.However, ATM would be considering a cell switching technology, not a packet switching technology.
F.VPN'swork through the use of encryption, tunnels, or MPLS.

QUESTION 71
You are a systems administrator of an HR company inDallas.You want to connect your company's head office with a branch office inDetroit.To do this, you want to use two data link layer encapsulations: one exclusively for data and the other exclusively for signaling. Which one of the following WAN services would best suit your needs?
A.ISDN
B.ATM
C.FDDI
D.ATX
E.Frame Relay

Answer: A

Explanation:
ISDN Q.931 messages are used for signaling.
ISDN B channels are used to transport data.
Reference:
CCNA SelfStudy CCNA ICND exam certification Guide (Cisco Press, ISBN 158720083X) Page 327

QUESTION 72
A brand new network application is required for the Acme Company, and they are considering the use of a connectionless service.What are the characteristics of a connectionless service? (Select two answer choices)

A. It uses a Reliable transport mechanism.
B. It uses a Nonreliable transport mechanism
C. It is less bandwidthintensive than connection oriented services

D. it uses handshaking

Answer: B, C

Explanation:
The Transport layer is a good example of how both a connectionless and connection oriented service works. UDP is a connectionless service that is considered unreliable, but it uses less bandwidth then a connection oriented
service.
TCP is a connection oriented service and is considered reliable because it uses handshaking to create the service and
acknowledgments.
Incorrect Answers:
A, D.These are the characteristics of a connection oriented service, such as TCP.

QUESTION 73
You are a network administrator of a small company that's experiencing explosive growth. Within the next quarter the company is going to open up seven more regional offices with the potential of more in the future. These regional offices send and receive mission critical traffic, and will need to be connected to the head office around the clock.However, your head office doesn't have any additional free ports available on the router.Which of the following technologies would be the best choice for this new WAN?
A.Frame Relay
B.Broadband cable
C.ISDNBRI
D.ADSL
E.Dedicated PPP/HDLC links
F.ISDN

Answer: A

Explanation:
Frame Relay is a dedicated service that would be acceptable for a mission critical WAN application, and multiple
locations can connect to a single router port.The use of frame relayPVCscan connect all the locations together, while
using only one physical port.
Incorrect Answers:
B, D.While DSL and Cable Modem are acceptable for home use, they have not yet achieved the availability and reliability associated with dedicated WAN technologies such as ATM, Frame Relay, and Point to Point links.
C, F.ISDN is usage based, and would it would be cost prohibitive to keep the ISDN links up at all times.
E.Dedicated leased lines would require a separate router port for each link.

QUESTION 74
The Certkiller WAN is displayed in the diagram below:

Which dynamic routing protocol should be recommended for the Certkiller network shown in the graphic above? (Choose three)
A.OSPF
B.RIP version 1
C.RIP version 2
D.IGRP
E.EIGRP

Answer: A, C, E

Explanation:
In this network, the 192.168.23.0/24 network is subnetted into two other networks.
Because this class C network is being subnetted, a routing protocol that supports variable length subnet mask information is required.OSPF, EIGRP, and RIP version 2 all support VLSM information to be shared across the network.
Incorrect Answers:
B, D.RIP version 1 and IGRP do not support VLSM, which will be required inorderfor this network to have the two
LANs both be reachable.

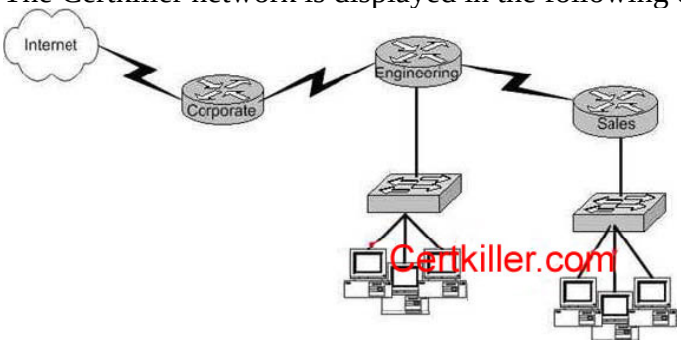
QUESTION 75
The Certkiller network is implementing dialup services for their remote employees. Certkiller uses several different Layer 3 protocols on the network. Authentication of the users connecting to the network is required for security. Additionally, some employees will be dialinglong distance and will needcallbacksupport.
Which protocol is the best choice for these remote access services?
A.802.1
B.Frame relay
C.HDLC
D.PPP
E.SLIP
F.PAP

Answer: D

Explanation:
PPP is the Point to Point Protocol, and is used in the majority of dialup connections.PPP includes support for numerous features, including caller ID check, PPPcallback, and security support.For security, either CHAP or PAP can
be used, although CHAP is normally used as it is more secure.PPP is a layer 2 protocol that can support any

layer 3
protocols.

QUESTION 76
The Certkiller network is displayed in the following diagram:



A network administrator would like to implement NAT in the network shown in the graphic to allow inside hosts to use a private addressing scheme.
Where should NAT be configured?
A.Corporate router
B.Engineering router
C.Sales router
D.All routes
E.All routes and switches

Answer: A

Explanation:
Network Address Translation (NAT) can be used to hide the private IP addressing scheme of the entire network from
the Internet.To do this, NAT needs to only be configured on the router that resides between the Internet and the rest of
the private internal network.In this case, it needs to only be implemented on the Corporate router.

QUESTION 77
Certkiller has 25 computers and decides to connect the network to the Internet. Certkiller would like for all of the computers to have access to the Internet at the same time, but Certkiller only has four usable publicly routable IP addresses.
What should be configured on the router so that all computers can connect to the Internet simultaneously?
A.Static NAT
B.Global NAT
C.Dynamic NAT
D.Static NAT withACLs
E.Dynamic NAT with overload

Answer: E

Explanation:

NAT overload, also called many to one NAT or Port Address Translation (PAT) allows for many IP hosts to share a
single IP address when connecting to the outside.In this case, the use of dynamic NAT with overloading will allow for
the 25 hosts to use an IP address from the NAT pool, which will contain the 4 public IP addresses.

QUESTION 78
A Cisco router has been configured with the following command:
IPnatpoolnattest
192.168.6.10 192.168.6.20netmask255.255.255.0
This is an example of what type of NAT?
A.Static NAT
B.Dynamic NAT
C.Dynamic NAT with overload
D.Port Address Translation
E.None of the above

Answer: B

Explanation:
The configuration statement in this example is used to define a pool of IP addresses to be used for dynamic NAT
translations.
Incorrect Answers:
A.Static NAT is used for 1 to 1 translation entries, using the "static" configuration keyword.
In this example a range of addresses are being defined for the use in a pool.
C, D.With NAT overload, also known as Port Address Translation (PAT), the keyword "overload" is added at the end
of the configuration statement.

QUESTION 79
You are a technician at Certkiller . Your newly appointed Certkiller trainee is setting up a new frame relay connection to a remote branch and wants to know what the valid options for frame relay LMI types are.
What would your reply be? (Choose all that apply.)
A.EIA/TIA
B.Q.932
C.Q.933 A
D.IEEE
E.IETF
F.Cisco
G.ANSI

Answer: C, F, G

Explanation:
The following describe the various frame relay LMI options:

NameDocumentIOS LMI Type
*CiscoProprietarycisco
*ANSIT1.617 Annex Dansi
*ITUQ.933. Annex Aq.933a
Reference:
CCNA SelfStudy CCNA ICND exam certification Guide (Cisco Press, ISBN 158720083X) Page 382

QUESTION 80
Certkiller has five regional offices that are located in different cities. The IT staff is evaluating WAN technologies to interconnect the regional offices to corporate headquarters. Each of the regional offices should be connected to the corporate headquarters in a hub and spoke arrangement using a packetswitched technology. Which of the following WAN technologies will fulfill these requirements?
A.Frame Relay
B.ISDN
C.T1 leased lines
D.Wireless

Answer: A

Explanation:
There are three packet switching technologies which can be used :
1.Frame Relay
2.X.25
3.ATM
So, choice A is right.

QUESTION 81
Which of the following describe private IP addresses? (Choose two)
A.Addresses chosen by a company to communicate with the Internet.
B.Addresses that cannot be routed through the public Internet.
C.Addresses that can be routed through the public Internet.
D.A scheme to conserve public addresses.
E.Addresses licensed to enterprise or ISPs by an Internet registry organization.

Answer: B, D

Explanation:
Private IP address space has been allocated via RFC 1918. This means the addresses are available for any use by anyone
and therefore the same private IP addresses can be reused. However they are defined as not routable on the public
Internet. They are used extensively in private networks due to the shortage of publiclyregisterable IP addresses and
therefore network address translation is required to connect those networks to the Internet.

QUESTION 82
A newly assigned trainee wants to know from you what the "Inside Global" address represents in the configuration of NAT. What can you tell him?
A.The MAC address used by inside hosts to connect to the Internet.
B.The summarized address for all internal subnetted addresses.
C.A private IP address assigned to a host on the inside network.
D.A registered address that represents an inside host to an outside network.
E.A unique IP address used on an intranet.

Answer: D

QUESTION 83
Which of the following commands will you use to display the configuration register setting on a router?
A.show boot
B.show flash
C.show register
D.show version
E.show config

Answer: D

Explanation:
show version
To display the configuration of the system hardware, the software version, the names and sources of configuration files,
and the boot images, use theshow versioncommand in EXEC mode.
Examples
The following is sample output from the show version command:
Router1>show version
CiscoInternetworkOperating System Software
IOS (tm) 7200 Software (C7200JM), Experimental Version 11.3(19970915:164752) [
hamptonnitrobaseline 249]
Copyright (c) 19861997 byciscoSystems, Inc.
CompiledWed 08Oct9706: 39byhampton
Image textbase: 0x60008900, database: 0x60B98000
ROM: System Bootstrap, Version 11.1(11855) [beta 2], INTERIM SOFTWARE
BOOTFLASH: 7200 Software (C7200BOOTM), Version 11.1(472), RELEASE SOFTWARE (fc
1)
Router1 uptime is 23 hours, 33 minutes
System restarted by abort at PC 0x6022322C at10:50:55 PDTTue Oct 21 1997
System image file is "tftp://171.69.1.129/hampton/nitro/c7200jmz"
cisco7206 (NPE150) processor with 57344K/8192K bytes of memory.
R4700 processor, Implementation 33, Revision 1.0 (512KB Level 2 Cache)
Last reset from power-on
Bridging software.
X.25 software, Version 3.0.0.

SuperLATsoftware copyright 1990 by Meridian Technology Corp).
TN3270 Emulation software.
8 Ethernet/IEEE 802.3 interface(s)
2FastEthernet/IEEE 802.3 interface(s)
4 Token Ring/IEEE 802.5 interface(s)
4 Serial network interface(s)
1 FDDI network interface(s)
125K bytes of nonvolatile
configuration memory.
1024K bytes of packet SRAM memory.
20480K bytes of Flash PCMCIA card at slot 0 (Sector size 128K).
20480K bytes of Flash PCMCIA card at slot 1 (Sector size 128K).
4096K bytes of Flash internal SIMM (Sector size 256K).
Configuration register is 0x0
Reference:
http://www.cisco.com/univercd/cc/td/doc/product/software/ios123/123cgcr/fun_r/cfr_1g10.htm#1033030

QUESTION 84
You work as network administrator at Certkiller . Your nonCisco certified assistant has been working on Router CK1 . He incorrectly configured the router interface with a subnet broadcast address. You want to remove the incorrect IP address and replace it with the first usable IP address for the same subnet.
Which set of commands will you issue?
A. CK1 (configif)# clear ip address 190.160.45.31 255.255.255.240
CK1 (configif)# ip address 190.160.45.17 255.255.255.240
B. CK1 (configif)# no ip address 190.160.45.23 255.255.255.252
CK1 (configif)# ip address 190.160.4.21 255.255.255.252
C. CK1 (configif)# no ip address 190.160.45.23 255.255.255.240
CK1 (configif)# ip address 190.160.45.20 255.255.255.240
D. CK1 (configif)# clear ip address 190.160.45.23 255.255.255.0
CK1 (configif)# no address 190.160.45.17 255.255.255.0
E. CK1 (configif)# no ip address 190.160.45.15 255.255.255.252
CK1 (configif)# ip address 190.160.45.9 255.255.255.252

Answer: B

Explanation:
To set aprimary or secondary IP address for an interface, use theip addressinterface configuration command. To remove an IP address or disable IP processing, use thenoform of this command.
CurrentHostRange= 190. 160. 45. 17 to 190. 160. 45. 30

QUESTION 85
You are a technician at Certkiller . Your newly appointed Certkiller trainee wants to know what is specific for a global command.
What should you tell her?
A.A command that is available in every release of IOS.
B.A command that can be entered in any configuration mode.

C.A command that supports all protocols.
D.A command that is implemented in all IOS versions.
E.A command that is set once and affects the entire router.

Answer: E

Explanation:
When you enter global configuration mode and enter a command, it is applied to the running configuration file that is
currently running in ram.The configuration of a global command affects the entire router.An example of a global
command is one used for the hostname of the router.
Incorrect Answers:
A.Global configuration commands must be performed while in global configuration mode.For example, when you are in
the interface configuration mode, you most likely will need to exit out into global mode to type in the commands.
B.Global commands do not necessarily support every protocol.
C.This is not necessarily true, since there are certain global commands that are supported on one feature set that are not
on a different feature set of IOS.
E. Global commands can become outdated, and can be replaced by newer commands in the newer releases of IOS.

QUESTION 86
Which one of the following parameters is the very first thing that needs to be configured as part of the IGRP routing process?
A.The wild card mask
B.The IP address
C.The IP address mask
D.The metric weights
E.The Autonomous System number

Answer: E

Explanation:
You configure IGRP just like RIP, except that the router igrp command has an additional parameter the autonomous
system (AS) number. The term autonomous system refers to a network that is within the control of a single company or
organization. The term AS number refers to a number assigned to a single company or organization when it registers its
connection to the Internet. However, for IGRP, you do not need a registered AS number. All that is needed for IGRP
to work is for all the routers to use the same AS number.
Example configuration:

Router EIGRP 1
Network 10.0.0.0
In this example, 1 is the AS number chose for EIGRP process 1.

QUESTION 87
Which of the following answer choices is an additional parameter which must be supplied before the IGRP routing process can initialize?
A.Connected subnet numbers
B.Register administrative subnet masks
C.IP address mask
D.Autonomous system number
E.Metric weights

Answer: D

Explanation:
You configure IGRP just like RIP, except that the router igrp command has an additional parameter the autonomous
system (AS) number. The term autonomous system refers to a network that is within the control of a single company or
organization. The term AS number refers to a number assigned to a single company or organization when it registers its
connection to the Internet. However, for IGRP, you do not need a registered AS number. All that is needed for IGRP
to work is for all the routers to use the same AS number.
Reference:
CCNA SelfStudy CCNA ICND exam certification Guide (Cisco Press, ISBN 158720083X) Page 165

QUESTION 88
What parameters must you specify when you enable EIGRP routing?

A. The broadcast address, and AS number
B. The network number and AS number
C. EIGRP routing, network number and passive interface
D. EIGRP routing, network number, and AS

Answer: D

Explanation:
To enable EIGRP on your router, you must specify EIGRP routing, the network number, and the AS system number.
Example:
Router EIGRP 33
Network 10.0.0.0
In the case above the AS process number is 33.

QUESTION 89
Which of the following technologies can be used in distance vector routing protocols to prevent routing loops? (Select all valid answer choices)
A.Spanning Tree Protocol
B.Shortest path first tree
C.Linkstate advertisements (LSA)
D.Holddown timers
E. Splithorizon
F.VRRP

Answer: D, E

Explanation:
Distance vector routing protocols use the rule of split horizons and hold down timers to prevent routing loops after a
topology change.
*Splithorizon the routing protocol advertises routes out an interface only if they were not learned from updates entering that interface.
*Holddown timer After finding out that a router to a subnet has failed, a router waits a certain period of time before
believing any other routing information about that subnet.
Incorrect Answers:
A.STP is used in bridged LANs to prevent bridging loops.It is a means for preventing loops at layer two, not layer 3.
B, C.These are two of the mechanisms of Link State Protocols, not distance vector protocols.
F.VRRP is the Virtual Router Redundancy Protocol, which is a standards based method similar to Cisco's proprietary
HSRP.Neither of these two methods deal with distance vector routing protocols.
Reference:
CCNA SelfStudy CCNA ICND exam certification Guide (Cisco Press, ISBN 158720083X) Page 154

QUESTION 90
What is the reason for configuring a passive interface on a router? (Select only one answer)
A.Allows interfaces to share common IP addresses.
B.Allows an interface to remain up without the aid ofkeepalives.
C.Allows a router to send routing and not receive updates via that interface.
D.Allows a routing protocol to forward updates that is missing its IP address.
E.Allows a router to receive routing updates on an interface but not send updates via that interface.

Answer: E

Explanation:
Thepassiveinterfacecommand
is used to control the advertisement of routing information. The command enables the
suppression of routing updates over some interfaces while allowing updates to be exchanged normally over other

interfaces.For any interface specified as passive, no routing information will be sent.Routing information received on that
interface will be accepted and processed by the router.This is often useful for DDR links such as ISDN.

QUESTION 91
The Certkiller WAN is displayed in the diagram below:

You have just added the router Certkiller 1 to your network and wish it to have full connectivity with routers Certkiller 2 and Certkiller 3. Which of the following configurations would suit Certkiller 1 most appropriately?
A. Certkiller 1(config)# router rip
Certkiller 1(configrouter)#network 10.0.0.0
Certkiller 1(configrouter)#network 172.16.0.0
Certkiller 1(configrouter)#network 192.168.1.0
B. Certkiller 1(config)# router rip
Certkiller 1(configrouter)#network 10.0.0.0
Certkiller 1(configrouter)# network 192.168.1.0
C. Certkiller 1(config)# router rip
Certkiller 1(configrouter)#network 10.0.0.0
Certkiller 1(configrouter)#network 172.16.0.0
D. Certkiller 1(config)# router rip
Certkiller 1(configrouter)#network 10.0.0.0

Answer: C

Explanation: When configuring RIP you configure only the directly connected networks that are to be advertised via
the RIP routing process are to be configured.
Incorrect Answers:
A.This choice implies that when configuring rip on a router every possible network in the entire system should be
configured. This is not the case.
B. Certkiller 1 requires the 172.16.0.0 network to be configured, not the 192.168.1.0 network.
D. If the 172.16.0.0 network is omitted, then the other routers in the network will not be able to reach the LAN users of
Certkiller 1 via RIP.
Reference:
CCNA SelfStudy CCNA ICND exam certification Guide (Cisco Press, ISBN 158720083X) page 167

QUESTION 92
A new point to point circuit is installed, connecting Certkiller 1 to Certkiller 2 as shown below:

Users at Certkiller 1 wish to utilize the existing Internet connection at Certkiller 2.To do this, a gateway of last resort needs to be set.What is the command to do this?
A. Certkiller 1(config)#ip route 172.16.4.2 0.0.0.00.0.0.0
B. Certkiller 1(config)#ip route 0.0.0.00.0.0.0S1
C. Certkiller 1(config)#ip route 172.16.4.1 0.0.0.00.0.0.0
D. Certkiller 1(config)#ip route S0 0.0.0.00.0.0.0
E. Certkiller 1(config)#ip route 0.0.0.00.0.0.0172.16.4.2

Answer: E

Explanation:
Setting the default gateway is done by issuing either the "ip route 0.0.0.00.0.0.0serial 0" or the "ip route 0.0.0.00.0.0.0
172.16.4.2" command.The following excerpt provides some additional information:

The ip default-network command and the ip route 0.0.0.0 0.0.0.0 commands accomplish the goal of having the router use a known route as the default for packets that are not matched in the routing table. The ip route 0.0.0.0 0.0.0.0 command uses the fact that network 0.0.0.0 is used by Cisco IOS software to represent the default network.

Incorrect Answers:
A, C.The IP address of the next hop needs to go after the route, not before.
B.This would have been acceptable if the interface specified was S0, not S1.
C.The interface used to forward packets for the route should be placed after the route, not before.

QUESTION 93

You are configuring the serial interface of your Cisco router; which of the following are valid encapsulation types you can use?
(Select all that apply.)
A.Token Ring
B.Ethernet
C.HDLC
D.PPP
E.Frame Relay
F.CHAP

Answer: C, D, E

Explanation:
HDLC, Frame Relay, and PPP are the most common encapsulation types set for serial interfaces in a Cisco router.
HDLC is often used in point to point circuits with Cisco routers on each end.HDLC is Cisco proprietary and offers an
alternative to PPP.

Incorrect Answers:
A, B. Token Ring and Ethernet aren't encapsulation types used on serial interf
F.CHAP is the Challenge Authentication Protocol.It is used for authentication on PPP links.

QUESTION 94
Which of the following OSPF commands, when used together, will put the network 192.168.10.0/24 into OSPF area 0? (Select all valid responses)
A.Router(configrouter)# network 192.168.10.0 0.0.0.255 0
B.Router(configrouter)# network 192.168.10.0 0.0.0.255 area 0
C.Router(configrouter)# network 192.168.10.0 255.255.255.0 area 0
D.Router(config)# router ospf 0
E.Router(config)#router ospf 1

Answer: B, E

Explanation:
B.The network command specifies the IP address (192.168.10.0) followed by the wildcard mask (not the subnet mask), and the area that is to be associated with the OSPF address range (in this case, area 0). The wildcard mask
indicates in binary how much of the IP address much be matched with 0s indicating that the bits must match and 1
indicating that they may vary. Thus 0.0.0.255 or 00000000.00000000.00000000.11111111 indicates that any bit in
the last octet can vary while all bits in the first 3 octets must match the network address (in other words, 192.168.10.xx)
E.The router ospf command enables OSPF routing and enters router configuration mode. This command takes a <processid> argument which identifies the OSPF process.
Incorrect Answers:
A.This command is correct, except for the fact that the keyword "area" is missing and needs to be inserted.
C.For OSPF, the inverse mask must be used, not the regular subnet mask.
D.OSPF can not use process ID 0, and the goal of this question is to put a specific network in area 0, not the entire
routing process.

QUESTION 95
Which of the following routing protocols are less likely prone routing loops and networkreachabilityproblems when used indiscontiguousnetworks? (Select all valid responses)
A.IGRP
B.CDP
C.OSPF
D.RIP v1
E.RIP v2
F.EIGRP

Answer: C, E, F

Explanation: Only OSPF, RIP version 2, and EIGRP carry VLSM information.In adiscontiguous network, subnet masks of different lengths can be used, but this information will need to be propagated via the routing
protocol if all networks are to be reached.
Incorrect Answers:
A, D.With RIP version one and IGRP,discontiguousnetworks can be problematic, as VLSM is not supported.
B.CDP is the Cisco Discovery Protocol, which is used to exchange information between Cisco devices.It can only be
used between Cisco routers and switches, and it is not a routing protocol.

QUESTION 96
Which one of the following statements best explains the split horizon rule?
A.Only routers can split boundaries (horizons) between networks in separate AS numbers.
B.Each AS must keep routing tables converged to prevent dead routes from being advertised across boundaries.
C.Once a route is received on an interface, advertise that route as unreachable back out the same interface.
D.Information about a route should never be sent back in the direction from which the original update came.

Answer: D

Explanation:
The split horizon rule states:
*Never advertise a route out of the interface through which you learned it.
For instance, in Figure 4a below, if Router One is connected to Routers Two and Three through a single multipoint interface
(such as Frame Relay), and Router One learned about Network A from Router Two, it will not advertise the route to Network
A back out the same interface to Router Three. Router one assumes that Router Three would learn about Network A directly
from Router Two.

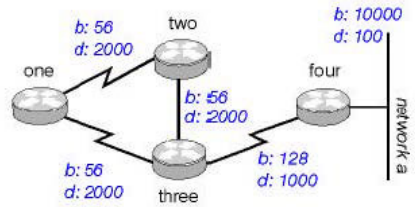


Figure 4a

Incorrect Answers
A:There is no such requirement
B: Distance vector protocols updates routing table at regular intervals instead of Topology changes
C:This is the definition of the poison reverse rule, not the split horizon rule.
Reference:Wendell Odom. CISCO CCNA Certification Guide (2000 Press) Page 369.

QUESTION 97
In EIGRP, what kind of route information is stored in the RAM of the router and maintained by way of hello packets and update packets? (Select two answer choices)
A.Neighbor Table
B.SRF Table

C.RTP Table
D.Topology Table
E.Query Table
F.Dual Table

Answer: A, D

Explanation:
In EIGRP the only two tables of significance are the neighbor table and the topology table.
Incorrect Answers:
B, C, E, F.These are not tables used by EIGRP.
Reference:SybexCCNA Study Guide edition 4, Page 271

QUESTION 98
What is the maximum number of hops OSPF allows before it deems a network unreachable?
A.15
B.16
C.99
D.255
E.Unlimited

Answer: E

Explanation:
OSPF is a link state protocol. Link state protocols do not use hops to mark networks as unreachable. Instead OSPF
implements a steady state operation to its adjacent neighbors by sending and receiving small Hello packets periodically.
When an OSPF router does not receive a Hello packet for a specified time period, it assumes that the neighbor is
down. The router then runs the SPF algorithm to calculate new routes.Hops counts are not used.

QUESTION 99
On the topic of the OSPF hello protocol; which of the statements below are true? (Select two answer choices)
A.The OSPF Hello protocol provides dynamic neighbor discovery.
B.The OSPF Hello protocol detects unreachable neighbors in 90 second intervals.
C.The OSPF Hello protocol maintains neighbor relationships.
D.The OSPF Hello protocol negotiates the correct parameters between neighboring interfaces.
E.The OSPF Hello protocol uses timers to elect the router with the fastest links at the designated router.
F.The OSPF Hello protocol broadcast hello packets throughout theinternetworkto discover all routers that are running
OSPF.

Answer: A, C

Explanation:

OSPF contains a protocol (the Hello protocol) that is used to establish and maintain relationships between neighboring
nodes. These relationships are calledadjacencies. Adjacencies are the basis for the exchange of routing data in OSPF.
It is through the use of this protocol, and packet type, that an OSPF node discovers the other OSPF nodes in its area.
The Hello protocol uses a specialsubpacketstructure that is appended to the standard 24octet
OSPF header.
Together, these structures form ahello packet.
All routers in an OSPF network must adhere to certain conventions that must be uniform throughout the network. These
conventions include the following:
1.The network mask
2.The interval at which hello packets will be broadcast (thehello interval)
3.The amount of time that must elapse before a non responding router will be declared dead (that is, therouter dead
interval) by the other routers in the network
4. All routers in an OSPF network must agree to use the same value f
network might not operate properly. These parameters are exchanged using hello packets. Together, they comprise the
basis for neighborly communications.They ensure that neighbor relationships (known asadjacencies) are not formed between routers in different subnets and that all members of the network agree on how frequently to stay in contact with each other.
The hello packet also includes a listing of other routers (using their unique router IDs) that the source router has recently
been in contact with.This field, the Neighbor field, facilitates the neighbor discovery process. The hello packet also contains several other fields such as Designated Router and Backup Designated Router.These fields are useful
in maintaining adjacenciesand support the operation of the OSPF network in both periods of stability and convergence.

QUESTION 100
A routing table contains static, RIP, and IGRP routes destined to the same network with each route set to its default administrative distance. Which route will be the preferred route?
A.The RIP route
B.The static route
C.The IGRP route
D.All three will load balance.

Answer: B

Explanation:
To decide which route to use, IOS uses a concept called Administrative Distance. The administrative distance is a
number that denotes how believable an entire routing protocol is on a single router. The lower the number, the better, or

more believable the routing protocol.
Route TypeAdministrative Distance
*Static1
*IGRP100
*RIP120
Reference:
CCNA SelfStudy CCNA ICND exam certification Guide (Cisco Press, ISBN 158720083X) Page 177

QUESTION 101
You are an administrator and you've just configured OSPF on a router with both physical and logical interfaces. Which of the following factors determine the router ID?
A.The lowest IP address of any interface.
B.The highest IP address of any interface.
C.The highest IP address of any logical interface.
D.The middle IP address of any logical interface.
E.The lowest IP address of any physical interface.
F. The highest IP address of any physical interface.
G.The lowest IP address of any logical interface.

Answer: C

Explanation:
Source:CiscoNetworkAcademySemester 3 version 3Topic: Single Area OSPF ConfigurationSub Topic: Configuring
OSPF loopback address and router priorityWhen the OSPF process starts, the Cisco IOS uses the highest local active
IP address as its OSPF router ID. If there is no active interface, the OSPF process will not start. If the active interface
goes down, the OSPF process has no router ID and therefore ceases to function until the interface comes up again.To
ensure OSPF stability there should be an active interface for the OSPF process at all times. A loopback interface,
which is a logical interface, can be configured for this purpose. When a loopback interface is configured, OSPF uses
this address as the router ID, regardless of the value. On a router that has more than one loopback interface, OSPF
takes the highest loopback IP address as its router ID.To create and assign an IP address to a loopback interface use
the following commands:Router(config)#interface loopbacknumber(no can be range from 0 255)
Router(configif)#
ip addressipaddress subnetmaskexampleRouter(config)#interface loopback 0Router(configif)# ip address
192.168.31.33 255.255.255.255Router(configif)# exitIt is considered good practice to use loopback interfaces for all
routers running OSPF. This loopback interface should be configured with an address using a 32bit subnet mask of
255.255.255.255. A 32bit subnet mask is called a host mask because the subnet mask specifies a network of one

host. When OSPF is requested to advertise a loopback network, OSPF always advertises the loopback as a host route
with a 32bit mask.Summarylookbackaddress(logical address) is use when active interfaces (physical addresses) is
down inorderto make OSPF stable or reliable

QUESTION 102
Under which circumstance,ienetwork type, would an OSPF router establish a neighbor adjacency, even though the DR/BDR election process was not performed?
A.Pointtopoint
B.Broadcast multicast
C.Nonbroadcastmulticast
D.Backbone area 0
E.Virtual Link

Answer: A

Explanation: If there's a point to point connection, there's no need for a designated router or a backup designated router election.By definition, only two routers exist on a point to point connection.
Incorrect Answers:
B, C.
In these network types, the potential for more than two routers on the segment exist, so the Designated Router and
Backup Designated Routers are elected.
D.This is not a network type.Area 0 is the backbone of anyOSPF network.
E.Virtual Links are used in OSPF to link an area to area 0.Every area must be directly connected to area 0 at some
point, and virtual links are used for areas that do not meet this requirement.

QUESTION 103
On the assumption that every OSPF router in a particular area is configured with the same priority value;
which secondary value would be used as a router ID when there is no loopback interface set?
A.The IP address of the first Fast Ethernet interface.
B.The IP address of the console management interface.
C.The highest IP address among its active interfaces.
D.The lowest IP address among its active interfaces.
E.There will be no router ID until a loopback interface is configured.

Answer: C

Explanation: Ordinarily the loopback interface would be selected as the router ID.In the event that no loopback interface is configured, the router ID will be the first active interface that comes up on the router.If that particular
interface has more then one IP address, then the highest address will be selected as the Router ID.
Incorrect Answers:

B.Putting an IP address on the management console is a concept that is configured on a Catalyst switch, not a router.

QUESTION 104
The statements below compare and contrast link state and distance vector routing protocols.Which of these are true?(Choose two).
A.Distance vector protocols send the entire routing table to directly connected neighbors.
B.Distance vector protocols are responsible for sending updates to all networks listed in the routing table.
C.Link state protocols are responsible for sending the entire routing table to the whole network.
D.Link state protocols send updates regarding their own links status to all other routers on the network.

Answer: A D

Explanation:
Distance Vector Protocols:
Distance Vector Protocols advertise routing information by sending messages, called routing updates, out the interfaces
on a router. These updates contain a series of entries, with each entry representing a subnet and a metric.
LinkState
Protocols:
Send partial updates when link status changes and floods full routing table updates every 30 minutes. The flooding,
however, does not happen all at once, so the overhead is minimal.
Incorrect Answers:
B.Distance Vector protocols only send information to adjacent neighbors.
C.Only partial routing updates and sent to neighbors on a regular basis.The entire table is not sent to all neighbors.This
would obviously create far too much overhead traffic.
Reference:
CCNA SelfStudy CCNA INTRO exam certification Guide (Cisco Press, ISBN 1587200945) Page 413 + 419

QUESTION 105
What are the characteristic of link state routing protocols? (Choose all that apply.)
A.The exchange of advertisement is triggered by a change in the network.
B.All routers exchange routing tables with each otheriIna multipoint network.
C.Packets are routed based upon the shortest path to the destination.
D.Paths are chosen depending on the cost efficiency factor.
E.Every router in an OSPF area is capable of representing the entire network topology.
F.Only the designated router in an OSPF area can represent the entire network topology.

Answer: A C E

Explanation:
Open Shortest Path First
*Each router discovers its neighbors on each interface. The list of neighbors is kept in a neighbor table.
*Each router uses a reliable protocol to exchange topology information with its neighbors.

*Each router places the learned topology information into its topology database.
*Each router runs the SPF algorithm against its own topology database.
*Each router runs the SPF algorithm against its own topology database to calculate the best routes to each subnet in the
database.
*Each router places the best roué to each subnet into the IP routing table.
The following list points out some of the key features of OSPF:
*Converges very quickly from
the point of recognizing a failure, it often can converge in less than 10 seconds.
*Supports VLSM.
*Uses short Hello messages on a short regular interval, with the absence of hello messages indicating that a neighbor is
no longer reachable.
*Sends partial updates when link status changes, and floods full updates every 30 minutes. The flooding, however, does
not happened all at once, so the overhead s minimal.
* Uses cost for the metric.
Reference:
CCNA SelfStudy CCNA INTRO exam certification Guide (Cisco Press, ISBN 1587200945) Page 417

QUESTION 106
On the topic of OSPF routing; which of the following are the traits of an OSPF area? (Select all that apply)

A. Each OSPF area requires a loopback interface to be configured.
B. Areas may be assigned any number from 0 to 65535.
C. Area 0 is called the backbone area.
D. Hierarchical OSPF networks do not require multiple areas.
E. Multiple OSPF areas must connect to area 0.
F. Single area OSPF networks must be configured in area 1.

Answer: C, E

Explanation: OPSF uses areas in a hierarchical fashion, and the backbone area is always area 0.All other areas have at
least one connection to area 0.
Incorrect Answers:
A.Loopback interfaces are often used in OSPF networks, so that the router ID can be configured.However, this is not
a requirement.
B.The areaid can be an integer between 0 and 4294967295.
F.Single area OSPF networks do not have to be configured with the backbone area 0.Although area 1 can indeed be
used, it is not required that area 1 is used.Single area OSPF networks can be any integer from 04294967295.

QUESTION 107
If the bandwidth of an OSPF interface is configured with the "bandwidth 64" command, what would be the

calculated cost of the link?

A. 1
B. 64
C. 1562
D. 64000
E. 1500

Answer: C

Explanation:
The question states that OSPF interface has been configured with the bandwidth 64command.Cisco IOS always interprets the values for the bandwidth command as being in kbps, so the bandwidth is configured as 64 kbps.
The metric for any OSPF defaults to 100,000,000/bandwidth.So, in this example:
100,000,000 / 64000 = 1562.5

QUESTION 108
Which two are NOT characteristics of the OSPF routing protocol? (Select all that apply)
A.It confines network instability to a single area of network.
B.It increases the routing overhead of the network
C.It supports VLSM
D.It routes between Autonomous Systems.
E.It allows extensive control of routing updates

Answer: B, D

Explanation: Through the use of areas, routing information and instability's are reduced to specific areas.This will
reduce the routing overhead on a network, not increase it.OSPF is not used to provide routing information between
different systems.BGP is predominately used for this purpose.
Incorrect Answers:
A, C, E.These are all true statements that describe the features and functionality of OSPF.

QUESTION 109
Which of the following are true statements regarding the characteristics of OSPF areas? Select all that apply.
A.All OSPF networks require the use of multiple areas
B.Multiple OSPF areas must connect to area 0
C.Single area OSPF networks must be configured in area 1
D.Areas can be assigned any number from 0 to 63535
E.Area 0 is called the backbone area
F.Each OSPF area need to be configured with a loopback interface

Answer: B, E

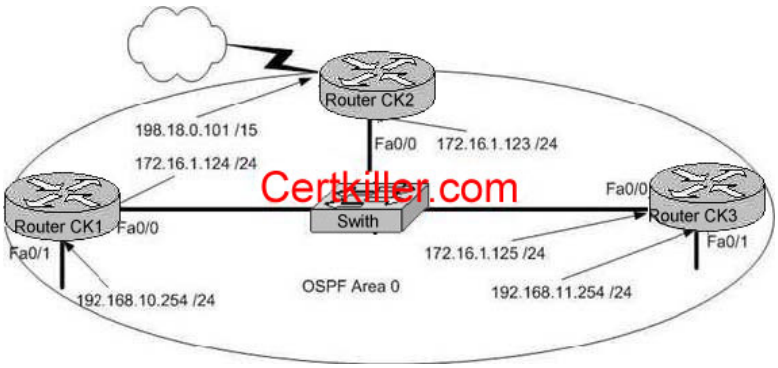
Explanation:
OSPF divides its routing domain into areas. Area 0, the backbone, is required. This divides interior routing into two
levels. If traffic must travel between two areas, the packets are first routed to the backbone. This may cause nonoptimal routes, since interarea routing is not done until the packet reaches the backbone. Once there, it is routed to
the destination area, which is then responsible for final delivery. This layering permits addresses to be consolidated by
area, reducing the size of the link state databases.
All areas must be connected to area 0, either directly or through the use of virtual links.
Incorrect Answers:
A.OSPF network can only consist of a single area.
C.Single area networks can use any area number.If more than one area is configured in the network, then at least one of
the areas must be area 0.
D.The areaid
can be an integer between 0 and 4294967295.
F.While loopback interfaces are commonly used in OSPF networks, it is not a requirement.

QUESTION 110
On what kinds of networks does OSPF elect a backup designated router?
A.Pointtopoint
B.Point to multipoint
C.Broadcast
D.Nonbroadcast multiaccess

Answer: C, D

Explanation: The DR and BDR election process is performed on broadcast and nonbroadcast multiaccess networks.
Incorrect Answers:
A, B.There is no DR or BDR on point to point and point to multipoint links.On a point to point link, only two routers
exist so there is no need for a DR or BDR.

QUESTION 111
Three Certkiller routers are configured for OSPF area 0 as shown in the diagram below:



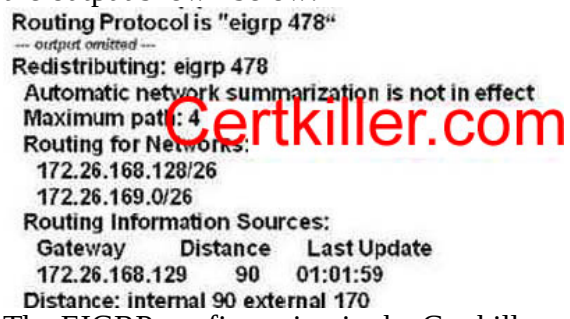
You wish to ensure that router CK2 will be preferred as the designated router (DR) for the 172.16.1.0 /24 LAN segment.
What configuration tasks could be used to establish this preference? (Choose all that apply)
A.Configure the priority value of the Fa0/0 interface of Router CK2 to a higher value than any other interface on the
Ethernet network.
B.Change the router id for Router CK2 by assigning the IP address 172.16.1.130/24 to the Fa0/0 interface of Router CK2 .
C.Configure a loopback interface on Router CK2 with an IP address higher than any IP address on the other routers.
D.Change the priority value of the Fa0/0 interface of Router CK2 to zero.
E.Change the priority values of the Fa0/0 interfaces of Router CK1 and Router CK3 to zero.
F.No further configuration is necessary.
G.All of the above will make CK2 the DR

Answer: A, C, E

Explanation:
Inorderto ensure that a router will become the OSPF DR for any given segment, there are a number of options.One
way is to manually configure the interface priority as described in option A above using the "ip ospf priority" interface
configuration command.The second method is described in option C.
OSPF routers will always use the loopback interface IP address as the router ID, when configured, and the router with
the highest IP address will be chosen as the DR when the priorities are the same.The final method is to change the
priority of the other routers in the segment to zero.When the OSPF priority is set to 0, the router is ineligible to become
the DR or the BDR.Important Note:The OSPF DR/BDR election process is not preemptive,
so any changes to the
network regarding the DR/BDR election process will only occur when the routers are restarted.
Incorrect Answers:
B.This method will not work as the router ID is taken by using the highest IP address of all interfaces in the router, or
from the loopback interface if it is configured.Although choosing this option will give router CK2 the highest IP address

on the LAN segment, the router ID will be taken from the highest IP address in the router, which as shown will be
192.168.0.101.
D.This will make CK2 ineligible to become either the DR or the BDR.

QUESTION 112
The Certkiller router has been configured for EIGRP.Information relating to the configuration is displayed in the output shown below:



The EIGRP configuration in the Certkiller router used a single network statement.
From the output shown in the graphic, which network statement was used to advertise these networks in EIGRP?
A.network 172.26.168.128 0.0.0.127
B.network 172.26.168.128 area 478
C.network 172.26.0.0
D.network 172.26.168.0 area 478

Answer: C

Explanation:
The correct configuration statements used in the above were:
Routereigrp478
Network 172.26.0.0
Incorrect Answers:
A.A wildcard mask is not required at the end of the network statement inorderto configure EIGRP.It is only required for
an OSPF configuration.
B, D.In EIGRP, the concept of an area does not exist.This is only used by OSPF.

QUESTION 113
Which commands are required to properly configure a router to run OSPF and to add network 192.168.16.0/24 to OSPF area 0? Select two
A. Certkiller Router(config)#router ospf 0
B. Certkiller Router(config)#router ospf 1
C. Certkiller Router(config)#router ospf area 0
D. Certkiller Router(config)#network 192.168.16.0 0.0.0.255 0
E. Certkiller Router(config)#network 192.168.16.0 0.0.0.255 area 0
F. Certkiller Router(config)#network 192.168.16.0 255.255.255.0 area 0

Answer: B, E

Explanation:
ospf do not use area oospf range Cost is a metric value in the range 165535 ...

QUESTION 114
Network topology exhibit

Routers Certkiller B and Certkiller C are configured for RIPv2 and have complete connectivity. Router Certkiller A is added to the network. What is the most appropriate Certkiller A configuration for full connectivity?
A. Certkiller A(config)#router rip Certkiller A(config)#network 10.0.0.0 Certkiller A(config)#network 172.16.0.0
Certkiller A(config)#network 192.168.1.0
B. Certkiller A(config)#router rip Certkiller A(config)#network 10.0.0.0
C. Certkiller A(config)#router rip Certkiller A(config)#network 10.0.0.0 Certkiller A(config)#network 172.16.0.0
D. Certkiller A(config)#router rip Certkiller A(config)#network 10.0.0.0 Certkiller A(config)#network 192.168.1.0

Answer: C

Explanation: When configuring RIP you configure only the directly connected networks that are to be advertised via
the RIP routing process are to be configured.
Incorrect Answers:
A.This choice implies that when configuring rip on a router every possible network in the entire system should be
configured. This is not the case.
B. Certkiller 1 requires the 172.16.0.0 network to be configured, not the 192.168.1.0 network.
D.If the 172.16.0.0 network is omitted, then the other routers in the network will not be able to reach the LAN users of
Certkiller Avia RIP.

QUESTION 115
Exhbit
ip route 172.16.3.0 255.255.255.0 192.168.2***** (missing)
Which of the following statements are true regarding the command in the exhibit? Select two
A.The command is used to establish a static route.
B.The default administrative distance is used.
C. The command is used to configure the default route.
D.The subnet mask for the source address is 255.255.255.0
E.The command is used to establish a stub network

Answer: A, B

Explanation:
The IP route command is used to establish a static route. The default administrative distance is used because the other
distance is not set at the end of the command.

QUESTION 116
Which address represents aunicastaddress?
A.224.1.5.2
B.FFFF. FFFF. FFFF.
C.192.168.24.59/30
D.255.255.255.255
E.172.31.128.255/18

Answer: E
Explanation :172.31.128.255 is the onlyunicastaddress. It seems to be a broadcast address, because of 255 in the lastoctett, the
broadcast address for this network is 172.31.131.255.
Not A:224.1.5.2 is a multicast address.

QUESTION 117
If an Ethernet port on router was assigned an IP address of 172.16.112.1/20, what is the maximum number of hosts allowed on this subnet?
A.1024
B.2046
C.4094
D.4096
E.8190

Answer: C
Given IPaddrof 172.16.112.1 / 20,
subnet mask : 255.255.240.0
max. num of hosts =((2^12) 2) = 40962 = 4094

QUESTION 118
Which of the following IP addresses fall into the CIDR block of 115.64.4.0/22? Select three
A.115.54.8.32
B.115.54.7.64
C.115.54.6.255
D.115.54.3.32
E.115.54.5.128
F.115.54.12.128

Answer: B, C, E

Explanation :Given
CIDR block of 115.54.4.0 /22:
subnet mask : 255.255.252.0
theIPaddrrange would be 115.54.4.1 to 115.54.7.254.
Therefore, 115.54.5.128 (E),115.54.6.255 (C) and 115.54.7.64 (B) are correct.

QUESTION 119
You have a Class B network address with a subnet mask of 255.255.255.0.
Which of the following statements are true regarding the resulting network? (Choose two)
A.There are 254 usable hosts per subnet.
B.There is one usable network.
C.There are 255 usable hosts per subnet.
D.There are 254 usable subnets.
E.There are 30 usable subnets.
F.There are 64 usable hosts per subnet.

Answer: A D.
Explanation
The default subnet mask for Class B is 255.255.0.0. Thus an extra 8 bits have been used for the network portion,
leaving 8 for hosts. The 2n 2 formula (28 2 in this case for both the network and IP hosts) gives us 254 networks and
254 hosts per network.
Incorrect Answers:
B.We must remember to always subtract 2 (one for the network, and one for the broadcast) so the result is 254, not
256.
C, E.No possible network mask would give us this exact number of subnets or hosts.
F.This would be true if this were a class C network, not a class B.

QUESTION 120
What is thesubnetworkaddress for a host with the IP address 201.100.5.68/28?
A.201.100.5.0
B.201.100.5.32
C.201.100.5.64
D.201.100.5.65
E.201.100.5.31
F.201.100.5.1

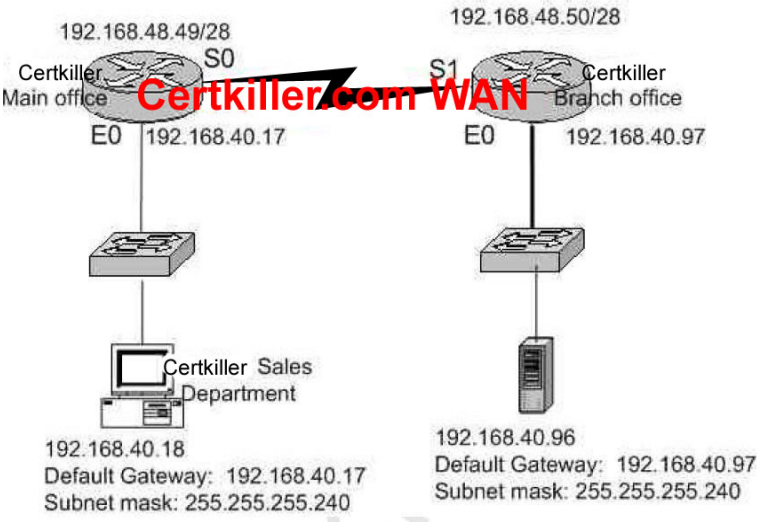
Answer: C
This is a C ip with a subnet mask of 255.255.255.240the host 201.100.5.68/28 belong to the second subnet which is
201.100.5.64this is determined by doing the followingsubnets?2^42= 14hosts?2^42= 14valid subnet range?256240=1616+16=32,16+32=48,16+48=64,64+16=80 and soon.asyou can see the ip201.100.5.68 belongs
to the second subnet which is.64

QUESTION 121
You are the network administrator at Certkiller . The Certkiller network supports VLSM.Your newly appointed Certkiller trainee wants to knowwhich network mask should be used for pointtopoint WAN links
inorderto reduce the waste of IP addresses in this network.
What will your reply be?
A./24
B./30
C./27
D./26
E./32
103

Answer: B

Explanation:
PointtoPoint
serial links needs two IP addresses to be configured on both sides of the interfaces. It means we require 2 host addresses. With 2 host bits we get 4 hosts out of which all zero's and all one's is not used so we have two usable
hosts.
Subnet mask in this case would be 11111111.11111111.11111111.11111100
Where last 2 are the host bits to achieve 2 valid hosts.
Subnet mask will be 255.255.255.252
Network Bits = 30 means /30
Host Bits = 2
Number of Hosts = 2n 2= 22 2 = 4 2 = 2 valid hosts

QUESTION 122
You are the network administrator at Certkiller Inc.The Certkiller network is shown in the following exhibit:



Hosts in the Certkiller sales department cannot get access to a new server at the Branch Office. Consider the IP addressing scheme in the exhibit to determine the problem.
A.The default gateway in the sales department is inaccurate.
B.The serial 0 interface on the Main Office router and the serial 1 interface on the Branch Office router are not compatible.
C.The subnet mask of the workstations in the sales department is inaccurate.
D.The host address of the server at the Branch Office is invalid.
E.The default gateway of the server at the Branch Office is inaccurate.

Answer: D

Explanation: The IP address of the server is 192.168.40.96/28. This is an invalid host address.
Incorrect Answers:
A. The default gateway in the sales department is correct.
B.This is no problem here.
C.The subnet mask is correct.
E.The default gateway in the branch office is correct.
SteveMcQuerry.Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 233 234.

QUESTION 123
You are a network technician at Certkiller .Your trainee asks you what 11111000 binary is in decimal. What would your reply be?
A.220
B.224
C.240
D.248
E.256

Answer: D

Explanation:
128 + 64+32+16+8 = 248.Since this is the last octet of the interface, the subnet mask would be expressed as a /29.
Reference:
CCNA SelfStudy CCNA ICND exam certification Guide (Cisco Press, ISBN 158720083X) Page 559
Incorrect Answers:
A.The number 210 would be 11010010 in binary.
B.The number 224 would be 11100000 in binary.
C.The number 240 would be 11110000 in binary
E.The number 252 would be 11111100 in binary.This is known as a /30 and is used often in pointpoint links, since
there are only 2 available addresses for use in this subnet.

QUESTION 124
You work as a network technician at Certkiller . You are required to divide the 172.12.10.0 network into subnets. Each subnet must have the capacity to support 458 IP addresses. You must provide the maximum

number of subnets.
Which network mask should you use?
A.255.255.224.0
B.255.255.240.0
C.255.255.248.0
D.255.255.252.0
E.255.255.254.0
F.255.255.255.0

Answer: E

Explanation:
To obtain 458 IP addresses the number of host bits will be 9. In this maximum 512 hosts can be assigned. Keep 9 bits
for host means 4thoctet and last bit is 3rdwill be 0. This gives 255.255.254.0 is subnet mask.

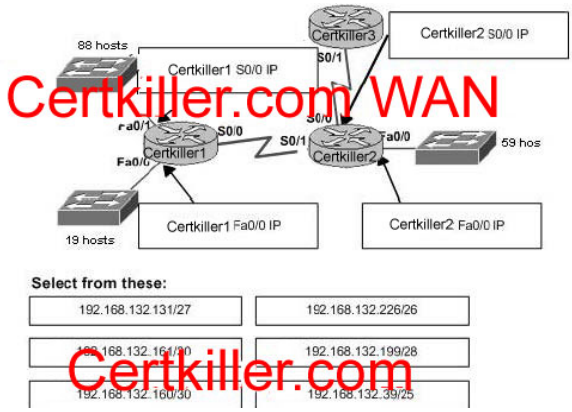
QUESTION 125
You work as network consultant. Your customer, Certkiller Inc, has a class C network license. Certkiller wants you to subnet the network to provide a separate subnet for each of its 5 departments. Each subnet must support at least 24 hosts.
Which subnet mask should you use?
Which network mask should you use?
A.255.255.255.192
B.255.255.255.224
C.255.255.255.240
D.255.255.255.248
E.255.255.255.252
F.255.255.255.254

Answer: B

Explanation:
The default subnet mask for class C network is 255.255.255.0. If one has to create 5 subnets, then 3 bits are required.
With 3 bits we can create 6 subnets. Remaining 5 bits are used for Hosts. One can create 30 hosts using 5 bits in host
field. This matches with requirement.

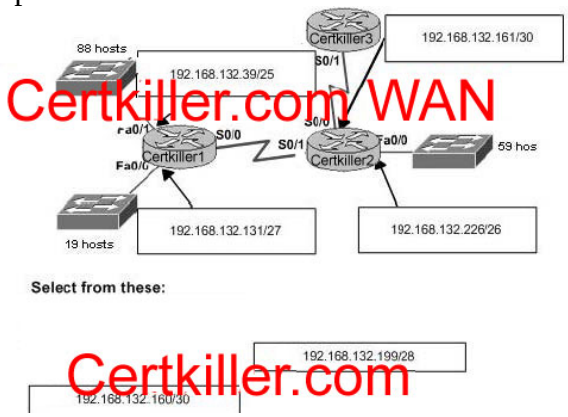
QUESTION 126
Certkiller has three locations and has plans to redesign the network accordingly. The networking team received 192.168.132.0 to use as the addressing for entire network from the administrator. Aftersubnetting the address, the team is ready to assign the address.
The administrator plans to configure ip subnetzero
and use RIP v2 as the routing protocol. As a member of
the networking team, you must address the network and at the same time converse unused addresses for future growth.

Being mindful of these goals, drag the host addresses on the left to the correct router interface. One of the routers is partially configured. Move the mouse over a router to view its configuration. Not all of the host addresses on the left will be used.



Answer:

Explanation:



QUESTION 127

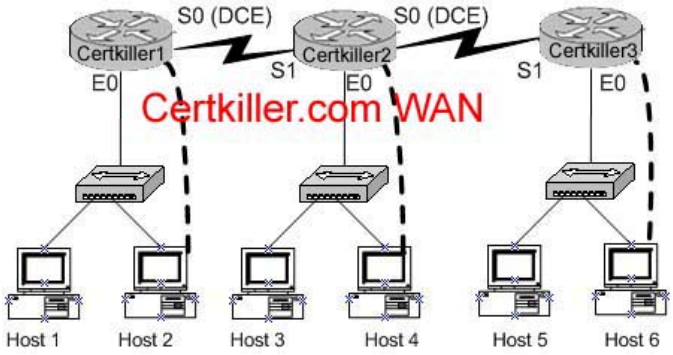
Your Certkiller trainee Bob asks you what 11111001 binary is in decimal. What should you tell him?

A.6
B.193
C. 225
D.241
E.249

Answer: E

Explanation:
128 + 64+32+16+8=1 = 249
Reference:
CCNA SelfStudy CCNA ICND exam certification Guide (Cisco Press, ISBN 158720083X) Page 559

QUESTION 128
Three sites, Certkiller 1, Certkiller 2, and Certkiller 3 are connected via a WAN. At each site a router provides serial connectivity to the Wan and an Ethernet connection to a LAN. All three routers are configured, and the network is functional. Configure and apply an access list will prevent telnet access to the Certkiller 1 router while allowing all other traffic to pass. The access list should not contain more than three (3) statements and should be applied to the Certkiller 1 router. The routers have been previously configured with the following specifications:
*The routers are named Certkiller 1, Certkiller 2, and Certkiller 3.
*RIP is the routing protocol.
*The clocking signal is provided on the serial 0 interfaces.
*All passwords on all routers are " Certkiller ".
*The subnet mask on all the interfaces is the default mask.
*IP addresses are listed in the chart below.
Certkiller 1
E0 192.168.149.1
S0 192.168.199.1
Secret password: Certkiller
Certkiller 2
E0 192.168.155.1
S0 192.168.11.1
S1 192.168.199.2
Secret password: Certkiller
Certkiller 3
E0 192.168.165.1
S1 192.168.11.2

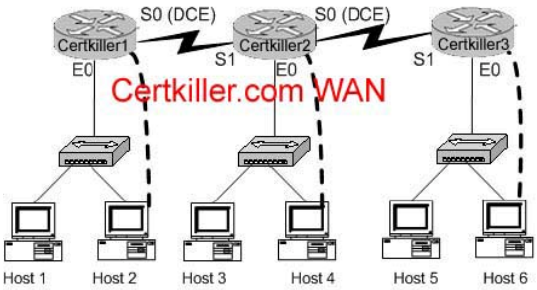


To configure the router click on the host icon that is connected to a router by a serial console cable.

Answer:
Certkiller 1>enable
Password:
Certkiller 1#show accesslists
Certkiller 1#config t
Enter configuration commands, one per line. End with END.
Certkiller 1(config)#accesslist 101 denytcpany 192.168.149.1 0.0.0.0eq23
Certkiller 1(config)#accesslist 101 denytcpany 192.168.199.1 0.0.0.0eq23
Certkiller 1(config)#accesslist 101 permit ip anyany
Certkiller 1(config)#interface Ethernet 0

Certkiller 1(configif)# ip accessgroup 101 in
Certkiller 1(configif)# exit
Certkiller 1(config)#interface serial 0
Certkiller 1(configif)# ip accessgroup
101 in Certkiller 1(configif)#< CTRLZ>
..
Certkiller 1#copy runningconfig startupconfig
Destination filename [startupconfig]?
Building configuration....
[OK]
Certkiller 1#

QUESTION 129
You are a network technician at Certkiller , Inc. Certkiller has recently opened a third office in a foreign country and bought a router to connect this office to the other two already on the network. The names of the routers are Certkiller 1, Certkiller 2, and Certkiller 3. Configure the Certkiller 3's router's IP addresses on the E0 and S1 interfaces so that the E0 interface receives the first usable subnet while the S1 interface receives the second usable subnet from the network 192.168.101.0/28. Both interfaces should receive the first available IP of the subnet. The zero subnet should not be used. The routers have been configured with the following specifications.
*The routers are named Certkiller 1, Certkiller 2, and Certkiller 3.
*RIP is the routing protocol.
*Clocking is provided on the serial 0 interfaces
*The secret password on the Certkiller 3 router is " Certkiller "
*The subnet mask of all networks other than 192.168.101.0 is the default mask.
*The IP addresses are listed in the chart below.
Certkiller 1
E0 192.168.93.1
S0 192.168.95.1
Certkiller 2
E0: 192.168.97.1
S0: 192.168.101.42
S1: 192.168.95.2
Certkiller 3
E0 to be determined
S1 to be determined
Secret password: Certkiller



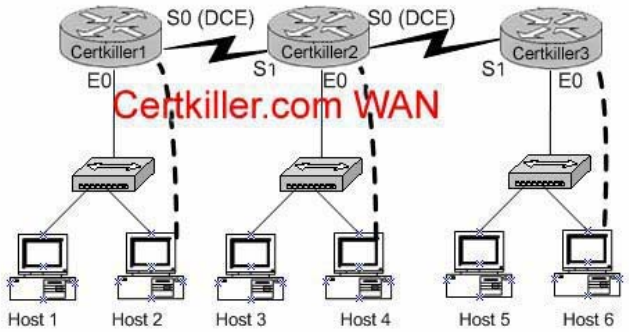
Click on the host icon that is connect to a router by a serial console cable to configure the router.

Answer:
Certkiller 3>enable
Password: Certkiller
Certkiller 3 #config terminal
Certkiller 3 (config) #interfaceethernet0(Shorthand:inte 0)
Certkiller 3 (configif) #ip address 192.168.101.17 255.255.255.240
Certkiller 3 (configif) #no shutdown
Certkiller 3 (configif) #exit
Certkiller 3 (config) #interface serial 1 (Shorthand:ints 1)
Certkiller 3 (configif) #ip address 192.168.101.33 255.255.255.240
Certkiller 3 (configif) #no shutdown
Certkiller 3 (configif) #CTRL+Z
Certkiller 3 #copy runningconfig startupconfig
Reference:
CCNA SelfStudy CCNA ICND exam certification Guide (Cisco Press, ISBN 158720083X) Page 165
CCNA SelfStudy CCNA INTRO exam certification Guide (Cisco Press, ISBN 1587200945) Page 486

QUESTION 130
You work as a network engineer at Certkiller .com. You are required to allow establishment of a Telnet session with a router Certkiller C.
Which set command must be configured?
A. Certkiller C(config)#line console 0 Certkiller C(configline)# enable password Certkiller
B. Certkiller C(config)#line console 0 Certkiller C(configline)# enable secret Certkiller Certkiller C(configline)# login
C. Certkiller C(config)#line console 0 Certkiller C(configline)# password Certkiller Certkiller C(configline)# login
D. Certkiller C(config)#line vty 0 Certkiller C(configline)# enable password Certkiller
E. Certkiller C(config)#line vty 0 Certkiller C(configline)# enable secret Certkiller Certkiller C(configline)# login
F. Certkiller C(config)#line vty 0 Certkiller C(configline)# password Certkiller Certkiller C(configline)# login

Answer: F

QUESTION 131
Network Topology Exhibit



You work as a network engineer at Certkiller .com. Three Certkiller stores have established network

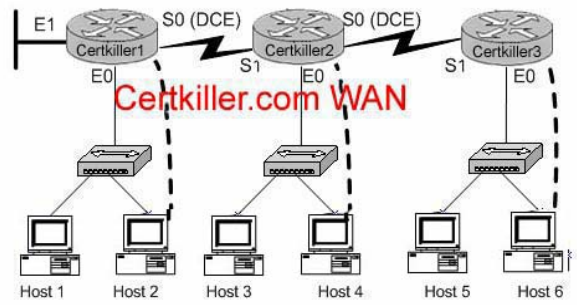
connectivity. The routers are named Certkiller 1, Certkiller 2, and Certkiller 3. The manager at the Certkiller site, Jack King, has decided to deny the ability of anyone from any other network to connect to the Certkiller 3 router with the ping command. Implement an access list on the Certkiller 3 router to deny this detection but allow all other types of traffic to pass. The access list should contain no more than three statements. The routers have been configured with the following specifications:
*The routers are named Certkiller 1, Certkiller 2, and Certkiller 3.
*RIP is the routing protocol.
*Clocking signal is provided on the serial 0 interfaces.
*The password on each router is " Certkiller ".
*The subnet mask on all interfaces is the default mask.
*The IP addresses are listed in the chart below.
Certkiller 1
E0192.168.49.1
S0192.168.51.1.
Certkiller 2
E0192.168.53.1
S0192.168.55.1
S1192.168.51.2
Certkiller 3
E0192.168.57.1
S1192.168.55.2
To configure the router click on the host icon that is connected to a router by a serial console cable.

Answer:
Click on Host 6 to connect to and configure Certkiller 3.
configure terminalaccesslist
101 denyicmpany 192.168.57.1 0.0.0.0accesslist 101 denyicmpany 192.168.55.2
0.0.0.0accesslist 101 permit ip anyany
Interface s1Ip accessgroup 101 ininterface ethernet0ip accessgroup 101 outctrl zcopy runningconfig startupconfig

---

QUESTION 132
Certkiller has decided to centralize their business by establishing network connectivity between their sites. A local technician was contracted to configure the routers. However, he failed. No network connectivity was established between the routers. The routers are named Certkiller 1, Certkiller 2, and Certkiller 3. Certkiller hires you, a Cisco Certified network consultant, to troubleshoot and fix the problems. You must identify the fault(s), and make the necessary change(s) to establish network connectivity.
The routers have been configured with the following specifications:
*The routers are named Certkiller 1, Certkiller 2, and Certkiller 3.
*RIP is the routing protocol
*Clocking is provided on the serial 0 interfaces.
*The password on each router is " Certkiller ".
*The subnet mask on all interfaces is the default mask.
*The IP addresses are listed in the chart below.
Certkiller 1
E0192.168.27.1

E1192.168.29.1
S0192.168.31.1
Certkiller 2
E0 192.168.35.1
S0 192.168.33.1
S1 192.168.31.2
Certkiller 3
E0192.168.37.1
S1192.168.33.2



To configure the router click on a host icon that is connected to a router by a serial console cable.
Certkiller 1

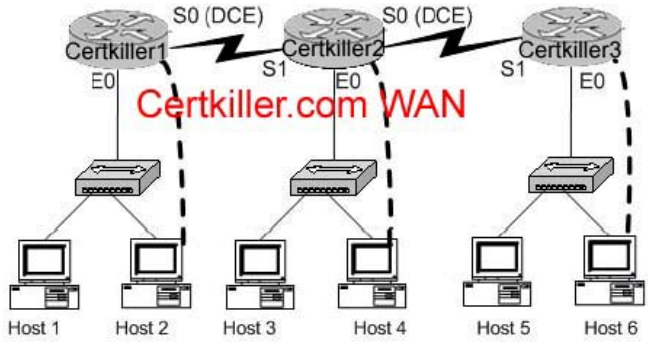
Answer:

Explanation:
Click on Host 2:
Router Certkiller 1:
Certkiller 1>enable
Password: Certkiller
Certkiller 1 #config terminal
Certkiller 1 (config) #interfaceethernet0
Certkiller 1 (configif) #ip address192.168.27.1 255.255.255.0 Certkiller 1 (configif) #no shutdown Certkiller 1 (configif) #exit Certkiller 1 (config) #interfaceethernet1 Certkiller 1 (configif) #ip address 192.168.29.1 255.255.255.0 Certkiller 1 (configif) #no shutdown Certkiller 1 (configif)# exit Certkiller 1 (config) #interface serial 0
Certkiller 1 (configif)# ip address 192.168.31.1 255.255.255.0
Certkiller 3 (configif) #clock rate 64000 Certkiller 1 (configif)# no shutdown Certkiller 1 (configif)# exit Certkiller 1
(config) #router rip Certkiller 1 (configrouter) #network 192.168.27.0 Certkiller 1 (configrouter) #network 192.168.29.0 Certkiller 1 (configrouter) #network 192.16831.0 Certkiller 1 (configrouter) #CtrlZ Certkiller 1 #copy
runningconfigstartupconfig
Click on Host 4
Router Certkiller 2:
Certkiller 2>enable
Password: Certkiller Certkiller 2 #config t Certkiller 2 (config) #interfaceethernet0 Certkiller 2 (configif) #ip address192.168.35.1 255.255.255.0 Certkiller 2 (configif) #no shutdown Certkiller 2 (configif) #exit Certkiller 2

(config) #interface serial 0 Certkiller 2 (configif) #ip address 192.168.33.1 255.255.255.0
Certkiller 2 (configif) #clock rate 64000 Certkiller 2 (configif) #no shutdown Certkiller 2 (configif) #exit Certkiller 2
(config) #interface serial 1 Certkiller 2 (configif)# ip address 192.168.31.2 255.255.255.0 Certkiller 2 (configif) #no
shutdown Certkiller 2 (configif) #exit Certkiller 2 (config) #router rip Certkiller 2 (configrouter) #network 192.168.35.0
Certkiller 2 (configrouter) #network 192.168.33.0 Certkiller 2 (configrouter) #network 192.168.31.0 Certkiller 2
(configrouter) #CtrlZ Certkiller 2 #copy runningconfig startupconfig
Router Certkiller 3:
Click on Host6
Certkiller 3>enable
Password: Certkiller Certkiller 3 #config t Certkiller 3 (config) #interfaceethernet0 Certkiller 3 (configif) #ip address192.168.37.1 255.255.255.0 Certkiller 3 (configif) #no shutdown Certkiller 3 (configif) #exit Certkiller 3
(config) #interfaceserial 1 Certkiller 3 (configif) #ip address 192.168.33.2255.255.255.0
Certkiller 3 (configif) #no shutdown Certkiller 3 (configif) #exit Certkiller 3 (config) #router rip Certkiller 3 (configrouter)
#network 192.168.33.0 Certkiller 3 (configrouter) #network 192.168.37.0 Certkiller 3 (configrouter) #CtrlZ Certkiller 3
#copy runningconfigstartupconfig

QUESTION 133
You are a Cisco certified expert. You have been contracted by the Certkiller Pro chain to fix a problem that was caused by a MCP certified technician who could not complete the configuration of the routers.
This Certkiller Pro chain has three stores and wanted to maintain their bicycle repair business in a centralized manner through network connectivity. They then asked the local MCP certified technician to configure the routers, but the technician failed to establish connectivity among the routers.
The routers are named Certkiller 1, Certkiller 2, and Certkiller 3, respectively.
Identify the faults(s) and make the appropriate change(s) to rectify the configuration of the routers. The MCP technician configured the routers with the specification that follows:
* The routers are named Certkiller 1, Certkiller 2, and Certkiller 3.
*RIP is the routing protocol
*Clocking is provided on the serial 0 interfaces
*The password on each router is " Certkiller "
*The subnet mask on all interfaces is the default mask.
*The IP addresses are listed in chart below.
Certkiller 1
E0192.168.27.1
E1192.168.29.1
S0192.168.31.1
Secret password: Certkiller
Certkiller 2
E0192.168.35.1
S0192.168.33.1

S1192.168.31.2
Secret password: Certkiller
Certkiller 3
E0192.168.37.1
S1192.168.33.2
Secret password: Certkiller

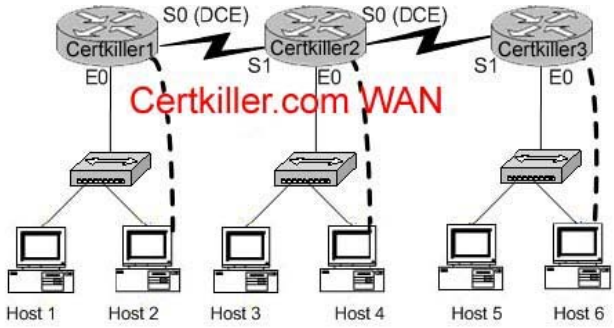


To configure the router you need to click on the host icon that is connected to the router by a serial cable.

Answer:
Click on Host 2:
Router Certkiller 1:
Certkiller 1>enable
Password: Certkiller
Certkiller 1 #config terminal
Certkiller 1 (config) #interfaceethernet0
Certkiller 1 (configif) #ip address192.168.27.1 255.255.255.0 Certkiller 1 (configif) #no shutdown Certkiller 1 (configif) #exit Certkiller 1 (config) #interfaceethernet1 Certkiller 1 (configif) #ip address 192.168.29.1 255.255.255.0 Certkiller 1 (configif) #no shutdown Certkiller 1 (configif)# exit Certkiller 1 (config) #interface serial 0
Certkiller 1 (configif)# ip address 192.168.31.1 255.255.255.0
Certkiller 3 (configif) #clock rate 64000 Certkiller 1 (configif)# no shutdown Certkiller 1 (configif)# exit Certkiller 1
(config) #router rip Certkiller 1 (configrouter) #network 192.168.27.0 Certkiller 1 (configrouter) #network 192.168.29.0 Certkiller 1 (configrouter) #network 192.16831.0 Certkiller 1 (configrouter) #CtrlZ Certkiller 1 #copy runningconfigstartupconfig
Click on Host 4
Router Certkiller 2:
Certkiller 2>enable
Password: Certkiller Certkiller 2 #config t Certkiller 2 (config) #interfaceethernet0 Certkiller 2 (configif) #ip address192.168.35.1 255.255.255.0 Certkiller 2 (configif) #no shutdown Certkiller 2 (configif) #exit Certkiller 2
(config) #interface serial 0 Certkiller 2 (configif) #ip address 192.168.33.1 255.255.255.0
Certkiller 2 (configif) #clock rate 64000 Certkiller 2 (configif) #no shutdown Certkiller 2 (configif) #exit Certkiller 2
(config) #interface serial 1 Certkiller 2 (configif)# ip address 192.168.31.2 255.255.255.0 Certkiller 2 (configif) #no
shutdown Certkiller 2 (configif) #exit Certkiller 2 (config) #router rip Certkiller 2 (configrouter) #network

192.168.35.0
Certkiller 2 (configrouter) #network 192.168.33.0 Certkiller 2 (configrouter) #network 192.168.31.0 Certkiller 2
(configrouter) #CtrlZ Certkiller 2 #copy runningconfig startupconfig
Router Certkiller 3:
Click on Host6
Certkiller 3> enable
Password: Certkiller Certkiller 3 #config t Certkiller 3 (config) #interfaceethernet0 Certkiller 3 (configif) #ip address192.168.37.1 255.255.255.0 Certkiller 3 (configif) #no shutdown Certkiller 3 (configif) #exit Certkiller 3
(config) #interfaceserial 1 Certkiller 3 (configif) #ip address 192.168.33.2255.255.255.0
Certkiller 3 (configif) #no shutdown Certkiller 3 (configif) #exit Certkiller 3 (config) #router rip Certkiller 3 (configrouter)
#network 192.168.33.0 Certkiller 3 (configrouter) #network 192.168.37.0 Certkiller 3 (configrouter) #CtrlZ Certkiller 3
#copy runningconfigstartupconfig

QUESTION 134
You work as network administrator at Certkiller Ltd. Certkiller has three different sites with one router at each site. The routers are named Certkiller 1, Certkiller 2, and Certkiller 3. An assistant technician has configured all the routers, but no connectivity exists between the routers. You task is to identify all error(s) and make the necessary adjustment(s) to establish network connectivity.
The routers have been configured with the following configuration:
*They are named Certkiller 1, Certkiller 2, and Certkiller 3.
*RIP is the routing protocol
*Clocking is provided on the serial 0 interface.
*The password on each router is " Certkiller "
*The subnet mask on all interfaces is the default subnet mask.
*The IP addresses are listed in the chart below.
Certkiller 1
E0192.168.3.1
S0192.168.5.1
Certkiller 2
E0192.168.8.1
S0192.168.11.1
S1192.168.5.2
Certkiller 3
E0192.168.13.2
S1192.168.11.2



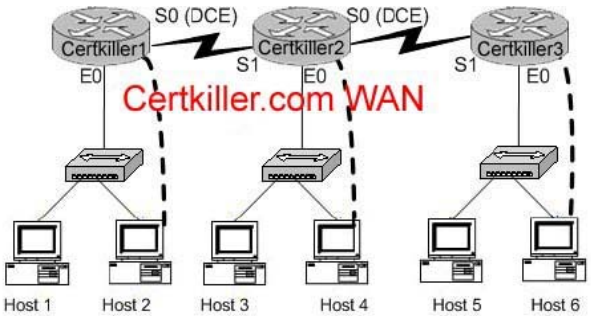
To configure the router click on a host icon that is connected to the router by a serial console cable.

Answer:

Explanation:
Click on Host 2:
Router Certkiller 1:
Certkiller 1>enable
Password: Certkiller
Certkiller 1 #config terminal
Certkiller 1 (config) #interfaceethernet0
Certkiller 1 (configif) #ip address 192.168.3.1 255.255.255.0 Certkiller 1 (configif) #no shutdown Certkiller 1 (configif) #exit Certkiller 1 (config) #interface serial 0 Certkiller 1 (configif)# ip address 192.168.5.1 255.255.255.0
Certkiller 1(configif) #clock rate 64000
Certkiller 1 (configif)# no shutdown Certkiller 1 (configif)# exit Certkiller 1 (config) #router rip Certkiller 1 (configrouter)
#network 192.168.3.0 Certkiller 1 (configrouter) #network 192.168.5.0 Certkiller 1 (configrouter) #CtrlZ Certkiller 1
#copy runningconfig startupconfig
Click on Host 4
Router Certkiller 2:
Certkiller 2>enable
Password: Certkiller Certkiller 2#config t Certkiller 2(config) #interfaceethernet0 Certkiller 2(configif) #ip address192.168.8.1 255.255.255.0 Certkiller 2(configif) #no shutdown Certkiller 2(configif) #exit Certkiller 2(config) #
interface serial 0 Certkiller 2(configif) #ip address 192.168.11.1 255.255.255.0
Certkiller 2(configif) #clock rate 64000 Certkiller 2(configif) #no shutdown Certkiller 2(configif) #exit Certkiller 2
(config) #interface serial 1 Certkiller 2(configif)# ip address 192.168.5.2 255.255.255.0 Certkiller 2(configif) #no
shutdown Certkiller 2(configif) #exit Certkiller 2(config) #router rip Certkiller 2(configrouter) #network 192.168.8.0
Certkiller 2(configrouter) #network 192.168.11.0 Certkiller 2(configrouter) #network 192.168.5.0 Certkiller 2 (configrouter) #CtrlZ Certkiller 2# copy runningconfig startupconfig
Router Certkiller 3:
Click on Host F
Certkiller 3>enable

Password: Certkiller Certkiller 3#config t Certkiller 3(config) #interfaceethernet0 Certkiller 3(configif) #ip address192.168.13.2255.255.255.0 Certkiller 3(configif) #no shutdown Certkiller 3(configif) #exit Certkiller 3(config)
#interfaceserial 1 Certkiller 3(configif) #ip address 192.168.11.2255.255.255.0
Certkiller 3(configif)
#no shutdown Certkiller 3(configif) #exit Certkiller 3(config) #router rip Certkiller 3(configrouter)
#network 192.168.13.0 Certkiller 3(configrouter) #network 192.168.11.0 Certkiller 3(configrouter) #CtrlZ
Certkiller 3#copy runningconfig startupconfig

QUESTION 135
An IT training company called Certkiller has three production facilities. Two of the facilities have network connectivity to each other. The third facility has recently received a router and is to be connected to the other two. The names of routers are QA,StudyGuide, and Examinator. Configure the Examinator router's IP addresses on the E0 and S1 interfaces so that the E0 resolves the first usable subnet while S1 receives the second usable subnet from the network 192.168.81.0/27. Both interfaces should receive the first available IP of the subnet. The zero subnet should not be used. The routers have been configured with the following specifications:
1.The routers are named QA,StudyGuide, and Examinator
2.RIP is the routing protocol
3.Clocking is provided on the serial 0 interfaces.
4.The secret password on the Examinator router is " Certkiller "
5.The IP addresses are listed in the chart below.
Name: QA
E0: 192.168.83.1
S0: 192.168.85.1
Name:StudyGuide
E0: 192.168.88.1
S0: 192.168.81.89
S1: 192.168.85.2
Name:Examinator
E0: to be determined
S1: to be determined
Secret Password: Certkiller

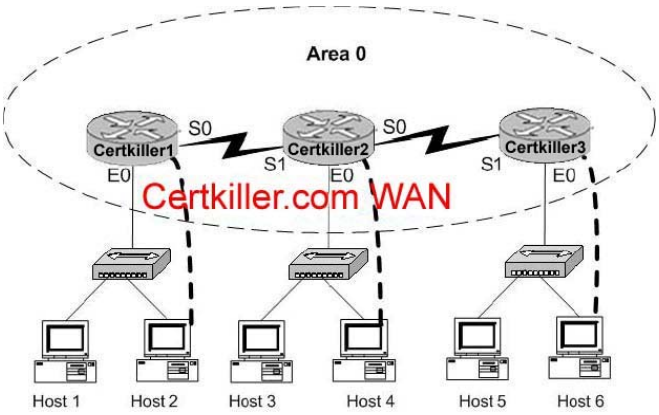


Task:To configure the router click on the host icon that is connected to the router by a serial cable.

Answer:
Examinator#configt
Enterconfiguration commands, one per line. End with END.

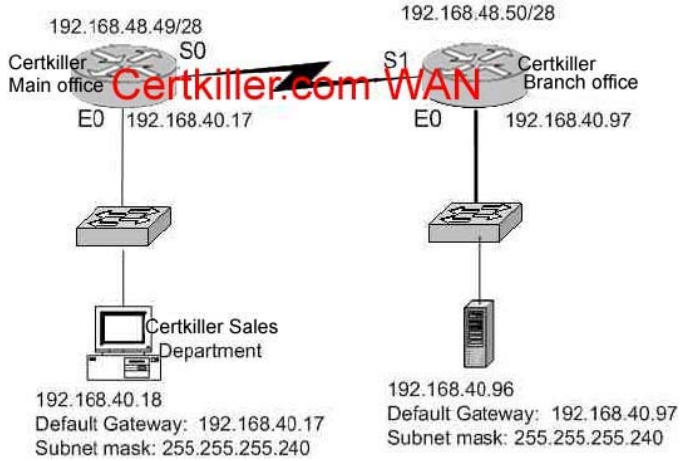
Examinator(config)#inte 0
Examinator(configif)# ip add 192.168.81.33 255.255.255.224
Examinator(configif)# no shut
Examinator(configif)# exit
Examinator(config)#ints 1
Examinator(configif)#
ip add 192.168.81.65 255.255.255.224
Examinator(configif)#
no shut
Examinator(configif)#
CTRL+Z
Examinator#copyrust
..
..
[OK]
Examinator#

QUESTION 136
You are a network technician at Certkiller and have to locate and fix a router problem.
Scenario is as follows:
There are three routers named Certkiller 1, Certkiller 2, and Certkiller 3 respectively. You know that Certkiller 2 and Certkiller 3 are 100% operational.
The routing protocol being used is Single area OSPF.
Certkiller 1 has recently been installed and configured one of the trainees. However, he did not succeed in configuring Certkiller 1 correctly.
He tells you that connectivity is not complete because routing tables are not being updated correctly.
You must now locate and fix this router configuration problem.
Current configuration:
Certkiller 1
E0: 192.168.33.1/24
S0: 192.168.100.5/30
Secret Password: Certkiller
Certkiller 2
E0: 192.168.34.1/24
S0: 192.168.100.10/30
S1: 192.168.100.6/30
Secret Password: Certkiller
Certkiller 3
E0: 192.168.35.1/24
S1: 192.168.100.9/30
Secret Password: Certkiller
Click on the picture of host connected to a router by a serial console cable.



Answer:
Certkiller 1#config t
Certkiller 1(config)#no router ospf 2
Certkiller 1(config)#^Z
Certkiller 1#show ip ospf
Certkiller 1#config t
Certkiller 1(config)#router ospf 2
Certkiller 1(config)#network 192.168.33.0 0.0.0.255 area 0
Certkiller 1(config)#network 192.168.100.4 0.0.0.3 area 0
Certkiller 1(config)#^Z
Certkiller 1#show ip route
Certkiller 1#copy running startup

QUESTION 137
You are the network administrator at Certkiller , Inc. Certkiller users in the Sales Department complain that they are unable to access a new server at the Branch Office. The Certkiller network is shown in the following exhibit:



What is the cause of this problem?
A.The hosts in the Sales Department do not have the correct default gateway address.
B.The hosts in the Sales Department do not have the correct subnet mask.
C.The server at the Branch Office does not have the correct default gateway address.
D.The server at the Branch Office does not have the correct host address.

E. The serial 0 interface on the Main Office router and the serial 1 interface on the Branch Office router are not on the
same sub network.

Answer: D

Explanation: When you convert the IP address (205.113.20.96) of the server and the subnet mask (255.255.255.240)
to binary you will get the following results:(IP address first and then the subnet mask.)
11001101011100010001010001100000
11111111111111111111111111100000
Thus it is determined that the IP address on the host is in fact the subnet address.This is what would be causing the
network problems.
Incorrect Answers:
A.The default gateway in the sales department is correct.
B.The subnet mask is correct.
C.The default gateway in the branch office is correct.
E.This is no problem here.
SteveMcQuerry.Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 233 234.

QUESTION 138
You are the network administrator at Certkiller . Certkiller has been provided with the network address 165.100.27.0/24. The Certkiller CEO wants to know how manysubnetworksthis address provides, and how many hosts can be supported on each subnet.
What would your reply be? (Choose all that apply.)
A.One network with 254 hosts.
B.254 networks with 254 hosts per network.
C.65,534 networks with 255 hosts per network.
D.30 networks with 64 hosts per network.
E.254 networks with 65,534 per network.

Answer: B
This is a class B network. A class B network has a default subnet mask of /16 so the mask has been extended by 8 bits
leaving 8 bits hot hosts. Using the 2n2 formula, we have 282 (or 2x2x2x2x2x2x2x22) which gives us 254.

QUESTION 139
You are a trainee technician at Certkiller . Your instructor wants to know which of the following address can be assigned to network hosts if the subnet mask 255.255.255.224 is used.
What would your reply be? (Choose three.)
A.15.234.118.63
B.92.11.178.93
C.134.178.18.56
D.192.168.19.37
E.201.45.116.159

F.217.63.12.192

Answer: B, C, D

Explanation:
Valid AddressCurrent host range
83.121.178.9383.121.178.65 to 82.121.178.94
134.178.18.56134.178.18.33 to 134.178.18.62
192.168.19.37192.168.19.33 to 192.168.19.62

QUESTION 140
You are the network administrator at Certkiller . Certkiller uses the network address 210.10.2.0. You want to subnet this network with a /28 mask.
How many usablesubnetworksand host addresses per subnet will this subnet mask provide?
A.30 networks and 6 hosts.
B.6 networks and 30 hosts.
C.8 networks and 32 hosts.
D.32 networks and 18 hosts.
E.14 networks and 14 hosts.

Answer: E
A 28 bit subnet mask (11111111.11111111.11111111.11110000) applied to a class C network uses a 4 bits for networks, and leaves 4 bits for hosts. Using the 2n2 formula, we have 242 (or 2x2x2x22) which gives us 14.

QUESTION 141
You are a trainee technician at Certkiller . Your instructor wants you to convert the first octet in Class B address range to binary.
What would your reply be?
A.0000011110001111
B.0000001110011111
C.1000000010111111
D.1100000011011111
E.1110000011101111

Answer: C

Explanation:
The class B address range is 128.0.0.0191.255.255.255. When looking at the first octet alone, the range is 128191.
The binary number for 128 is 10000000 and the binary number for 191 is 10111111, so the value rang is 1000000010111111.

QUESTION 142
Which protocol automates all of the following TCP/IP functions: IP configuration, IP addresses, subnet masks, default gateways, and DNS server information for the hosts on a network?
A.SMTP

B.SNMP
C.DHCP
D.DARP
E.CDP

Answer: C

Explanation: DHCP uses the concept of the client making a request and the server supplying the IP address to the
client, plus other information such as the default gateway, subnet mask, DNS IP address, and other information.
Incorrect Answers:
A.SMTP is the Simple Mail Transfer Protocol, which is used by email servers
B.SNMP is the Simple Network Management Protocol, which is used for remotely managing network devices.
D.DARP does not exist.
E..CDP is the Cisco Discovery Protocol, which is used to exchange information between Cisco devices.It can only be
used between Cisco routers and switches.

QUESTION 143
You are working as an administrator at Certkiller , and you need to set the bandwidth of your routers serial port to 56K. Which of the following commands would you use?

A. Bandwidth 56000
B. Bandwidth 56000000
C. Bandwidth 56
D. Bandwidth 56kbps

Answer: C

Explanation: Cisco IOS translates the bandwidth command to kbps, so after issuing the "bandwidth 56" interface
command the router will display the bandwidth as 56 kbps.

QUESTION 144
NO:3
Which of the following commands can you issue if you want to configure a default route to any destination network not found on router CK1 's routing table?
A. CK1 (config)# ip defaultroute 0.0.0.0 255.255.255.255 s0
B. CK1 (config)# ip route 0.0.0.0 255.255.255.255 s0
C. CK1 (config)# ip defaultroute 0.0.0.0 s0
D. CK1 (config)# ip route 0.0.0.00.0.0.0s0
E. CK1 (config)# ip route anyanye0

Answer: D

Explanation: There are two ways to specify a default static route.One is to specify the interface to use for

forwarding
packets, the other way is to specify the IP address of the next hop router.The ip route 0.0.0.00.0.0.0command uses the
fact that network 0.0.0.0 is used by Cisco IOS software to represent the default network.
Incorrect Answers:
A, B.All zero's must used for the subnet mask of a default route, not all 1's.
C.The defaultroute command does not exist.
E.the "any" keyword is used in access lists, not for configuring static routes.

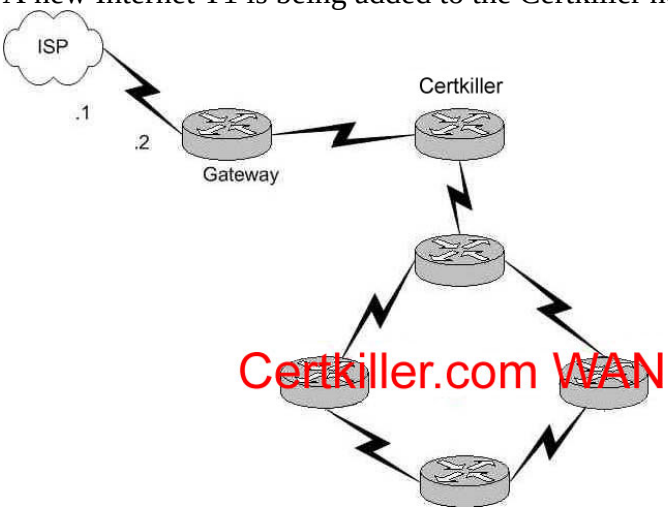
QUESTION 145
The Certkiller network is displayed below:

You are a network administrator and you've just finished configuring the static route 10.5.6.0 /24 on router Certkiller . Which command should you use if you want Certkiller to consider this route the most reliable?
A. Certkiller (config)# ip route 10.5.6.0 0.0.0.255 fa0/0
B. Certkiller (config)# ip route 10.5.6.0 0.0.0.255 10.5.4.6
C. Certkiller (config)# ip route 10.5.6.0 255.255.255.0 fa0/0
D. Certkiller (config)# ip route 10.5.6.0 255.255.255.0 10.5.4.6
E. Certkiller (config)# ip route 10.5.4.6 0.0.0.255 10.5.6.0
F. Certkiller (config)# ip route 10.5.4.6 255.255.255.0 10.5.6.0

Answer: C, D

Explanation: There are two ways to specify a default static route.One is to specify the interface to use for forwarding
packets, like the example in C.The other way is to specify the IP address of the next hop router, such as the example in
D.
Additional Info:
The following is the command you use to add a static route to a routing table:
Ip route [destination_network] [mask] [nexthop_ addressorexitinterface] [administrative_distance][permanent]
This list describes each command in the string:
ip routeThe command used to create the static route.
destination networkThe network you're placing in the routing table.
maskThe subnet mask being used on the network.
nexthop addressThe address of the nexthop router that will receive the packet and forward it to the remote network.
This is a router interface that's on a directory connected network.
administrative_distanceBy default, static routes have an administrative distance of 1. You can change the default
value by adding an administrative weight at the end of the command.

QUESTION 146
A new Internet T1 is being added to the Certkiller network as shown:



The ISP assigned you the class CIP address 207.134.6.0/30 for this Internet connection.A default route to the Internet should be set up.Which of the following are acceptable ways to configure this on the Gateway router?(Select all that apply)
A.Gateway(config)#ip route 0.0.0.00.0.0.0207.134.6.1.
B.Gateway(config)#router rip
Gateway(configrouter)# network 207.134.6.0 default
C.Gateway(config)#ip route 207.134.6.0 255.255.255.0 Serial0/0
D.Gateway(config)#router OSPF
Gateway(configrouter)# network 207.134.6.0
E.Gateway(config)#ip defaultnetwork 207.134.6.0

Answer: A, E

Explanation: This question only involves the configuration of the gateway router to the ISP, nothing else. You have two
choices to accomplish this: the command "ip route" or the command "ip defaultnetwork". Both of these methods will
configure a default route to the ISP as desired.
Incorrect Answers:
B, D.RIP and OSPF are interior routing protocols.The T1 Internet connection that is being set up here is between two
different Autonomous Systems.The only routing protocol that could be potentially used is BGP, but that is not an option.
C.This command will only set up a static route to the 207.134.6.0/24 network.We wish to set up a static default route.

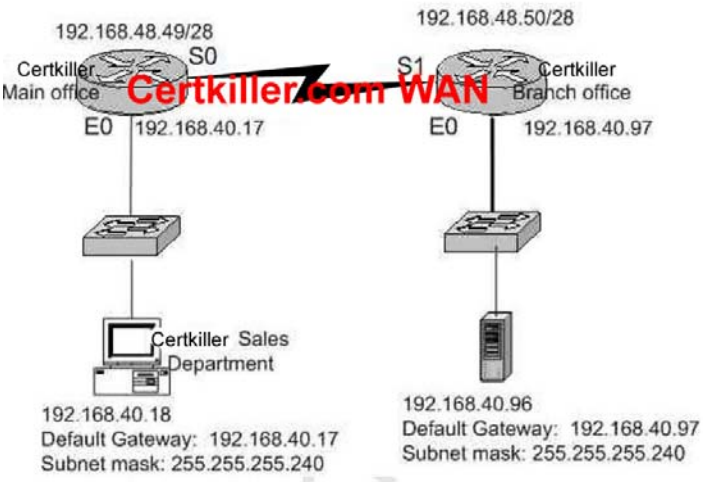
QUESTION 147
Which of the following commands would you execute if you wanted to enable others to establish a Telnet session on a Cisco router?
A. Certkiller 1(config)#line console 0
Certkiller 1(configif)# enable password Certkiller

B. Certkiller 1(config)#line vty 0
Certkiller 1(configline)# enable password Certkiller
C. Certkiller 1(config)#line vty 0
Certkiller 1(configline)# enable secret Certkiller
Certkiller 1(configline)# login
D. Certkiller 1(config)#line console 0
Certkiller 1(configline)# enable secret Certkiller
Certkiller 1(configline)# login
E. Certkiller 1(config)#line console 0
Certkiller 1(configline)# password Certkiller
Certkiller 1(configline)# login
F. Certkiller 1(config)#line vty 0
Certkiller 1(configline)# password Certkiller
Certkiller 1(configline)# login

Answer: F

Explanation: Telnet sessions use virtual terminal sessions, which are configured under the "line vty" portion of the
configuration.There are 5 total vty sessions that can be configured, numbered 04.
Inorderto be prompted for a
password, one must be configured.Choice F gives the 3 commands needed to allow a single telnet session.
Incorrect Answers:
A, B, C, D.The telnet password needs to be configured in addition to the enable password.Without the initial password
configured, users that try to telnet to the router will receive a "password required, but none set" message.
D, E.Telnet uses VTY ports, not the console port.

QUESTION 148
The Certkiller network is displayed below:



You need to perform the following functions on router Certkiller 2:
1.Login using the current enable password: Certkiller
2.Configure the console password to be: test

3.Configure all telnet line passwords to be: king
To configure the router click on a host icon that is connected to a router by a serial cable.

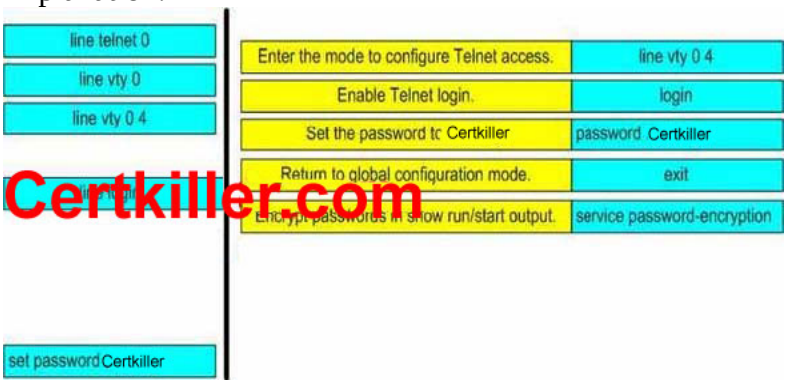
Answer:

Explanation:
Click on Host 4:
Router Con0 is now availablePress RETURN to get started ! We press enter
Router Certkiller 2:
Certkiller 2>enable!We enter enable mode
Password: Certkiller !We enter " Certkiller "
Certkiller 2 #config terminal!We enter the terminal
Enter configuration commands, one per line. End with CTRL/Z
Certkiller 2 (config) #line console 0!Configure the terminal connection
Certkiller 2 (configline)# login
Certkiller 2 (configline)#
password test!Specify the terminal connection password
Certkiller 2 (configline)# exit
Certkiller 2 (config) #line vty 0 4!Configure the telnet connections. Numbered 0,1,2,3,4.
Certkiller 2 (configline)# login
Certkiller 2 (configline)# password king!specify the password
Certkiller 2 (configline)# exit!Exit from configuration mode.
Certkiller 2 (config) #exit
Certkiller 2 #copy runningconfigstartupconfig! Saves the running config to NVRAM.
Reference:
CCNA SelfStudy CCNA INTRO exam certification Guide (Cisco Press, ISBN 1587200945) Page 177

QUESTION 149
Your goal is to restrict all access to your router except for Telnet. To make this happen, move the commands on the left side to corresponding functions on the right side using the diagram below for reference.Note that not every option will be used.

Answer:

Explanation:



QUESTION 150
You wish to increase the security of all of the routers within your network.What can be done to secure the virtual terminal interfaces on a router? (Choose two)
A.Administratively shut down the interface.
B.Physically secure the interface.
C.Create an access list and apply it to the virtual terminal interfaces with theaccessgroupcommand.
D.Configure a virtual terminal password and login process.
E.Enter an access list and apply it to the virtual terminal interfaces using theaccessclasscommand.

Answer: D, E

Explanation:
There are a total of 5 logical Virtual terminal interfaces in a Cisco router (lines 04)
and they are used for remote access
into the device via telnet.Configuring these interfaces correctly with a login and password information can be used for
security, as each user will be prompted for a password inorderto obtain access.A second method is to use the "accessclass" command.Combined with an access list, this command can be used to specify the hosts or networks that
will be allow access to the device.
Incorrect Answers:
A.Virtual terminal interfaces are logical interfaces that can not be manually shut down.
B.Virtual terminal lines are logical interfaces that reside within a router, so there is nothing that can be physically secured.
C.This command is used with accesslists
for LAN and WAN interfaces, but is not used for the VTY lines.

QUESTION 151
You wish to limit telnet access into your Cisco router to only a single host.Inorderto accomplish this, access list 1 has been written to allow host 172.16.1.224 access to the router vty lines. What command would assign this access list to the Virtual Terminal Lines?

A. router(configline)# ip accessgroup 1 in
B. router(configline)# accessclass 1 in

C. router(configline)# ip accesslist 1 in
D. router(configline)# accessline 1 in

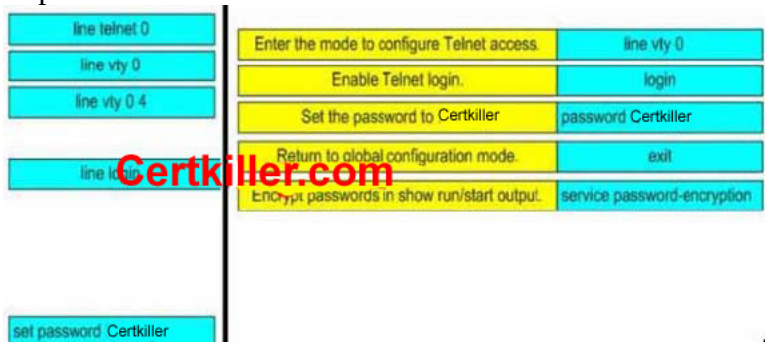
Answer: B

Explanation:
To restrict incoming and outgoing connections between a particular vty (into a Cisco device) and the addresses in an
access list, use the accessclass
command in line configuration mode.
Example:
The following example defines an access list that permits only the host 172.16.1.224 to connect to the virtual terminal
ports on the router, as described in this question:
access list 1 permit 172.16.1.2240.0.0.0
line 1 5
access-class 1 in

QUESTION 152
You need to allow only ONE Telnet connection to a router.
Match the commands on the left that will accomplish this task with their function on the right.(Note that not all answer choices will be used).

Answer:

Explanation:



QUESTION 153
Which router console commands are used to manage telnet sessions to other routers? Select three.

A. Certkiller D#disconnect 3
B. Certkiller D#exit session 2
C. Certkiller D#kill connection 1
D. Certkiller D#show sessions
E. Certkiller D#show connection all
F. Certkiller D#resume 4

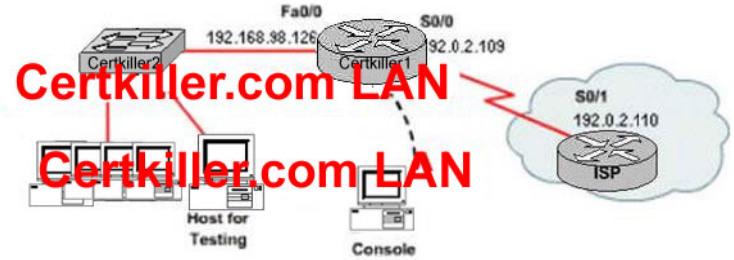
Answer: A, D, F

Explanation:
Reference:

Function	Command Options
Telnet to another device	Use telnet exec command. Just type the host or IP address from exec mode.
Suspend a Telnet session	Press the key sequence Ctrl-Shift-6, then x
Discover currently suspended Telnet session	Use the where exec command Use the show sessions exec command
Resume a suspended Telnet session	Use the resume command, with no parameter, to reconnect to the most recently suspended Telnet. Use the resume x command, where x is the number of the suspended Telnet session based on the output of show sessions. Just press Enter in exec mode to resume to the most recently suspended Telnet session.
Terminate a suspended telnet	Resume connection, and log out using the quit command. Use the disconnect command on the router you Telnnetted from.

CiscopressCCNAINTRO p.392

QUESTION 154
Network topology exhibit.



You work as a network administrator at Certkiller .com. You are configuring a router to provide Internet access. The ISP has provided Certkiller .com with six public IP addresses of 198.18.158.97, 198.18.158.97, 198.18.158.98, 198.18.158.99, 198.18.158.100, 198.18.158.101, and 198.18.158.102. Certkiller .com has 62 hosts that need access to the Internet simultaneously. The hosts in the Certkiller .com LAN have been assigned private space addresses in the range of 192.168.98.65 192.168.98.126.
The following have already been configured on the router:
1.The basic router configuration
2.The appropriate interfaces have been configured for NAT inside an NAT outside.

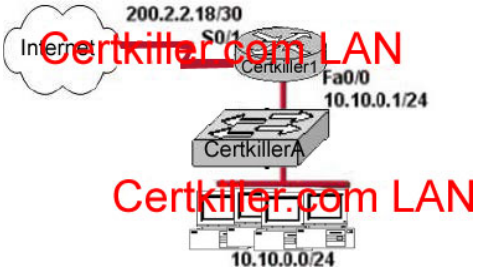
3.The appropriate static routes have also been configured (since the company will be a stub network, no routing protocol will be required)
4.All passwords have been temporarily set to " Certkiller "
The task is to complete the NAT configuration using all IP addresses assigned by the ISP to provide Internet access to the hosts in the Certkiller 1 LAN. Functionality can be tested by clicking on the host provided for testing.
Configuration information:
Router name: Certkiller 1
inside global addresses: 198.18.158.97 198.18.158.102/29
inside local addresses: 192.168.98.65 192.168.98.126/ 26
Number of inside hosts: 62
password: Certkiller
Simulation.

Answer:

Explanation:
Certkiller 1(config)#ipnatinside source list 1 poolnatpool overload Certkiller 1(config)#accesslist 1 permit 192.168.98.64 0.0.0.63
Certkiller 1(config)#ipnatpoolnatpool 198.18.158.97 198.18.158.102netmask255.255.255.248 Certkiller 1(config)#inte0
Certkiller 1(configif)# ipnatinside Certkiller 1(configif)# exit Certkiller 1(config)#ints0 Certkiller 1(configif)# ipnatoutside
Certkiller 1(configif)# end Certkiller 1#copy run start
Previously the ipnatpoolnatpool was configured with /26 which is 255.255.255.192 which is incorrect because we are
configuring inside global and it's /29 which is 255.255.255.248.
Note:
Variation #1:
Router name: Certkiller 1
inside global addresses: 198.18.32.217 192.18.32.222/29
inside local addresses: 192.168.57.33 192.168.57.62/ 27
Number of inside hosts: 30
Certkiller 1>enable Certkiller 1# configure terminal Certkiller 1(config)# ipnatpool Certkiller 198.18.32.217198.18.32.222
netmask255.255.255.248 Certkiller 1(config)# ipnatinside source list 1 pool Certkiller overload Certkiller 1(config)# ip
accesslist
1 permit192.168.57.33 0.0.0.31
Variation #2:
Router name: Certkiller 1
inside global addresses: 198.18.169.121 198.18.169.126/29
inside local addresses: 192.168.2.33 192.168.2.62/ 27
Number of inside hosts: 30
Certkiller 1>enable Certkiller 1# configure terminal Certkiller 1(config)# ipnatpool Certkiller 198.18.169.121

198.18.169.126netmask255.255.255.248 Certkiller 1(config)# ipnatinside source list 1 pool Certkiller overload Certkiller 1(config)# ip accesslist 1 permit192.168.2.33 0.0.0.31

QUESTION 155
Network topology exhibit



Certkiller . com wants to use NAT in network displayed in the exhibit.
Which commands will apply the NAT configuration to the proper interfaces? Select two.
A. Certkiller 1(config)#interface serial0/1 Certkiller 1(configif)# ipnatinside
B. Certkiller 1(config)#interface serial0/1 Certkiller 1(configif)# ipnatoutside
C. Certkiller 1(config)#interface fastethernet0/0 Certkiller 1(configif)# ipnatinside
D. Certkiller 1(config)#interface fastethernet0/0 Certkiller 1(configif)# ipnatoutside
E. Certkiller 1(config)#interface serial0/1 Certkiller 1(configif)# ipnatoutside source pool 200.2.2.18 255.255.255.252
F. Certkiller 1(config)#interface serial0/1 Certkiller 1(configif)# ipnatinside source 10.10.0.0 255.255.255.0

Answer: B, C

Explanation:
After creating the static NAT entries, the router needs to know which interfaces are "inside" and which are "outside."
The ipnatinside and ipnatoutside interface subcommands identify each interface appropriately.
Reference: Cisco CCNA ICND p.271

QUESTION 156

Refer to the topology and partial configuration output shown in the graphic. The ip subnetzero configuration command is also in effect. After the router performs network address translation, which address is a valid "inside global address"?
A.10.10.0.1
B.10.10.0.17
C.200.2.2.17

D.200.2.2.18
E.199.99.9.33
F.199.99.9.57

Answer: F

QUESTION 157
Which of the following steps are necessary inorderto add a new VLAN to a switched network? (Select all that apply.)
A.Create the VLAN.
B.Name the VLAN.
C.Configure an IP address for the VLAN.
D.Add the desired ports to the new VLAN.
E.Add the VLAN to the VTP domain.

Answer: A B D

Explanation: The following are the basic requirements for creating VLANs:
*Creating the VLAN numbers and names
*Configuring each port's assigned VLAN
Incorrect Answers:
C.This is an optional feature, but not a necessary step for creating a VLAN.
E.Adding any VLAN to a Virtual Trunking Protocol (VTP) domain may be desired in a complex multiswitch and
multiVLAN network.However, it is not a necessary step for creating standalone VLANs on a single switch.

QUESTION 158
You are bringing up a new Cisco Catalyst switch, and wish to connect it via a trunk to another switch from a different vendor, which uses the IEEE standard for the trunking method.When setting the encapsulation type on the trunk, what should you configure on the Cisco switch?
A.Switch(config)#switchporttrunk encapsulationisl
B.Switch(config)#switchporttrunk encapsulationietf
C.Switch(configif)# switchporttrunk encapsulationisl
D.Switch(configif)# switchporttrunk encapsulationietf
E.Switch(configif)# switchporttrunk encapsulation dot1q

Answer: E

Explanation: The only real choices for setting up switching trunks are ISL and 802.1Q.ISL is Cisco proprietary, while
802.1Q uses the IEEE defined standard for trunking between switches.
To configure the 802.1Q standard, the keyword "dot1q" is used in Cisco switches.
Incorrect Answers:
A, B, D.These are not valid options in a Cisco switch.
C.ISL is a Cisco proprietary method for setting up trunks, and will only work between Cisco switches.

QUESTION 159
A new switch is being installed and you have been assigned the task of connecting it to an existing switch.In doing this, you want to set up the VLAN Trunking Protocol so that VLAN information can be passed between the switches.Which of the following must you do to accomplish this? (Choose all that apply).
A.You must set each end of the trunk line to IEEE 802.1e encapsulation.
B.You must set the same VTP management domain name on both switches.
C.You must set all ports on the two switches as access ports.
D.You must configure one of the switches as a VTP server.
E.You must use a rollover cable to connect the two switches.

Answer: B, D

Explanation:
The following describes what is needed inorderto correctly set up VTP:

VTP operates in one of three modes:

- Server mode
- Client mode
- Transparent mode

For VTP to exchange information, some switches act as servers, and some act as clients. VTP servers can create, modify, and delete VLANs and other configuration parameters for the entire VTP domain; this information, in turn, is propagated to the VTP clients and servers in that same domain. VTP servers save VLAN configurations in the Catalyst NVRAM, whereas in clients, the VLAN configuration is not stored at all. A VTP client cannot create, change, or delete VLANs, nor can it save VLAN configurations in nonvolatile memory.

Incorrect Answers:
A.The encapsulation can be either ISL or 802.1Q, and need to match at each end of the trunk.
C.Ports must only be assigned to VLANS.
Once that is done and the trunk is up and running, the VLAN information will be passed between the switches.
E.A regular CAT5 cable is used to connect the switches, assuming 10/100ehternetis used.

QUESTION 160
A new switch is installed into an existing LAN and a new VTP trunk is set up with an existing switch.Which VLANs will be allowed on this new trunk?
A.All defined VLANs are allowed on the trunk by default.
B.Each VLAN, or VLAN range, that is specified with theswitchportmodecommand.
C.Each VLAN, or VLAN range, that is specified with thevtpdomaincommand.
D.Each VLAN, or VLAN range, that is specified with thevlandatabasecommand.

Answer: C

Explanation:
By default, all VLANs that are configured to be in the same VTP domain will be allowed by the VTP trunk.
Incorrect Answers:
A.Only the VLANs contained in the same VTP domain will traverse the trunk.
B, D.These commands do not have any influence on the VLANs that will be allowed over a trunk.

QUESTION 161
Which of the following a true statements regarding the use of VLANs to segment a network? (Select three.)

A. They increase the size of collision domains

B. They allow logical grouping of users by function.
C. They can enhance network security.
D. They increase the size of the broadcast domain while decreasing the number of collision domains.
E. They increase the number of broadcast domains while decreasing the size of the broadcast domains.
F. They simplify switch administration.

Answer: B, C, E

Explanation:
VLANs are used to segment a LAN into multiple, smaller LANs.This can be used to enhance security as local traffic
from one VLAN will not be passed to users in other VLANS.
Incorrect Answers:
A.VLANs are used to decrease the size of a collision domain, not increase it.
D. The opposite is true.
F.The default operation of a switch is to allow all traffic and to enable all ports in VLAN 1.The use of VLANs will
increase the complexity of the switch environment, making for more difficult administration.

QUESTION 162
What is a characteristic of ISL and 802.1q frame tagging in a switched LAN environment?
A.They are used to find the best path through a network.
B.They allow the exchange of filtering tables.
C.They specify different implementations of the SpanningTree
Protocol.
D.They allow the exchange of routing tables
E.They provide interswitch
VLAN communication.

Answer: E

Explanation: A trunk link is the other type of Layer 2 port supported on Ciscoswitches. When a trunk port is configured, it begins marking frames as theyexit the port to indicate which VLAN each frame is associated with. The
trunk port can also read the markings, called tags, as they enter the trunkport. This enables the switch to send a frame
only to the ports for thegiven VLAN associated with the incoming frame.The main purpose of trunking is to carry traffic
between switches andmaintain the VLAN information. Unlike an access link, the trunk link doesnot belong to a single
VLAN but instead can carry traffic from several VLANsover a pointtopoint link between two devices that understand
the protocol.Two forms of trunking are used for Cisco switches on Ethernet networks:An IEEE industry standard called
IEEE 802.1Q. This is a frame taggingmechanism that adds a VLAN identifier to the frame by inserting a tag atLayer 2.

Another form of trunking on Cisco switches is called InterSwitch
Link(ISL), which is a Cisco proprietary trunking
mechanism. ISL uses a frameencapsulation method that adds a header to identify the VLAN.
Incorrect Answers:
A, D.These are the functions of routers, not switches.
B.Filtering tables can be used on certain Catalyst switches via the use of VLAN access control lists, but this information
is never shared between switches.
C.A separate STP instance is created for each VLAN, but the STP implementation remains the same.

QUESTION 163
A new VLAN needs to be created for an existing network.Which of the following are the minimum tasks that must be accomplished inorderto create the new VLAN?(Select three answer choices)

A. The VLAN must be created
B. The VLAN must be named
C. An IP address and subnet mask must be configured for the new VLAN
D. The desired ports must be added to the new VLAN
E. The VLAN must be added to the existing VTP Domain

Answer: A, B, D

Explanation:
The best answers are A, B, D. Inorderto create a simple VLAN, you must create the VLAN, name it, and then assign
ports to it.These are the minimum requirements for a functioning VLAN.
Incorrect Answers:
C.Although an IP address is often configured, it is not required inorderto create a functioning VLAN.
E.By default, the VLAN will already be added to the VTP domain.Even if the new VLAN was not part of the VTP
domain, it would still work as a new VLAN on the switch.

QUESTION 164
What are some of the characteristics of a typical VLAN arrangement? (Select all that apply)
A.VLANs logically divide a switch into multiple, independent switches at Layer 2.
B.Trunk links can carry traffic for multiple VLANs.
C.VLAN implementation significantly increases traffic due to added trunking information.
D.A VLAN can span multiple switches.
E.VLANs typically increase the number of switches needed
F.VLANs typically decrease the number of switches needed

Answer: A, B, D

Explanation:
VLANs give you the power of making virtual LAN networks to subdivide collision domains into smaller units of

functionality, without being limited by physical location.
A is correct because that is the exact function of a VLAN. B is correct because trunk links are used to carry traffic for
multiple VLANs. D is correct because a VLAN can and often does span across multiple switches.VTP makes this
possible.
Incorrect Answers:
C.Although trunking information does indeed add some level of overhead, the overall traffic overhead is greatly reduced
though the use of VLANs.
E, F.The number of total switches needed in a network is the result of the number of devices on the entire LAN that
need to be connected.Whether VLANs are used or not will have little, if any, impact on the total number of switches
needed in a LAN.

QUESTION 165
Which one of the following protocols allows the information about the configuration of a new VLAN to be distributed across entire switched network?
A.STP
B.VTP
C.EIGRP
D.SNMP
E.CDP
F.None of the above

Answer: B

Explanation:
SybexCCNA Study Guide 4th Edition states on page 359:"The basic goals of VLAN Trunking Protocol (VTP) are to
manage all configured VLANs across a switchedinternetworkand to maintain consistency throughout that network. VTP
allows an administrator to add, delete, and rename VLANsinformation
that is then propagated to all other switches in
the VTP domain."
Incorrect Answers:
A.STP is the Spanning Tree Protocol, used to prevent bridging loops in a LAN.
C.EIGRP is a routing protocol used to exchange routing information, not VLAN information.
D.SNMP is the Simple Network Management Protocol, used to provide information to remote network management
stations.
E.CDPis the Cisco Discovery Protocol, which is used to exchange information between Cisco devices.It can only be
used between Cisco routers and switches.

QUESTION 166
Which encapsulation types are configurable on a Cisco switch for a trunk?(Select two answer choices)
A.VTP
B.ISL
C.CDP
D.802.1Q
E.802.1p
F.LLC
G.IETF

Answer: B, D

Explanation:
Trunks are used to carry traffic belonging to multiple VLANs between devices over the same link. A device can determine which VLAN the traffic belongs to by its VLAN identifier. The VLAN identifier is a tag that is encapsulated
with the data.ISL and 802.1q are two types of encapsulations used to carry data from multiple VLANs over trunk links.
ISL is a Cisco proprietary protocol for interconnecting multiple switches and maintaining VLAN information as traffic
goes between switches. ISL provides VLAN trunking capabilities while maintaining full wire speed performance on
Ethernet links in fullduplex or halfduplex mode. ISL operates in a pointtopoint environment and will support up to
1000 VLANs. In ISL, the original frame is encapsulated and an additional header is added before the frame is carried
over a trunk link. At the receiving end, the header is removed and the frame is forwarded to the assigned VLAN. .ISL
uses Per VLAN Spanning Tree (PVST) which runs one instance of Spanning Tree Protocol (STP) per VLAN. PVST
allows for optimal root switch placement for each VLAN and supports load balancing of VLANs over multiple trunk
links.
802.1Q is the IEEE standard for tagging frames on a trunk and supports up to 4096 VLANs. In 802.1Q, the trunking
device inserts a fourbyte tag into the original frame and recomputes the Frame Check Sequence (FCS) before sending
the frame over the trunk link. At the receiving end, the tag is removed and the frame is forwarded to the assigned
VLAN. 802.1Q does not tag frames on the native VLAN. It tags all other frames transmitted and received on the trunk.
While configuring a 802.1 trunk, you must make sure that the same native VLAN is configured on both sides of the
trunk. IEEE 802.1Q defines a single instance of spanning tree running on the native VLAN for all the VLANs in the
network which is called Mono Spanning Tree (MST). This lacks the flexibility and load balancing capability of

PVST
available with ISL. However, PVST+ offers the capability to retain multiple Spanning Tree topologies with 802.1Q
trunking.

QUESTION 167
You need to create a new VLAN on your Catalyst switch.This VLAN is to be named Certkiller .Which of the following need to be completed for the creation of this new VLAN?(Select all that apply)
A.The Certkiller VLAN must be created.
B.The desired ports must be added to the new Certkiller VLAN.
C.The Certkiller VLAN must be added to all of the domains.
D.The Certkiller VLAN must be named.
E.An IP address must be configured for the Certkiller VLAN.
F.None of the above.VLAN creations are automatic.

Answer: A, B, D

Explanation:
Creating a VLAN is done in 3 steps:
1.Create the VLAN
2.Name the VLAN
3.Assign ports to the VLAN
From there, other features and functionality can be configured, but these are the only steps that are required for the
addition of a VLAN.
Incorrect Answers:
C.The VLAN needs only to be added to a single switch, where it can act as a standalone
VLAN, or it can be
transferred to other switches in the network through the use of the VTP protocol.
E.VLANs operate at layer 2, and although many are configured with a layer 3 IP address, it is not absolutely necessary
to do this.

QUESTION 168
When a switch port is used as a VLAN trunk, which of the following trunk modes are valid? (Select all that apply.)
A.blocking
B.auto
C.desirable
D.on
E.transparent
F.learning
G.off

Answer: B, C, D, G

Explanation:
A trunk port can be configured as one of the following 5 different modes:on, off, desirable, auto, ornonegotiate. The table below is a summary of the configuration modes.

Mode	Function	DTP Frames Transmitted	Final State (Local Port)
`Auto`(default)	Makes the port willing to convert the link to a trunk. The port becomes a trunk port if the neighboring port is set to `on` or `desirable` mode.	Yes, periodic.	Trunking
`On`	Puts the port into permanent trunking mode and negotiates to convert the link into a trunk. The port becomes a trunk port even if the neighboring port does not agree to the change.	Yes, periodic.	Trunking, **unconditionally**.
`Nonegotiate`	Puts the port into permanent trunking mode but prevents the port from generating DTP frames. You must configure the neighboring port manually as a trunk port to establish a trunk link. This is useful for devices that do not support DTP.	No	Trunking, **unconditionally**.
`Desirable`	Makes the port actively attempt to convert the link to a trunk link. The port becomes a trunk port if the neighboring port is set to `on`, `desirable`, or `auto` mode.	Yes, periodic.	It will end up in trunking state only if the remote mode is `on`, `auto`, or `desirable`.
	Puts the port into		

QUESTION 169
Which of following VLAN frame encapsulation types are configurable on a Cisco switch? (Select two answer choices.)
A.VTP
B.802.1Q
C.LLC
D.ISL
E.CDP
F.PAP

Answer: B, D

Explanation:
ISL and 802.1Q are the two trunking encapsulations that can be configured on a Cisco switch. ISL is Cisco proprietary
and 802.1Q is the IEEE standard method.
Incorrect Answers:
A.VTP is the VLAN Trunking Protocol, which is used to carry VLAN information across the trunks.The

question is
asking for the encapsulation options for the trunk, which will be used by VTP.
C.LLC is the Logical Link Control, which is a sublayer of the data link layer.
E.CDPis the Cisco Discovery Protocol, which is used by Cisco devices to discover information on neighboring Cisco
devices.
F.PAP is the Password Authentication Protocol, which is used as an authentication mechanism on PPP links.

QUESTION 170
Which VTP mode should a Cisco switch be set to ifthis switch is to add or delete VLANs to a management domain?
A.Transparent
B.Server
C.Auto
D.Client
E.User

Answer: B

Explanation:
VTP Modes:
If you intend to make a switch part of a VTP management domain, each switch must be configured in one of three
possible VTP modes. The VTP mode assigned to a switch will determine how the switch interacts with other VTP
switches in the management domain. The three VTP modes that can be assigned to a Cisco switch include server mode,
client mode, and transparent mode. Each of these roles is outlined below:
Server Mode Once VTP is configured on a Cisco switch, the default mode used is Server Mode. In any given VTP
management domain, at least one switch must be in Server Mode. When in Server Mode, a switch can be used to add,
delete, and modify VLANs, and this information will be passed to all other switches in the VTP management domain.
Client Mode When a switch is configured to use VTP Client Mode, it is simply the recipient of any VLANs added,
deleted, or modified by a switch in Server Mode within the same management domain. A switch in VTP client mode
cannot make any changes to VLAN information.
Transparent Mode A switch in VTP Transparent Mode will pass VTP updates received by switches in Server Mode to
other switches in the VTP management domain, but will not actually process the contents of these messages. When
individual VLANs are added, deleted, or modified on a switch running in transparent mode, the changes are local to that
particular switch only, and are not passed to other switches in the VTP management domain.

Based on the roles of each VTP mode, the use of each should be more or less obvious. For example, if you had 15
Cisco switches on your network, you could configure each of them to be in the same VTP management domain. Although each could theoretically be left in the default Server Mode, it would probably be easier to leave only one
switch in this configuration, and then configure all remaining switches for VTP Client Mode. Then, when you need to
add, delete, or modify a VLAN, that change can be carried out on the VTP Server Mode switch and passed to all
Client Mode switches automatically. In cases where you need a switch to act in a relatively standalone manner, or do
not want it to propagate information about its configured VLANs, use Transparent Mode.
Incorrect Answers:
A.A switch in VTP Transparent Mode will pass VTP updates received by switches in Server Mode to other switches in
the VTP management domain, but will not actually process the contents of these messages.
C, E.These are not valid VTP modes.
D.Client mode merely accepts changes made by the switch that is connected and in SERVER mode.

QUESTION 171
What must an administrator do inorderto successfully configure a VLAN trunk between two switches? (Select two answer choices)
A.Set each end of the trunk line to IEEE 802.1Q encapsulation.
B.Set the same VTP management domain name on both switches.
C.Set all ports on the two switched as access ports.
D.Configure one of the two switches as a VTP server.
E.Connect the two switches using a rollover cable.
F. Use a router to forward VTP traffic between the VLANs.

Answer: B, D

Explanation:
All servers that need to share VLAN information must use the same domain name, and a switch can only be in one
domain at a time. This means that a switch can only share VTP domain information with other switches if they're
configured into the same VTP domain. You can use a VTP domain if you have more than one switch connected in a
network, but if you've got all your switches in only one VLAN, you don't need to use VTP. VTP information is sent
between switches via a trunk port.
Switches advertise VTP management domain information, as well as a configuration revision number and all known
VLANs with any specific parameters. There's also something called VTP transparent mode, in it, you can configure
switches to forward VTP information through trunk ports, but not to accept information updates or update their

VTP
databases.At least one of the switches will need to be configured as the VTP server inorderto pass the VLAN info.
Incorrect Answers:
A.Although this is a valid option, it is not a requirement since using ISL as the encapsulation type is also a valid option.
E.A rollover cable is not used between switches for any of the port types.
F.Routers will be required for sending traffic from one VLAN to the other, but not to forward the actual VTP traffic.

QUESTION 172
Which of the following can be an expected outcome of a VLAN? (Select all that apply)
A.VLANs logically divide a switch into multiple, independent switches at Layer 2.
B.Trunk links can carry traffic for multiple VLANs.
C. VLAN implementation significantly increases traffic due to added trunking information.
D.VLANs can span multiple switches.
E.VLANs typically decrease the number of switches needed

Answer: A, B, D

Explanation:
VLANs give you the power of making virtual LAN networks to subdivide collision domains into smaller units of
functionality, without being limited by physical location.
A is correct because that is the exact function of a VLAN. B is correct because trunk links are used to carry traffic for
multiple VLANs. D is correct because a VLAN can and often does span across multiple switches.VTP makes this
possible.
Incorrect Answers:
C. Although trunking information does indeed add some level of overhead, the overall traffic overhead is greatly reduced
though the use of VLANs.
E, F.The number of total switches needed in a network is the result of the number of devices on the entire LAN that
need to be connected.Whether VLANs are used or not will have little, if any, impact on the total number of switches
needed in a LAN.

QUESTION 173
How could a large corporation with many specialized divisions benefit from using VLANs on their networks? (Select three answer choices.)
A.VLANs allow access to network services based on department, not physical location.
B.VLANs utilize packet filtering to enhance network security.
C.VLANs provide a lowlatency,
high bandwidth internetworking alternative.

D.VLANs provide a method of communication between IP addresses in large networks.
E.VLANs establish segmented broadcast domains in switched networks.
F.VLANs can greatly simplify adding, moving, or changing hosts on the network.

Answer: A, E, F

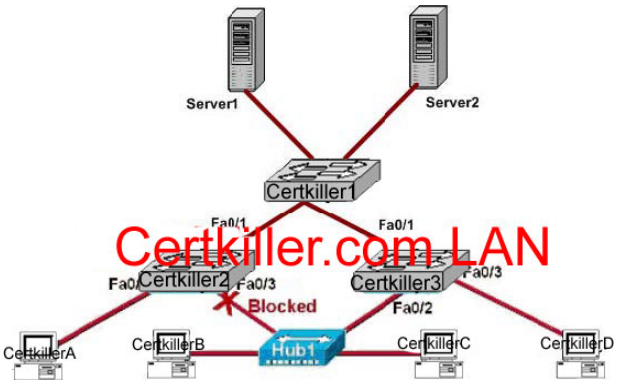
Explanation:
VLANs establish broadcast domains in switched networks, so by virtue of having the option to create many efficient
broadcast domains, congestion is reduced and network throughput is greatly enhanced. VLANs allow networks to be
divided by department or resource needs, rather then by physical location. When people move departments, leave a
department, or join a department, administration is easy and convenient with a few keystrokes.
Incorrect Answers:
B, D.These would be router functions at layer 3.Switches and VLANs operate at layer 2 of the OSI model.
C.The use of VLANs may actually increase the latency in some cases, as traffic from one VLAN to the other will need
to be routed.

QUESTION 174
Which commands, when used together, would create an 802.1Q link?(Select two answer choices)
A.Switch(vlan)#mode trunk
B.Switch(config)#switchportaccess mode trunk
C.Switch(configif)# switchportmode trunk
D.Switch(configif)# switchporttrunk encapsulation dot1q
E.Switch(config)#switchportaccess mode 1
F. Switch(vlan)#trunk encapsulation dot1q

Answer: C, D

Explanation:
Creating this trunk link is a two step process. First you have to set theswitchportmode to trunk, and then you configure
the encapsulation. The giveaway on this question is the fact that to create a trunk on an interface, you have to be in
interface configuration mode. So C sets the trunk, and D sets the encapsulation.

QUESTION 175
Exhibit



Assuming all hosts and servers are in the same VLAN, which statement is correct about the exhibit?
A.Switch Certkiller 2 is the root bridge.
B.Spanning Tree Protocol is not running.
C.Host Certkiller Dand Server1 are in the same network.
D.No collisions can occur in traffic between Host Certkiller B and host Certkiller C.
E.If Fa0/0 is down on Switch Certkiller 3, Host Certkiller 3 cannot access Server2

Answer: C

QUESTION 176
Which of the following are benefits of VLANs? Choose three
A.They increase the size of collision domains.
B.They allow logical grouping of users by function.
C.They can enhance network security,
D.The increase the size of broadcast domains while decreasing the number of the broadcast domains.
E.The increase the number of broadcast domains while decreasing the size of the broadcast domains.
F.They simplify switch administration.

Answer: B, C, E

Explanation:
There are many motivations for using VLANs, including these:
1.To group users by department, or by groups that work together, instead of by physical location. (B)
2.To reduce overhead by limiting the size of each broadcast domain (E)
3.To enforce better security by keeping sensitive devices on a separate VLAN (C)
4.To separate specialized traffic from mainstream traffic for example, putting IP telephones on a separate VLAN form
user PCs.

QUESTION 177
When a new trunk link is configured on an IOS based switch, which VLANs are allowed over the link?
A.By default, all defined VLANs are allowed on the trunk.
B.Each single VLAN, or VLAN range, must be specified with theswitchportmodecommand.
C.Each single VLAN, or VLAN range, must be specified with thevtpdomaincommand.
D.Each single VLAN, or VLAN range, must be specified with thevlandatabasecommand.

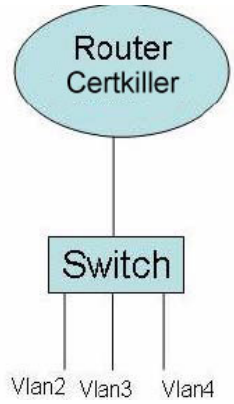
Answer: A

QUESTION 178
An administrator is configuring a Catalyst switch with VLAN information that must be automatically distributed to other Catalyst switches in the network. What conditions must be met inorderfor the VLANs configured on this switch to be automatically configured on the other switches? (Choose three)
A.The switch that will share its VLAN configuration must be in VTP server mode.
B.The switches must be in the same VTP domain.
C.The switch that will share the VLAN information must be configured as root bridge.
D.The switches must be connected over VLAN trunks.
E.The switches must be configured to use the same STP version.
F.The switches must have VTP pruning activated.

Answer: A, B, D

Explanation:
Choice A is correct because for a VTP server, you can create, delete, or modify a VLAN in the local VLAN database.
After you make this change, the VLAN database changes are propagated out to all other switches in server or client mode
in the VTP domain. A server will also accept changes to the VLAN database from other switches in the domain.
Choice B is correct because VTP messages are exchanged between switches within a common VTP domain.
Choice D is correct because VTP sends messages betweentrunkedswitches to maintain VLANs on these switches inorder
to properly trunk.

QUESTION 179
The Certkiller network Topology is displayed in the exhibit below:



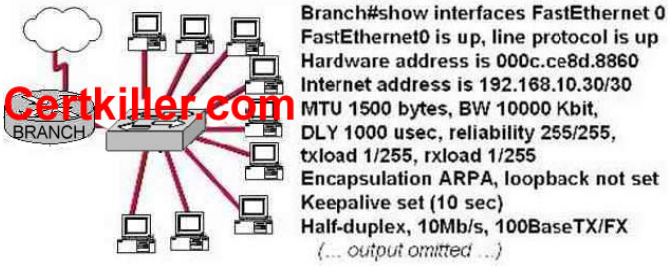
A switch has been configured for three different VLANs: VLAN 2, VLAN 3, and VLAN 4. For the purposes of communication between VLANs a router is to be added.Host from one VLAN should be able to reach the hosts in the other VLANs.Based on this requirement, what type of connection is acceptable between the router and switch?
A.10 Mbps Ethernet
B.56 kbps serial
C.100 Mbps Ethernet

D.1,544 Mbps serial
E.1000 Mbps Ethernet

Answer: C, E

Explanation:
For all hosts to be able to reach each other, interVLAN routing will need to be configured.Inorderto provide InterVLAN routing between the router and the switch, a trunk will need to be set up.This trunk can be either ISL or
802.1Q.On a router, the interface that is to be used as the trunk can be 100 Mbps Ethernet, Gigabit Ethernet, or 10
Gigabit Ethernet.Therefore, only choices C or E are correct.

QUESTION 180
A router has been configured to provide the nine users on the branch office LAN with Internet access, as shown in the diagram below:



It is found that some of the users on the LAN cannot reach the Internet.Other users are not having any problems.Based on the topology and router output shown, which of the following commands should be issued on the router to correct the problem?(Select one).
A.Branch(configif)# no shutdown
B.Branch(configif)# duplex full
C.Branch(configif)# nokeepalive
D.Branch(configif)# ip address 192.168.10.30 255.255.255.240
E.Branch(configif)# bandwidth 100
F.Branch(configif)# encapsulation 802.3

Answer: D

QUESTION 181

A router is configured as shown in the graphic. The switch is connected to the router over a VLAN trunk. The switch has been configured with three VLANs:VLAN1, VLAN2, and VLAN3.In addition, the IP address

of the switch is 192.168.1.2.A host is being added to the switch on VLAN 2.
What is the correct default gateway for this computer?
A.192.168.1.1
B.192.168.1.2
C.192.168.2.1
D.192.168.2.2
E.192.168.3.1
F.192.168.3.2

Answer: C

Explanation:
The default gateway for this host should be the IP address of the local router on that VLAN.
Based on the router configuration, this IP address is 192.168.2.1.In the router configuration, the number that follows the
"encapsulation dot1q" command is the VLAN that is assigned to it.In this case, the PC host belongs to VLAN 2, so the
subinterfacefast Ethernet 0/0.2 is the one that should be chosen.
Incorrect Answers:
A.This is the IP address that hosts in VLAN 1 should use as their default gateway.
B.Even though this is the IP address of the switch itself as stated in the question, it should not be chosen as the default
gateway for any of the hosts in any of the VLANs.This IP address would be used only to administer and make changes
to the switch.
D, F.These are incorrect choices.
E.This is the IP address that hosts in VLAN 3 should use as their default gateway.

QUESTION 182
The LAN needs are expanding at the Certkiller corporate office, which is quickly growing.You are instructed toenlarge the area covered by a single LAN segment on the Certkiller network.
Which of the following are layer 1 devices that you can use? (Choose all that apply.)
A.A switch.
B.A router.
C.A network adapter card.
D.A hub.
E.A repeater.

Answer: D E

Explanation:
A hub simply repeats the electrical signal and makes no attempt to interpret the electrical signal (layer 1) as a LAN
frame (Layer 2). So, a hub actually performs OSI layer 1 functions, repeating an electrical signal, whereas a switch
performs OSI layer 2 functions, actually interpreting Ethernet header information, particularly addresses, to

make
forwarding decisions.Hubs can be used to increase the number of stations that can be supported on a LAN. Because the repeater does not interpret what the bits mean, but does examine and generate electrical signals, a repeater
is considered to operate at Layer 1.Repeaters can be used to physically extend the LAN to greater distances.

QUESTION 183
You are experiencing intermittent issues relating to congestion with your network.What are the possible causes of congestion on a LAN? (Choose all that apply.)
A. A broadcast domain with too many hosts.
B.Full duplex operation.
C.Broadcast storms.
D.Multicasting.
E.Network Segmentation.
F.Low bandwidth.

Answer: A, C, F

Explanation:
A LAN segment with too many hosts can mean that there are a large number of stations contending for bandwidth.It
can also mean an increase in the number of collisions on the segment, which can cause further congestion issues.
Broadcast storms are the result of a large number of broadcasts sent over the LAN.Because each station listens to these
broadcast messages, congestion can occur quickly.Finally, low bandwidth can simply mean that the LAN can not
process all of the LAN traffic that is being sent.This can mean that TCP sessions are retransmitted, which can lead to
additional congestion.
Incorrect Answers:
B.This can alleviate congestion, as data can be sent and received at the same time.In addition, collisions are not possible
in a full duplex LAN.
D.Multicasting can actually alleviate congestion issues, as single streams of information can reach multiple hosts at the
same time, instead of using a series of point to point connections.
E.Segmentation breaks up a large LAN into multiple, smaller LANS.This will mean fewer hosts per broadcast domain.

QUESTION 184
Which type of cable should be used to make a connection between the Fa0/0 port on a router and the Fa0/0 port switch?
A.Rollover cable
B.Console cab le
C.Crossover cable

D.Straightthrough cable
E.Serial cable

Answer: D

Explanation:
The Fast Ethernet ports on a switch and router are both RJ45 ports. It means we have same devices at both ends. To
connect similar devices we use a crossover cable.

QUESTION 185
What components are required todirectlyconnect two PCs so they are able to participate in a simple peertoper network? Choose three
A.Straightthrough cable
B.Compatible network interfaces
C.Networking protocol
D.Hub
E.Crossover cable
F.router

Answer: B, C, E

Explanation:
This cable can be used to directly connect two computers to each other without the use of a hub or switch. Crossover cables are terminated with CAT 5 RJ45 (RJ stands for "Registered Jack") modular plugs. RJ45 plugs are
similar to those you'll see on the end of your telephone cable except they have eight versus four contacts on the end of
the plug. Also, make sure the ends you select are rated for CAT 5 wiring.

QUESTION 186
What kind of cable should be used to establish atrunkedline between two Catalyst 2950 switches?
A.a straightthrough cable
B.an EIA/TIA232 serial cable
C.an auxiliary cable
D.a modem cable
E.a crossover cable

Answer: E

Explanation:
A crossover cable is used to connect to same devices, or devices from the same OSI layer.

QUESTION 187
When a new trunk link is configured on an IOS based switch, which VLANs are allowed over the link?
A. All defined VLANs are allowed on the trunk by default.

B.Each VLAN, or VLAN range, that is specified with theswitchportmodecommand.
C.Each VLAN, or VLAN range, that is specified with thevtpdomaincommand.
D.Each VLAN, or VLAN range, that is specified with thevlandatabasecommand.

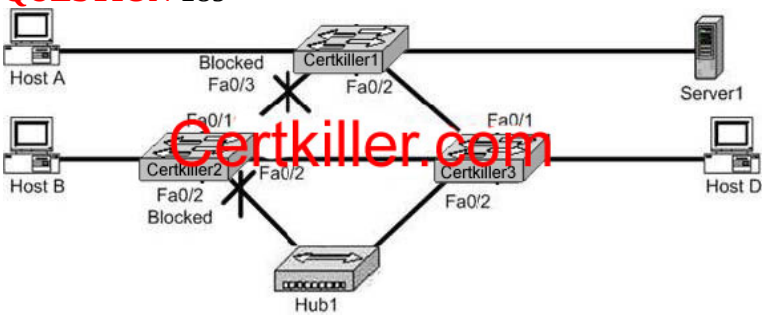
Answer: A

Explanation:
By default a trunk link carries all the VLANs that exist on the switch. This is because all VLANs are active on a trunk
link; and as long as the VLAN is in the switch's local database, traf
can elect to selectively remove and add VLANs from a trunk link.

QUESTION 188
Why would a network administrator configure port security on a switch?
A.To prevent unauthorized Telnet access to a switch port.
B.To limit the number of Layer 2 broadcasts on a particular switch port.
C.To prevent unauthorized hosts from accessing the LAN.
D.To protect the IP and MAC address of the switch and associated ports.
E.To block unauthorized access to the switch management interfaces over common TCP ports.

Answer: C

QUESTION 189



Assuming only one VLAN in the exhibit, which switch is acting as the root bridge?
A. Certkiller 1
B. Certkiller 2
C. Certkiller 3
D.A root bridge is not required in this network.

Answer: C

QUESTION 190
You have a server that's directly connected to a Cisco switch by way of its Fa0/1 port, and you don't want any other MAC addresses from any other servers to access this port. How would you accomplish this? (Select two answer choices)
A.Configure port Fa0/1 to accept connections only from the static IP address of the server.
B.Employ a proprietary connector type on Fa0/1 that is incompatible with other host connectors.
C.Configure the MAC address of the server as a static entry associated with port Fa0/1.

D.Bind the IP address of the server to its MAC address on the switch to prevent other hosts from spoofing the server
IP address.
E.Configure port security on Fa0/1 to reject traffic with a source MAC address other than that of the server.
F.Configure an access list on the switch to deny server traffic from entering any port other than Fa0/1.

Answer: C, E

Explanation: You can configure a MAC address to be associated only with a particular port, with the restriction that
frames destined to that MAC address have to enter through that particular port. So answer choice C is correct.
Another feature you can use is port security.It can preset a limit to the number of sources (including limiting to one) that
can forward frames into the said port switch.When a device with a different MAC address than the one configured for
port security is connected to the switch, the port will administratively shut itself down.The port will only forward traffic
again after an administrator manually enables it.
Reference: CCNA SelfStudy CCNA ICND exam certification Guide (Cisco Press, ISBN 158720083X) Pages 583-585.

QUESTION 191
Which switching mode provides the highest level of integrity and errorfree transport, rather then maximizing speed?
A.802.1q forwarding
B.VTP transparent mode
C.cutthrough
D.storeandforward
E.fragmentfree
F.framefiltering

Answer: D

Explanation:
The Switch receives and stores all bits in the frame before forwarding the frame. This allows switch to check the FCS
before forwarding the frame. The FCS is the frame check sequence, and the information contained in it is used by the
switch to prevent frames with errors from being forwarded through the network.
Incorrect Answers:
E.The Switch performs the address table lookup as soon as the destination address field in the header is received. The
first bits in the frame can be sent out to out port before the final bits in the incoming frame are received. This does not
allow the switch to discard frames that fail the FCS check.
C.Cut through will not perform any error checking.This would be the best choice for ports where speed was

most
important.

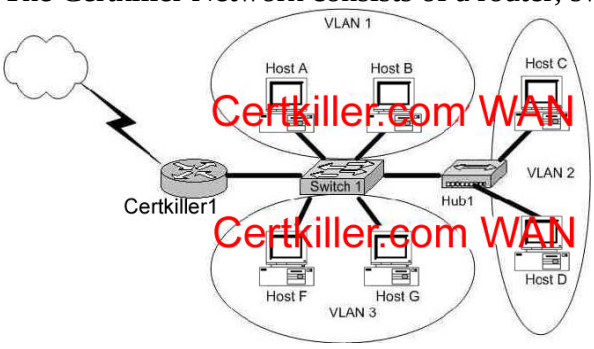
QUESTION 192
A new switch is installed in the Certkiller network.This switch is to be configured so that VLAN information will be automatically distributed to all the other Cisco Catalyst switches in the network.
Which of the conditions below have to be met inorderfor this to occur? (Choose all that apply).

A. The switch that will share the VLAN information must be in the VTP Server mode.
B. The switches must be in the same VTP domain.
C. The switch that will share the VLAN information must be configured as the root bridge.
D. The switches must be configured to use the same VTP version.
E. The switches must be configured to use the same STP version.
F. The switches must be configured to use the same type of ID tagging.
G. The switches must be connected over VLAN trunks.

Answer: A, B, F

Explanation:
For the VLAN information to pass automatically throughout the network, VTP must be set up correctly.Inorderfor VTP
to work, a VTP server is needed, theVLAN'smust be in the same VTP domain, and the encapsulation on each end of
the trunk must both set to either 802.1Q or ISL.
Incorrect Answers:
C.Root bridges and other functions of the Spanning Tree Protocol (STP) have no impact of the VTP configuration.
D, E.There is only one version of VTP and STP.

QUESTION 193
The Certkiller Network consists of a router, switch, and hub as shown below:



In accordance with the above diagram; which of the statements below correctly describe the switch port configuration and the router port configurations? (Select three answer choices)
A.The Certkiller 1 WAN port is configured as a trunking port.
B.The Certkiller 1 port connected to Switch1 is configured usingsubinterfaces.
C.The Certkiller 1 port connected to Switch1 is configured as 10 Mbps.
D.The Switch1 port connected to Certkiller 1 is configured as a trunking port.

E.The Switch1 port connected to Host B is configured as an access port.
F.The switch1 port connected to Hub1 is configured as full duplex.

Answer: B, D, E

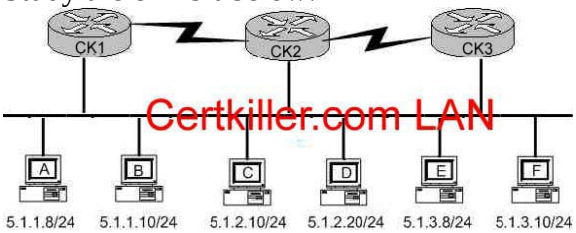
Explanation:
B is correct because the diagram and the function match the description of asubinterface.Subinterfacesare needed
because for intervlancommunication,
routing needs to take place.D is correct because all 3VLAN'saretrunkedto reach
the router.E is correct because access ports are correct in this case.
Incorrect Answers:
A.This is incorrect because trunks only work between switches, and not between a router and a WAN.
C, F.Although these may be true, we are not given enough information in this diagram to confirm it.

QUESTION 194
You are securing a network for Certkiller and want to apply an ACL (access control list) to an interface of a router. Which one of the following commands would you use?
A.permit accesslist 101 out
B.ip accessgroup 101 out
C.apply accesslist 101 out
D.accessclass 101 out
E.ip accesslist e0 out

Answer: B

Explanation:
To enable an ACL on an interface and define the direction of packets to which the ACL is applied, theip accessgroup
command is used. In this example, the access list is applied to packets going out of the interface.Packets coming in on
the interface are not checked against access list 101.

QUESTION 195
Study the exhibit below:



You're the systems administrator at Testing, and you create the following access control lists.
accesslist 101 denytcp5.1.1.10 0.0.0.0 5.1.3.0 0.0.0.255eqtelnet
accesslist 101 permit anyany
You then enter the command "ip accessgroup
101 in" to apply access control list 101 to router CK1 s e0

interface.
Which of the following Telnet sessions will be blocked as a result of your access lists? (Select all that apply)
A.Telnet sessions from host A to host 5.1.1.10
B.Telnet sessions from host A to host 5.1.3.10
C.Telnet sessions from host B to host 5.1.2.10
D.Telnet sessions from host B to host 5.1.3.8
E.Telnet sessions from host C to host 5.1.3.10
F.Telnet sessions from host F to host 5.1.1.10

Answer: D, F

Explanation:
All the telnet sessions from host B to network 5.1.3.0/24 will be denied.In addition, all telnet traffic to host B from the
5.1.3.0/24 network will not work, because the return telnet traffic will be denied.

QUESTION 196
Which of the following statements regarding the use of multiple access lists are valid when configuring a single interface on a Cisco router?
A.Application of up to three access lists per protocol to a single interface.
B.No more than two access lists per interface.
C.One access list may be configured per direction for each Layer 3 protocol configured on an interface.
D.The maximum number allowed varies due to RAM availability in the router.
E.An infinite number of access lists that can be applied to an interface, from most specific to most general.
F.Cisco IOS allows only one access list to an interface.

Answer: C

Explanation:
For each interface, one access list for each protocol (IP, IPX, etc) can be applied in the inbound direction, and one for
the outbound direction.
Incorrect Answers:
B.It is true that no more than two access lists can be applied per interface (inbound and outbound).However, this
applies per layer 3 protocol, so it is possible to configure more than 2 access lists per interface.

QUESTION 197
On the serial interface of a router, an inbound access list is configured to deny all traffic from UDP and TCP ports 21, 23, and 25.All other traffic is permitted.Based on this information, which types of traffic will be allowed through this interface?(Choosethreee)
A.SMTP
B.DNS
C.FTP
D.Telnet
E.HTTP

F.POP3

Answer: B, E, F

Explanation:
Since all traffic that is not using the three ports specified is permitted,the correct answers are B, E and F. (DNS port 53,
HTTP port 80, POP3 port 110).
Incorrect Answers:
A.SMTP uses port 25, which is prohibited.
C.FTP uses port 21, which is prohibited.
D.Telnet uses port 23, which is prohibited.

QUESTION 198
The following access list below was applied outbound on the E0 interface connected to the 192.169.1.8/29 LAN:
accesslist 135 denytcp192.169.1.8 0.0.0.7eq20 any
accesslist 135 denytcp192.169.1.8 0.0.0.7eq21 any
How will the above access lists affect traffic?
A.FTP traffic from 192.169.1.22 will be denied.
B.No traffic, except for FTP traffic will be allowed to exit E0.
C.FTP traffic from 192.169.1.9 to any host will be denied.
D.All traffic exiting E0 will be denied.
E.All FTP traffic to network 192.169.1.9/29 will be denied.

Answer: D
Explanation
When an access list is created, an implicit deny all entry is created at the end.Therefore, each access list created needs
to have at least one permit statement, otherwise it will have the effect of prohibiting all traffic.If the intent in this example
was to block only certain hosts from being able to FTP, then the following line should have been included at the end of
the access list:
Router(config)#accesslist 135 permit ip anyany

QUESTION 199
Study the information and the relevant configuration file below for the Certkiller Branch router.
Hostname: Branch
PH# 1236000, 1236001
SPID1: 32055512360001
SPID2: 32055512360002
isdn switchtype basicni1
username Remote passwordcisco
interface bri0
ip address 10.1.1.1 255.255.255.0

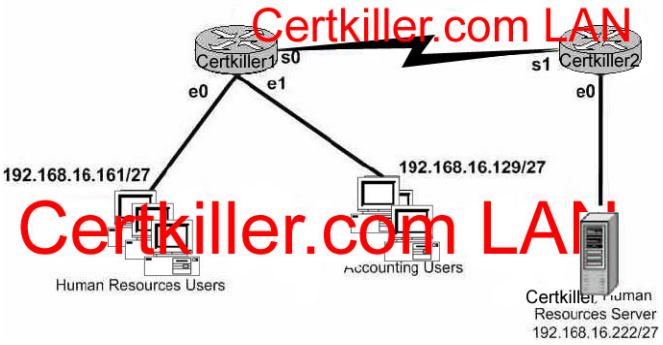
encapsulation ppp
ppp authentication chap
isdn spid1 32055512360001
isdn spid2 32055512360002
dialer map ip 10.1.1.2 name Remote 1238001
dialerlist 1 protocol ip permit
What additional command must be executed on the Branch router before interesting traffic will initiate an ISDN call?

A. (configif)# dialergroup
B. (configif)# dialerlist
C. (configif)# dialer map 1
D. (configif)# dialerroute

Answer: A

Explanation:
The "dialergroup #" command tells the accesslist (used with the dialerlist # command), which interface to activate
when it finds interesting traffic. The numbers at end of each command must match.

QUESTION 200
Study the following network diagram displaying the Certkiller network:



With the goal of preventing the accounting department from gaining access to the HR server, the following access list is created:
accesslist 19 deny 192.168.16.128 0.0.0.31
accesslist 19 permit any
All other traffic is to be permitted through the network.On which interface and in what direction should the access list be applied?

A. Certkiller 1 S0, out.
B. Certkiller 1 E1, in.
C. Certkiller 1 E1, out.
D. Certkiller 2 S1, in.
E. Certkiller 2 E0, out.
F. Certkiller 2 E0, in.

Answer: E

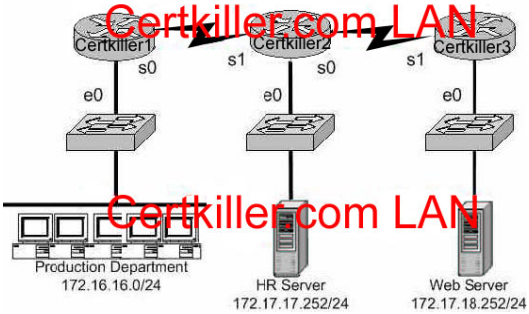
Explanation:
Since this is a standard access list it should be placed near the destination.Standard access lists only match against the
source IP address, so placing this access list anywhere else will prevent traffic from the Accounting department to other
areas of the network.

QUESTION 201
Which of the following commands would successfully implement an access list on a routers virtual terminal line? (Select only one answer choice)
A.RouterTK(configline)# accessclass 10 in
B.RouterTK(configif)# ip accessclass 23 out
C.RouterTK(configline)# accesslist 150 in
D.RouterTK(configif)# ip accesslist 128 out
E.RouterTK(configline)# accessgroup 15 out
F.RouterTK(configif)# ip accessgroup 110 in

Answer: A

Explanation:
To configure VTY you must be in the configline mode.Virtual terminal sessions use VTY lines 04, and VTY access
lists use the accessclass command.
Incorrect Answers:
B.This is placed in the wrong configuration mode
C, D, E, F.The correct syntax for VTY lines is the accessclass command, not the accessgroup or accesslist commands.

QUESTION 202
The Certkiller network is displayed below:



You want to apply an access list to the e0 interface on the Certkiller 1 router, with the goal of halting HTTPS traffic from the Production Department from reaching the HR server via the Certkiller 2 router. Which of the following access lists would you use?

A. Permit ip anyany
Denytcp172.16.16.0 0.0.0.255 172.17.17.252 0.0.0.0eq443

B. Permit ip anyany
Denytcp172.17.17.252 0.0.0.0 172.16.16.0 0.0.0.255eq443
C. Denytcp172.17.17.252 0.0.0.0 172.16.16.0 0.0.0.255eq443
Permit ip anyany
D. Denytcp172.16.16.0 0.0.0.255 172.17.17.252 0.0.0.0eq443
Permit ip anyany

Answer: D

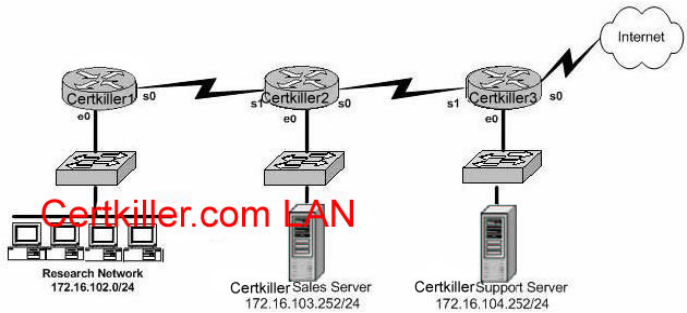
Explanation:
This access problem is very simple, it tells you where to put the access list, all you have to do is to select the right one.
You have to deny all HTTP traffic (TCP port 80) from crossing router 1's e0 while, allowing everything else.This is
accomplished in answer D.
Incorrect Answers:
A.Theorderof the statements are reversed.Since all traffic checked against an access list is performed inorderfrom the
top down, all traffic will match the first statement and be permitted.
B, C.Answers B & C are incorrect because the source addresses are incorrect.

QUESTION 203
What are some general guidelines regarding the placement of access control lists? (Select two answer choices)
A.You should place standard ACLS as close as possible to the source of traffic to be denied.
B.You should place extended ACLS as close as possible to the source of traffic to be denied.
C.You should place standard ACLS as close as possible to the destination of traffic to be denied.
D.You should place extended ACLS should be places as close as possible to the destination of traffic to be denied.

Answer: B, C

Explanation:
The question you have to ask yourself is: Do you want the access list before the routing decision, or after the routing
decision? If an access list is extended, then it would restrict a lot of traffic, so it would be better to have such a list at the
source so it could filter out the traffic before the router has to go through the trouble of sending it off. If an access list is
standard, then it would be more efficiently placed closer to the destination.

QUESTION 204
Study the exhibit below:



You are a network security consultant and you've been contracted to prevent users on the Research Network and general Internet surfers from accessing the Certkiller Support server. However, you must allow access to all the other Certkiller users. So you create an access control list calledresearch_networkwhich contains the following lines:
deny 172.16.102.0 0.0.0.255 172.16.104.255 0.0.0.0
permit 172.16.0.0 0.0.255.255 172.16.104.252 0.0.0.0
Which of the following command sequences can satisfy your goals?
A. Certkiller 1(config)#interface e0
Certkiller 1(configif)# ip accessgroupresearch_ networkin
B. Certkiller 2(config)#interface s1
Certkiller 2(configif)# ip accessgroupresearch_ networkin
C. Certkiller 3(config)#interface s1
Certkiller 3(configif)# ip accessgroupresearch_ networkin
D. Certkiller 1(config)#interface s0
Certkiller 1(configif)# ip accessgroupresearch_ networkout
E. Certkiller 2(config)#interface s0
Certkiller 2(configif)# ip accessgroupresearch_ networkout
F. Certkiller 3(config)#interface e0
Certkiller 3(configif)# ip accessgroupresearch_ networkout

Answer: F

Explanation:
To enable the ACL on an interface and define the direction of packets to which the ACL is applied, the ip accessgroup
command is used.
When referring to a router, these terms have the following meanings.
1.Out - Traf
(on the other side of the router) and the destination is where it's going.
2.In- Traf
and the destination is where it's going (on the other side of the router).
Reference:
CCNA SelfStudy CCNA ICND exam certification Guide (Cisco Press, ISBN 158720083X) Page 433

QUESTION 205
A portion of the Certkiller network is shown below:

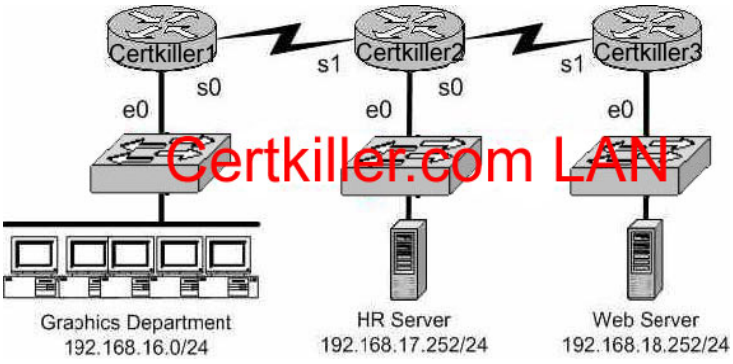
Inorderto prevent the Web Server from receiving telnet traffic from the Graphics Dept. users, an access is created denying this traffic.On which router, which interface and in which direction should you place the access list for maximum efficiency?(Select all that apply)

A. Certkiller 1 Router
B. Certkiller 3 Router
C. serial 0
D. Ethernet 0
E. in
F. out

Answer: A, D, E

Explanation:
For maximum efficiency, the access list should be placed closest to the source of the traffic that you want to deny.The
access list should be an inbound access list, on the e0 interface, on router Certkiller 1.
Incorrect Answers:
B, C, F.Placing the access list anywhere else would mean that the traffic would be permitted through the network, at
least partially, before being dropped.This would result in inefficiency.

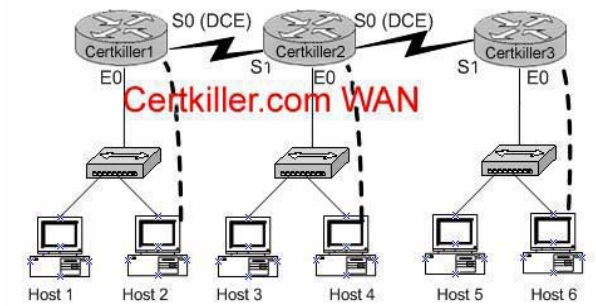
QUESTION 206
The Certkiller network consists of Cisco routers and switches as shown below:



Your goal is to prevent Telnet traffic originating from the Graphics Department to reach the Web server attached to Certkiller 3. However, you want to allow Telnet traffic to other destinations.To accomplish this, you configure the following access control list:
accesslist 101 denytcpanyanyeq23
permit ip anyany
On which router, in what direction, and which interface, should the access list be placed to most efficiently implement the above list?(Select three options)
A. Certkiller 1
B. Certkiller 2
C.serial 0
D.ethernet0
E.in
F.out

Answer: A, D, E

QUESTION 207
You are the administrator of the Certkiller network which is composed of three routers connected together via a WAN as shown in the diagram.Your assignment is to configure and apply an access control list that will block telnet access to the Certkiller 1 router without inhibiting all other traffic. The access list won't need more then 3 statements and it should be applied to the Certkiller 3 router. The three routers are already connected and configured as follows:
*The routers are named: Certkiller 1, Certkiller 2, and Certkiller 3 respectively.
*All three of them are using RIP as the routing protocol.
*The serial 0 interfaces are providing clocking.
*The default subnet mask is used on every interface.
*The IP addresses and passwords are listed below.
Certkiller 1
E0 192.168.1.1
S0 192.168.118.1
Secret password: Certkiller
Certkiller 2
E0 192.168.121.1
S0 192.168.5.1
S1 192.168.118.2
Secret password: Certkiller
Certkiller 3
E0 192.168.134.1
S1 192.168.5.2



To configure the router click on the host icon that is connected to a router by a serial console cable.

Answer:

Explanation:
Certkiller 3>enable
:password
Certkiller 3#show accesslists(** redundant **)
Certkiller 3#config t
.Enter configuration commands, one per line. End with END
Certkiller 3(config)#accesslist 101 denytcpany 192.168.1.1 0.0.0.0eq23
Certkiller 3(config)#accesslist 101 denytcpany 192.168.118.0 0.0.0.0eq23
Certkiller 3(config)#accesslist 101 permit ip anyany
Certkiller 3(config)#interface Ethernet 0
Certkiller 3(configif)# ip accessgroupc 101 in
Certkiller 3(configif)# exit
Certkiller 3(config)#interface serial 0
Certkiller 3(configif)# ip accessgroup 101 in
Certkiller 3(configif)#< CTRLZ
..
Certkiller 3#copy runningconfig startupconfig
You should deny access to telnet to the Certkiller 1 router and the access list should be applied in Certkiller 3 router (if the
wording is correct). The destination addresses of Certkiller 1, namely 192.181.1.1 0.0.0.0 and 192.168.118.0, should
be used.

QUESTION 208
Exhibit

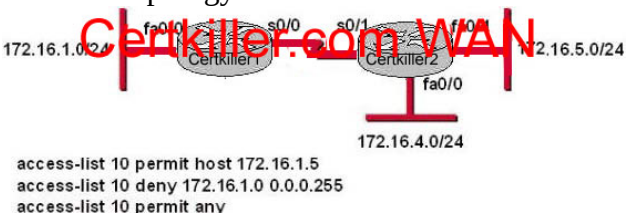
An access list was written with the four statements shown in the graphic. which single access list statement will combine all four of these statements into a single statements that will have exactly the same effect?
A. accesslist 10 permit 172.29.16.0 0.0.0.255
B. accesslist 10 permit 172.29.16.0 0.0.1.255
C. accesslist 10 permit 172.29.16.0 0.0.3.255

D. accesslist 10 permit 172.29.16.0 0.0.15.255
E. accesslist 10 permit 172.29.0.0 0.0.255.255

Answer: C

Explanation:
172.29.16.0 is an aggregate address for those 4. If you would write all these addresses in binaryform and will mark the
equal part, than you will see that it is 172.29.16.0.

QUESTION 209
Network topology exhibit



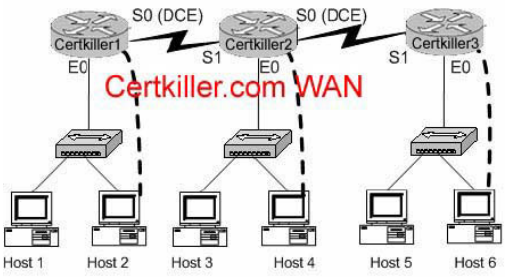
The access list shown should deny all hosts located on network 172.16.1.0, except host 172.16.1.5, from accessing the 172.16.4.0 network. All other networks should be accessible. Which command sequence will correctly apply this access list?
A. Certkiller 1(config)#interface fa0/0 Certkiller 1(configif)# ip accessgroup 10 in
B. Certkiller 1(config)#interface s0/0 Certkiller 1(configif)# ip accessgroup 10 out
C. Certkiller 2(config)#interface fa0/1 Certkiller 2(configif)# ip accessgroup 10 out
D. Certkiller 2(config)#interface fa0/0 Certkiller 2(configif)# ip accessgroup 10 out
E. Certkiller 2(config)#interface s0/1 Certkiller 2(configif)# ip accessgroup 10 out

Answer: D

QUESTION 210
A network administrator wants to add a line to an access list that will block only Telnet access by the hosts on subnet 192.168.1.128/28 to the server at 192.168.1.5. What command should be issued to accomplish this task?
A.accesslist 101 denytcp192.168.1.128 0.0.015 192.168.1.5 0.0.0.0eq23accesslist 101 permit ip anyany
B.accesslist 1 denytcp192.168.1.128 0.0.0.15 host 192.168.1.5eq23accesslist 1 permit ip anyany
C.accesslist 1 denytcp192.168.1.128 0.0.0.255 192.168.1.5 0.0.0.0eq21accesslist 1 permit ip anyany
D.accesslist 101 denytcp192.168.1.128 0.0.0.240 192.168.1.5 0.0.0.0eq23accesslist 101 permit ip anyany
E.accesslist 101 deny ip 192.168.1.128 0.0.0.240 192.158.1.5 0.0.0.0eq23accesslist 101 permit ip anyany
F.accesslist 101 deny ip 192.168.1.128 0.0.0.15 192.168.1.5 0.0.0.0eq23accesslist 101 permit ip anyany

Answer: A

QUESTION 211
Network Topology Exhibit



You work as a network engineer at Certkiller .com. Three Certkiller stores have established network connectivity. The routers are named Certkiller 1, Certkiller 2, and Certkiller 3. The manager at the Certkiller site, Jack King, has decided to deny the ability of anyone from any other network to connect to the Certkiller 3 router with the ping command.Implmentan access list on the Certkiller 3 router to deny this detection but allow all other types of traffic to pass. The access list should contain no more than three statements. The routers have been configured with the following specifications:
*The routers are named Certkiller 1, Certkiller 2, and Certkiller 3.
*RIP is the routing protocol.
*Clocking signal is provided on the serial 0 interfaces.
*The password on each router is " Certkiller ".
*The subnet mask on all interfaces is the default mask.
*The IP addresses are listed in the chart below.
Certkiller 1
E0192.168.49.1
S0192.168.51.1.
Certkiller 2
E0192.168.53.1
S0192.168.55.1
S1192.168.51.2
Certkiller 3
E0192.168.57.1
S1192.168.55.2

Explanation:
Click on Host 6 to connect to and configure Certkiller 3.
configure terminalaccesslist 101 denyicmpany 192.168.57.1 0.0.0.0accesslist 101 denyicmpany 192.168.55.2 0.0.0.0accesslist 101 permit ip anyany
Interface s1Ip accessgroup 101 ininterface ethernet0ip accessgroup 101 outctrl zcopy runningconfig startupconfig 193

QUESTION 212
You are the network administrator at Certkiller . You apply the following access list on the E0 outbound interface connected to the 192.168.1.8/29 LAN:
accesslist 21 denytcp192.168.1.8 0.0.0.7eq20 any
accesslist 21 denytcp192.168.1.8 0.0.0.7eq21 any
What will the effect of this access list be?
A.All traffic will be allowed to out of E0 except FTP traffic.
B.FTP traffic from 192.168.1.22 to any host will be blocked.
C.FTP traffic from 192.168.1.9 to any host will be blocked.

D.All traffic will be prevented from leaving E0.
E.All FTP traffic to network 192.168.1.9/29 from any host will be blocked.

Answer: D

Explanation:
By default access list is having implicit deny statement at the end. In this example there is no permit statement, so it will
deny all traffic exiting E0 Interface.

QUESTION 213
A network administrator has configured access list 172 to prevent Telnet and ICMP traffic from reaching a server with the address if 192.168.13.26. Which command can the administrator issue to verify that the access list is working properly? (Choose three)
A.Router# ping 192.168.13.26
B.Router# debug accesslist 172
C.Router# show open ports 192.168.13.26
D.Router# show accesslist
E.Router# show ip interface

Answer: A, D, E

Explanation:
To display the contents of current access lists, use theshow accesslists command in privileged EXEC mode.
show accesslists[accesslistnumber| accesslistname]
Syntax Descriptionaccesslistnumber
(Optional) Number of the access list to display. The system displays all access lists by default.
accesslistname(Optional) Name of the IP access list to display.
The following is sample output from the show ip interface command:
Router#show ip interfaceEthernet0 is up, line protocol is upInternet address is 192.195.78.24, subnet mask is 255.255.255.240
Broadcast address is 255.255.255.255Address determined by nonvolatile memoryMTU is 1500 bytesHelper address is not set
Secondary address 131.192.115.2, subnet mask 255.255.255.0Directed broadcast forwarding is enabledMulticast groups
joined: 224.0.0.1 224.0.0.2Outgoing access list is not setInboundaccess list is not setoutput omitted
Pingcommand is used to verify connectivity.
So choices A,D and E will be used to verify that the accesslist is working correctly or not.

QUESTION 214
Which table of EIGRP route information are held in RAM and maintained through the use of hello and update packets? Select two.
A.Neighbor table
B.SPF table
C.RTP table
D.Topology table

E.Query table
F.DUAL table

Answer: A, D
They are stored in neighbor table and topology table

QUESTION 215
Which statements are true regarding classless routing protocols? Select two.
A.The use ofdiscontiguoussubnets is not allowed
B.The use of variable length subnet masks is permitted
C.RIP v1 is a classless routing protocol
D.IGRP supports classless routing within the same autonomous system
E.RIP v2 supports classless routing

Answer: B, E

Explanation:
Classless andClassfulRouting Protocols
Some routing protocols must consider the Class A, B, or C network number that a subnet resides in when performing
some of its tasks. Other routing protocols can ignore Class A, B, and C rules altogether. Routing protocols that must
consider class rules are calledclassful routing protocols; those that do not need to consider class rules are called classless
routing protocols.
You can easily remember which routing protocols fall into each category because of one fact:
Classfulrouting protocols do not transmit the mask information along with the subnet number, whereas classless routing
protocols do transmit mask information.
You might recall that routing protocols that support VLSM do so because they send mask information along with the
routing information. Table 73 lists the routing protocols and whether they transmit mast information, support VLSM,
and are classless orclassful.
Table 73Interior IP Routing Protocol: Classless orClass ful?

Routing Protocol	Classless	Sends Mask/Prefix in Routing Updates	VLSM Support	Route Summarization Support
RIP-1	No	Yes	No	No
IGRP	No	No	No	No
RIP-2	Yes	Yes	Yes	Yes
EIRGP	Yes	Yes	Yes	Yes
OSPF	Yes	Yes	Yes	Yes

Reference:CCNA ICND Exam Certification Guide by Wendell Odem, Pg.233

QUESTION 216
Network topology exhibit

Routers Certkiller B and Certkiller C are configured for RIPv2 and have complete connectivity. Router Certkiller A is added to the network. What is the most appropriate Certkiller A configuration for full connectivity?
A. Certkiller A(config)#router rip Certkiller A(config)#network 10.0.0.0 Certkiller A(config)#network 172.16.0.0
Certkiller A(config)#network 192.168.1.0
B. Certkiller A(config)#router rip Certkiller A(config)#network 10.0.0.0
C. Certkiller A(config)#router rip Certkiller A(config)#network 10.0.0.0 Certkiller A(config)#network 172.16.0.0
D. Certkiller A(config)#router rip Certkiller A(config)#network 10.0.0.0 Certkiller A(config)#network 192.168.1.0

Answer: C

Explanation: When configuring RIP you configure only the directly connected networks that are to be advertised via
the RIP routing process are to be configured.
Incorrect Answers:
A.This choice implies that when configuring rip on a router every possible network in the entire system should be
configured. This is not the case.
B. Certkiller 1 requires the 172.16.0.0 network to be configured, not the 192.168.1.0 network.
D.If the 172.16.0.0 network is omitted, then the other routers in the network will not be able to reach the LAN users of
Certkiller Avia RIP.

QUESTION 217
Which WAN protocol is used for outofband
signaling?
A.NCP
B.HDLC
C.LAPB
D.LAPD

Answer: D

QUESTION 218
Network topology Exhibit

You work as a network engineer at Certkiller .com. The topology of the Certkiller .com network is displayed in the exhibit. Host Certkiller 1 has established a connection with the HTTP server attached to interface E0 of the Certkiller B router.
Which of the following statements describe the information contained in protocol data units sentfromhost Certkiller 1 to this server? Select three
A.The destination port number in a segment header will have a value of 80.
B.The destination port number in a segment header will have a unique value greater than or equal to 1023.
C.The destination address of a frame will be the MAC address of the HTTP server interface.
D.The destination address of a frame will be the MAC address of the E0 interface of the Certkiller A router.
E.The destination IP address of a packet will be the IP address of thetheE0 interface of the Certkiller A router.
F.The destination address of a packet will be the IP address of the HTTPServer

Answer: A, D, F

QUESTION 219
Exhibit
ip route 172.16.3.0 255.255.255.0 192.168.2***** (missing)
Which of the following statements are true regarding the command in the exhibit? Select two
A. The command is used to establish a static route.
B.The default administrative distance is used.
C.The command is used to configure the default route.
D.The subnet mask for the source address is 255.255.255.0
E.The command is used to establish a stub network

Answer: A, B

QUESTION 220
With regard to theOSPF Hello protocol, which of the following statements are true?(Choose two.)
A.The OSPF Hello protocol provides dynamic neighbor discovery.
B.The OSPF Hello protocol detects unreachable neighbors in 90 second intervals.
C.The OSPF Hello protocol maintains neighbor relationships.
D.The OSPF Hello protocol negotiates correctness parameters between neighboring interfaces.
E.The OSPF Hello protocol uses timers to elect the router with the fastest links at the designated router.
F.The OSPF Hello protocol broadcast hello packets throughout theinternetworkto discover all routers that are running
OSPF.

Answer: A, C

Explanation:

The Hello Packet
OSPF contains a protocol (the Hello protocol) that is used to establish and maintain relationships between neighboring nodes.These relationships are calledadjacencies. Adjacencies are the basis for the exchange of routing
data in OSPF.
It is through the use of this protocol, and packet type, that an OSPF node discovers the other OSPF nodes in its area.
The Hello protocol uses a specialsubpacketstructure that is appended to the standard 24octet
OSPF header.
Together, these structures form ahello packet.
All routers in an OSPF network must adhere to certain conventions that must be uniform throughout the network. These
conventions include the following:
1.The network mask
2.The interval at which hello packets will be broadcast (thehello interval)
3.The amount of time that must elapse before a non responding router will be declared dead (that is, therouter dead
interval) by the other routers in the network
4. might not operate properly. These parameters are exchanged using hello packets. Together, they comprise the basis for
neighborly communications.They ensure that neighbor relationships (known asadjacencies) are not formed between routers in different subnets and that all members of the network agree on how frequently to stay in contact with each other.
The hello packet also includes a listing of other routers (using their unique router IDs) that the source router has recently
been in contact with.This field, the Neighbor field, facilitates the neighbor discovery process. The hello packet also contains several other fields such as Designated Router and Backup Designated Router.These fields are useful
in maintaining adjacenciesand support the operation of the OSPF network in both periods of stability and convergence.

QUESTION 221
You are a network administrator at Certkiller . Your assistant has been attempting to establish a link between interface s0/0 on router CK1 and interface s0/0 on router CK2 but his attempts have failed. He asks for your assistance.
You issue the show interface s0/0 command on router CK1 and router CK2 . The output from the show interface s0/0 commands is shown in the following exhibit:
CK1 :
Serial0/0 is up, line protocol is down
Hardware is HD64570
Internet address is 210.93.105.1/24
MTU 1500 bytes, BW 1544Kbit, DLY 20000usec,
reliability 255/255,txload1/255,rxload1/255
Encapsulation HDLC, loopback not set
Keepaliveset (10 sec)
CK2 :

Serial0/0 is up, line protocol is down
Hardware is HD64570
Internet address is 210.93.105.2/24
MTU 1500 bytes, BW 1544Kbit, DLY 20000usec,
reliability 255/255,txload1/255,rxload1/255
Encapsulation PPP, loopback not set
Keepaliveset (10 sec)
Based on the exhibit, what is the most likely cause of this problem?
A. The loopback is not set.
B.The serial cable is faulty.
C.The subnet mask is not configured properly.
D.The IP address is not configured properly.
E.The Layer 2 frame types are not compatible.

Answer: E

Explanation:
If you see that the line is up but the protocol is down, as just above, you are experiencing a clocking (keepalive) or
framing problem. Check thekeepaliveson both ends to make sure that they match, that the clock rate is set if needed,
and thatthe encapsulation type is the same on both ends. This up/down status would be considered a Data Link Layer
(Layer 2) problem.In this specific case, one end of the link is set to PPP encapsulation, and the other end is using
HDLC, which is the Cisco proprietary method.Both sides of the connection must be using the same protocol.

QUESTION 222
As what type of physical network is a default Frame Relay WAN classified?
A.pointtopoint
B.broadcast multiaccess
C.nonbroadcastmultipoint
D.nonbroadcastmultiaccess
E.broadcast pointtomultipoint

Answer: D

Explanation:
Frame Relay is a WAN protocol that operates at the physical and data link layers of the Open System Interconnection
(OSI) reference model. This protocol is standardized by both the International Telecommunication Union
Telecommunications Standardization Sector (ITUT) and American National Standards Institute (ANSI).
Frame Relay uses statistical multiplexing techniques to provide network access in a packetswitched network. It is
strictly a Layer 2 protocol suite. Being a Layer 2 protocol enables Frame Relay to offer higher performance WAN

applications (such as LAN interconnection) than the older protocols (such as X.25), which incorporated Layer 3 functions. Given these performance benefits, Frame Relay is a popular WAN medium. However, it has some limitations
with regard to IP multicast. To illustrate,Frame Relay is a Layer 2nonbroadcastmultiaccess(NBMA) network protocol.IP multicast networks are designed to utilize the capabilities of Layer 2 broadcast media such as on a LAN.
Reference:
http:// www.cisco.com/en/US/tech/ CK8 28/ CK3 63/technologies_white_paper09186a00800d6b61.shtml

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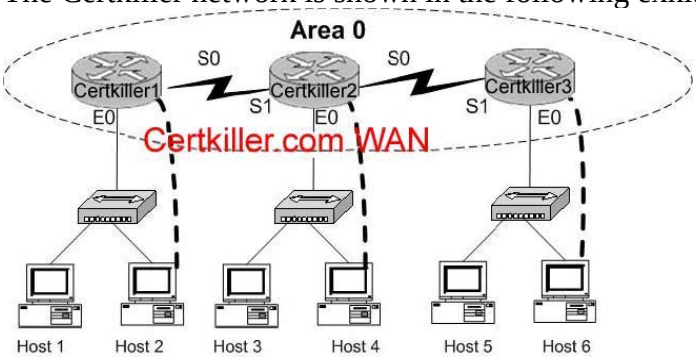
QUESTION 223
You are the network administrator for Certkiller . The network consists of the single Windows 2000 Active Directory domain Certkiller .com. Windows 2000 is used on all servers and client computers in the network. All three routers, named Certkiller 1, Certkiller 2, and Certkiller 3 used by Certkiller are Cisco routers. All have been configured with the Single Area OSPF routing protocol.
The Certkiller network is shown in the following exhibit:



You are required to correct the configuration on the Certkiller 1 router. Certkiller 1 has been installed and configured. However, connectivity is not complete since the routing tables are not updated properly.
On the other hand Certkiller 2 and Certkiller 3 have been working correctly.
Current configuration:
Certkiller 1
E0: 192.168.33.1/24
S0: 192.168.100.5/30
Secret password: Certkiller
Certkiller 2
E0: 192.168.34.1/24
S0: 192.168.100.10/30
S1: 192.168.100.6/30
Secret password: Certkiller
Certkiller 3
E0: 192.168.35.1/24
S1: 192.168.100.9/30
Secret password: Certkiller
Anwer:
<Click on Host 2>
Certkiller 1#config t
Certkiller 1(config)#router ospf 2
Certkiller 1(config)#network 192.168.33.0 0.0.0.255 area 0

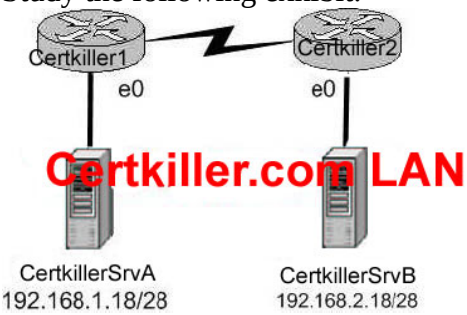
Certkiller 1(config)#network 192.168.100.4 0.0.0.3 area 0
Certkiller 1(config)#<CONTROLZ>
Certkiller 1#

QUESTION 224
Which one of the following answer choices below is true regarding the OSPF topology database?
A.All entries in the topology database will be included on each router.
B.All routers in the same OSPF area will have one topology database.
C.TheDijkstraalgorithm is used in the creation of the topology database.
D.LSA packets are used to update and maintain the topology database.

Answer: D

Explanation:
The LSA (link state advertisement) is used to describe a subnet, network mask, metric, etc. pertaining to the routing
entries.It is what keeps the OSPF topology database updated and maintained.
Incorrect Answers:
A.This is incorrect because every entry in the topology database won't necessarily be included on each router.
B.This is incorrect because each router has its own topology database.
C.This is incorrect because although theDijkstraalgorithm is associated with OSPF, it works by processing the information that's already in the database, not for creating the database.
Reference:CCNA SelfStudy
CCNA ICND Exam Certification Guide (Cisco Press, ISBN 158720083X) Page
192.

QUESTION 225
Study the following exhibit:



In order to control access on the Certkiller network, the following access list is created:
accesslist 101 permittcp192.168.1.16 0.0.0.15 192.168.2 16 0.0.0.15eq23
What would happen if you applied the following ACL to any one of the Certkiller routers in the above exhibit?On what interface and what direction should you apply it?Once applied, what will this access list accomplish? (Select all valid answer choices)
A.Telnet traffic from 192.168.1.16 0.0.0.15 to 168.2.16 0.0.0.15 is allowed.
B.SMTP traffic from 192.168.1.16 0.0.0.15 to 168.2.16 0.0.0.15 is allowed.
C. The ACL is configured to allow traffic from one specific host to another.
D.The ACL should be applied inbound to the e0 interface of Router Certkiller 1.
E.The ACL should be applied outbound to the e0 interface of Router Certkiller 1.

Answer: A, D

Explanation:
This is a two part question.The first part is the type of traffic that will match this specific access list entry.Since telnet
uses TCP port 23, choice B is correct.
Next, to determine which interface and which direction to apply the access list, we see that the source of the traffic is the
192.168.1.16/28 network, while the destination is the 192.168.2.16/28 network.Therefore, only choice D makes sense.
Incorrect Answers:
B.SMTP uses TCP port 25.
C.There is a /15 network mask for both the source and destination in this access list, which translates to a /28 network.
E.This would not be useful if applied to the outbound, as no traffic would match then.Note that if this answer had stated
that the access list be placed on the outbound serial (WAN) interface, then this would have been an acceptable choice.

QUESTION 226
You are a trainee technician at Certkiller . Your instructor shows you the following output:
hostname Certkiller 1hostname Certkiller 2
!!
username Certkiller 2 password kingusername Certkiller 1 password king
!!
interface serial 0interface serial 0
ip address 172.23.56.2 255.255.255.0ip address 172.23.56.3 255.255.255.0
encapsulation pppencapsulation ppp
clockrate 56000ppp authentication chap
She tells you that the output was taken from two directly connected routers. Your instructor wants to know which of the following lines will be displayed when you issue the Router# show interface serial0 command. What will your reply be? (Choose all that apply.)
A.Serial 0 is down, line protocol is down
B.Serial 0 is up, line protocol is up
C. Open: IPCP, CDPCP
D.LCP closed
E.LCP open

Answer: B, E

Explanation:
Even though CHAP is only configured on one end of the link, the physical serial interfaces will be up, line protocol up
since the encapsulations match with PPP on each end, and the clock rate is set on the DCE end.LCP will be

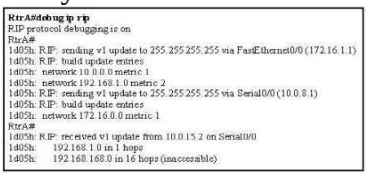
open, since
the username and password statements are correctly configured for the PPP CHAP authentication.

QUESTION 227
How would you configure a router in a Frame Relay network to prevent issues such as split horizons hampering routing updates?
A.Configure a separate subinterface for each PVC with a unique DLCI and subnet assigned to the subinterface.
B.Configure many subinterfaces on the same subnet.
C.Configure each Frame Relay circuit as a pointtopoint line.
D.Configure only one subinterface to establish multiple PVC connections.
E.Configure a single subinterface connect to multiple remote router interfaces.

Answer: A

Explanation:
The best solution is to configuresubinterfacesfor each virtual connection, because the individual virtual circuits can be
maintained and split horizon can remain on.Routing update information that is received through onesubinterfacecan be
propagated to othersubinterfaces, because each subinterface
is treated as a completely separate interface. Configuring
Frame Relaysubinterfacesensures that a single physical interface is treated as multiple virtual interfaces. This capability
allows you to overcome split horizon rules so packets received on one virtual interface can be forwarded to another
virtual interface, even if they are configured on the same physical interface.

QUESTION 228
Study the Exhibit below carefully:



Based on the information provided, which of the following are true? (Select two answer choices)
A.This router was configure with the commands:
RtrA(config)#router rip
RtrA(configrouter)# network 172.16.0.0
RtrA(configrouter)# network 10.0.0.0
B.This router was configured with the commands:
RtrA(config)#router rip
RtrA(configrouter)# network 192.168.1.0
RtrA(configrouter)# network 10.0.0.0
RtrA(configrouter)# network 192.168.168.0
C.This router was configured with the commands:
RtrA(config)#router rip
RtrA(configrouter)# version 2

RtrA(configrouter)# network 172.16.0.0
RtrA(configrouter)# network 10.0.0.0
D.Splithorizon was disabled on this router.
E.Network 192.168.168.0 will be displayed in the routing table.
F.Network 10.0.0.0 will be displayed in the routing table.

Answer: A, F
Explanation
Based on the information provided, this RIP network is routing the 192.168.1.0, 172.16.0.0, and 10.0.0.0 networks.
However, the 10.0.0.0 and 172.16.0.0 networks show that they are being advertised to the other router with a metric
of 1, meaning that it is directly connected.Therefore, choice A is correct.Also, the 192.168.1.0 network was received
on the serial 0/0 interface with a valid metric of 1 so this route will indeed be installed into the routing table.
Incorrect Answers:
B.The 192.168.0.0 networks are being received from other routers, so this particular one will not have this locally
configured.
C.The output shows that RIP version 1 is being used, not RIP version 2.
D.There is no information to support this.
E.This network shows a metric of 16, which is the maximum number of hops for RIP so it is deemed inaccessible.

QUESTION 229
You are a network technician at Certkiller , Inc. You need to configure a router to run OSPF and to add network 192.168.10.0/24 to OSPF area 0.
Which of the following commands do you need to achieve this? (Choose all that apply.)
A.Router(configrouter)# network 192.168.10.0 0.0.0.255 0
B.Router(configrouter)# network 192.168.10.0 0.0.0.255 area 0
C.Router(configrouter)# network 192.168.10.0 255.255.255.0 area 0
D.Router(config)# router ospf 0
E.Router(config)#router ospf 1
F.Router(config)# router ospf area 0

Answer: B, E

Explanation:
B.The network command specifies the IP address (192.168.10.0) followed by the wildcard mask (not the subnet mask), and the area that is to be associated with the OSPF address range (in this case, area 0). The wildcard mask
indicates in binary how much of the IP address much be matched with 0s indicating that the bits must match and 1
indicating that they may vary. Thus 0.0.0.255 or 00000000.00000000.00000000.11111111 indicates that any bit in
the last octet can vary while all bits in the first 3 octets must match the network address (in other words,

192.168.10.xx)
E.The router ospf command enables OSPF routing and enters router configuration mode. This command takes a <processid> argument which identifies the OSPF process.
Incorrect Answers:
A.This command is correct, except for the fact that the keyword "area" is missing and needs to be inserted.
C.For OSPF, the inverse mask must be used, not the regular subnet mask.
D. OSPF can not use process ID 0, and the goal of this question is to put a specific network in area 0, not the entire
routing process.

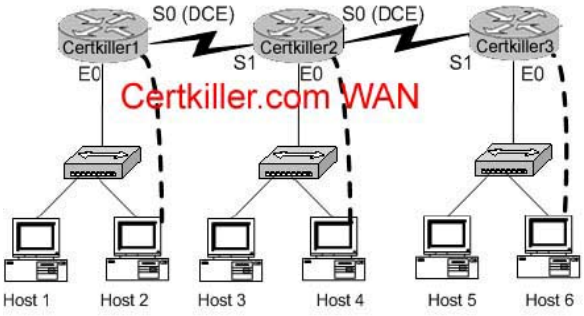
QUESTION 230
Which of the following statements describes the rule of split horizon?
A.Only routers can split boundaries (horizons) between concentric networks.
B.Each AS must keep routing tables converged to prevent dead routes from being advertised across boundaries.
C.Networks can only remain fully converged if all information is sent out all active interfaces.
D.Information about a route should not be sent back in the direction from which the original update came.
E.Distance vector protocols need fall back routers that are responsible for momentary loops.

Answer: D

Explanation:
Simply said, the rule of split horizons says that routing information should not be sent out the same interface that it was
learned on.This is used to prevent routing loops in the network, but it can also cause problems on NBMA networks,
such as a hub and spoke frame relay network.Splithorizons include two related concepts that affect what routes are
included in a routing update:
An update does not include the subnet of the interface out which the update is sent
All routes with outgoing interface of interface x are not included in updates sent out that same interface x.
Incorrect Answers
A.There is no such requirement
C.This is not a feature of split horizon
B.This is not a related feature for split horizon
E.Distance vector protocols updates routing table at regular intervals instead of Topology changes
Reference:Wendell Odom. CISCO CCNA Certification Guide (2000 Cisco Press) Page 369.

QUESTION 231
You are a network technician at Certkiller , Inc. You are configuring the routing protocol on the Certkiller 3 router to allow a host on the LAN to communicate with a host on the Certkiller 2 router, where the Certkiller 3 router is an addition to and already configured network that includes Certkiller 1 and Certkiller 2, each with one LAN respectively.
The routers have been configures as follows:
*The routers are named Certkiller 1, Certkiller 2, and Certkiller 3.
*RIP is the routing protocol
* The clocking is provided on the serial 0 interfaces.

*The secret password on the Certkiller 3 router is " Certkiller "
*The subnet masks on all interfaces is the default mask.
*The IP addresses are listed in the chart
Certkiller 1
E0192.168.149.1
S0192.168.179.1
Certkiller 2
E0192.164.155.1
S0192.168.111.1
S1192.168.179.2
Certkiller 3
E0 192.168.165.1
S1 192.111.2

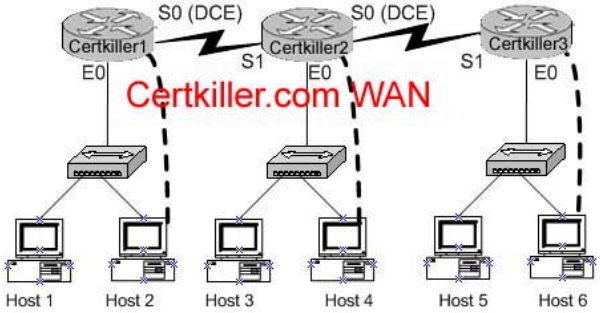


To configure the router click on a host icon that is connected to a router by a serial cable.

Answer:
Certkiller 3>enable
Password:
Certkiller 3#config t
Certkiller 3(config)#router rip
Certkiller 3(configrouter)# network 192.168.165.0
Certkiller 3(configrouter)# network 192.168.111.0
Certkiller 3(config)#CtrlZ
Output omitted
Certkiller 3#copy runningconfig startupconfig
Output omitted
[OK]
Certkiller 3#_

QUESTION 232
Three Certkiller stores have decided to establish network connectivity. The stores have contracted a local non Cisco certified technician. Not surprisingly, he failed to complete the job. No network connectivity has been established between the routers. The routers are named Certkiller 1, Certkiller 2, and Certkiller 3. Certkiller has decided to use more professional assistance and has hired you to fix the problems. Your task is to identify the fault(s), and make the necessary change(s) to establish connectivity. The routers have been configured with the following specifications:
*The routers are named Certkiller 1, Certkiller 2, and Certkiller 3.

*RIP is the routing protocol.
*Clocking signal is provided on the serial 0 interfaces.
*The password on each router is " Certkiller ".
*The subnet mask on all interfaces is the default mask.
*The IP addresses are listed in the chart below.
Certkiller 1
E0192.168.127.1
S0192.168.131.1.
Certkiller 2
E0192.168.135.1
S0192.168.133.1
S1192.168.131.1
Certkiller 3
E0192.168.137.1
S1192.168.133.2



To configure the router click on the host icon that is connected to a router by a serial console cable.

Answer:
Click on Host 2:
Router Certkiller 1:
Certkiller 1>enable
Password: Certkiller
Certkiller 1 #config terminal
Certkiller 1 (config) #interfaceethernet0
Certkiller 1 (configif) #ip address192.168.27.1 255.255.255.0 Certkiller 1 (configif) #no shutdown Certkiller 1 (configif) #exit Certkiller 1 (config) #interface serial 0 Certkiller 1 (configif)# ip address 192.168.31.1 255.255.255.0
Certkiller 3 (configif) #clock rate 64000 Certkiller 1 (configif)# no shutdown Certkiller 1 (configif)# exit Certkiller 1
(config) #router rip Certkiller 1 (configrouter) #network 192.168.27.0 Certkiller 1 (configrouter) #network 192.16831.0 Certkiller 1 (configrouter) #CtrlZ Certkiller 1 #copy runningconfigstartupconfig
Click on Host 4
Router Certkiller 2:
Certkiller 2> enable
Password: Certkiller Certkiller 2 #config t Certkiller 2 (config) #interfaceethernet0 Certkiller 2 (configif) #ip address192.168.135.1 255.255.255.0 Certkiller 2 (configif) #no shutdown Certkiller 2 (configif) #exit Certkiller 2
(config) #interface serial 0 Certkiller 2 (configif) #ip address 192.168.133.1 255.255.255.0

Certkiller 2 (configif) #clock rate 64000 Certkiller 2 (configif) #no shutdown Certkiller 2 (configif) #exit Certkiller 2
(config) #interface serial 1 Certkiller 2 (configif)# ip address 192.168.131.2 255.255.255.0 Certkiller 2 (configif) #no
shutdown Certkiller 2 (configif) #exit Certkiller 2 (config) #router rip Certkiller 2 (configrouter) #network 192.168.135.0 Certkiller 2 (configrouter) #network 192.168.133.0 Certkiller 2 (configrouter) #network 192.168.131.0
Certkiller 2 (configrouter) #CtrlZ Certkiller 2 #copy runningconfig startupconfig
Router Certkiller 3:
Click on Host6
Certkiller 3>enable
Password: Certkiller Certkiller 3 #config t Certkiller 3 (config) #interfaceethernet0 Certkiller 3 (configif) #ip address192.168.137.1 255.255.255.0 Certkiller 3 (configif) #no shutdown Certkiller 3 (configif) #exit Certkiller 3
(config) #interfaceserial 1 Certkiller 3 (configif) #ip address 192.168.133.2255.255.255.0
Certkiller 3 (configif) #no shutdown Certkiller 3 (configif) #exit Certkiller 3 (config) #router rip Certkiller 3 (configrouter)
#network 192.168.133.0 Certkiller 3 (configrouter) #network 192.168.137.0 Certkiller 3 (configrouter) #CtrlZ Certkiller 3 #copy runningconfigstartupconfig
Reference:
CCNA SelfStudy CCNA ICND exam certification Guide (Cisco Press, ISBN 158720083X)

QUESTION 233
The Certkiller network has a conferencing system that uses Voice over IP. The system uses UDPdatagrams to send the voice data between communicating hosts. Your newly appointed Certkiller trainee wants to know what will happen if thedatagramsout of sequence arrive at their destination when the network becomes busy. What will your reply be?
A.UDP will send an ICMP Information Request to the source host.
B.UDP will pass the information in thedatagramsup to the next OSI layer in theorderthat they arrive.
C.UDP will drop thedatagrams.
D.UDP will use the sequence numbers in the datagram headers to reassemble the data in the correctorder.
E.UDP will not acknowledge thedatagramsand wait for a retransmission of thedatagrams.

Answer: C

Explanation:
VOIP systems utilize UDP because it is faster and uses less overhead.In addition, the reliable transport mechanism used
in TCP is useless to VOIP because if a packet gets dropped and needs to be resent, it will be already too late.
UDP provides a service for applications to exchange messages. Unlike TCP, UDP is connectionless and provides no
reliability, no windowing, and no reordering of the received data. However, UDP provides some functions of TCP ,
such as data transfer, segmentation, and multiplexing using port numbers, and it does so with fewer bytes of overhead
and with less processing required.UDP data transfer differs from TCP data transfer in that no reordering or

recovery is
accomplished.Applications that use UDP are tolerant of lost data, or they have some application mechanism to recover
data loss.
Reference:CCNA SelfStudy CCNA INTRO exam certification Guide (Ciscopress, ISBN 1587200945) Page 161.

QUESTION 234
You are a network technician at Certkiller , Inc. You are troubleshooting a connectivity problem. You issue the ping commandduring a router console session. Your trainee wants to know what the ping command use to test connectivity between the two devices.
What would your reply be?
A. ICMP echo request
B.Information interrupt request
C.Timestamp reply
D.Source quench

Answer: A

Explanation:
The ping command sends an ICMP echo request packet to the stated destination address. The TCP/IP software at the
destination then replies to the ping echo request packet with a similar packet, called ICMP echo reply.
Reference:
CCNA SelfStudy CCNA ICND exam certification Guide (Cisco Press, ISBN 158720083X) Page 146

QUESTION 235
You are a network technician at Certkiller , Inc. You are required to troubleshoot a network connectivity problem. While busy, you observe steady link lights on both the workstation NIC and the switch port to which the workstation is connected. However, when the ping command is issued from the workstation, the output message "Request timed out" is displayed.
At which layer of the OSI model does this problem reside?
A.The data link layer
B.The application layer
C.The access layer
D.The session layer
E.The network layer

Answer: E

Explanation:
TCP/IP includes ICMP, a protocol designed to help manage and control the operation of a TCP/IP network. The ICMP protocol provides a wide variety of information about a network's health and operational status. Control message
is the most descriptive part of a name. ICMP helps control and manage IP's work and therefore is considered part of

TCP/IP's network layer.
Reference:
CCNA SelfStudy
CCNA ICND exam certification Guide (Cisco Press, ISBN 158720083X) page 277

QUESTION 236
Which layer of the OSI reference model is responsible for ensuring reliable endtoend delivery of data?
A.Application
B.Presentation
C.Session
D.Transport
E.Network
F.DataLink

Answer: E

Explanation:
Network Layer
This layer defines endtoend delivery of packets. To accomplish this, the network layer defines logical addressing so
that any endpoint can be identified.
Reference:
CCNA SelfStudy CCNA INTRO exam certification Guide (Cisco Press, ISBN 1587200945) Page 33

QUESTION 237
Your Certkiller trainee Jack wants to know what three TCP/IP Application layer protocols are.
What would you tell her? (Choose three.)
A.ARP
B.HTTPS
C.SMTP
D.CDP
E.TFTP
F.ICMP

Answer: B, C, E
Reference:
CCNA SelfStudy CCNA ICND exam certification Guide (Cisco Press, ISBN 158720083X) Page 35

QUESTION 238
NO: 6
In data encapsulation, which of the following is the correct order of protocol data units?
A.Data, Frame, Packet, Segment, Bit
B.Data, Frame, Segment, Packet, Bit
C.Data, Packet, Frame, Segment, Bit
D.Data, Packet, Segment, Frame, Bit

E.Data, Segment, Frame, Packet, Bit
F.Data, Segment, Packet, Frame, Bit

Answer: F

Explanation:
Data Encapsulation
Step 1 Create the application data and headers
*Data
Step 2 Package the data for transport
*Segment
Step 3 Add the destination and source network layer addresses to the data
*Packet
Step 4 Add the destination and source data link layer addresses to the data
*Frame
Step 5 Transmit the bits
*Bit
Reference:
CCNA SelfStudy CCNA INTRO exam certification Guide (Cisco Press, ISBN 1587200945) Page 29

QUESTION 239
You work as a network administrator at Certkiller . You install a new host on the Certkiller network. You want to verify the configuration of the new host by establishing an FTP connection to a remote server. You Certkiller trainee wants to know what the highest layer of the protocol stack is that you are using for this operation.
What would your reply be?
A. Application
B.Presentation
C.Session
D.Transport
E.Internet
F.Data Link
G.Physical

Answer: A

Explanation:
Layer NameExamples
Layer 7 is the application layer, which is the highest layer in the OSI model.This layer describes the use of end user
applications, such as opening movie files (avi, mpeg, etc) used Microsoft Office applications, using WWW browsers,
using Telnet, and using FTP.

QUESTION 240
There are 2 switches in the Certkiller LAN, with no routers.Ports 1, 2 & 3 are assigned to VLAN 1 in switch 1

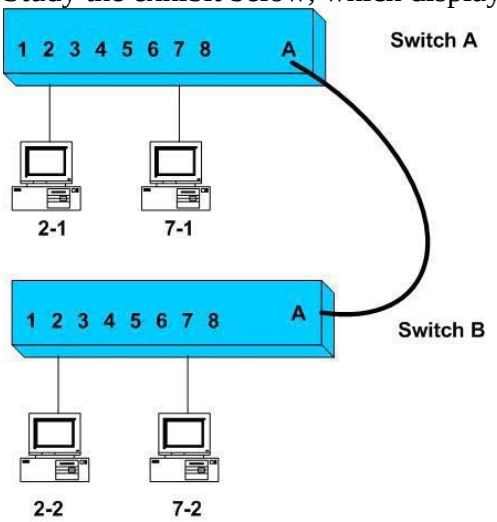
and 2 and ports 4, 5 & 6 are assigned to VLAN 2 in both switches.These two switches are connected together via atrunkedlink. Which of the conditions below would verify trunk and VLAN operation? (Select all valid answers)

A. Host 1 on VLAN 1 can ping Host 2 on VLAN 1
B. Host 1 on VLAN 1 can ping Host 4 on VLAN 2
C. Host 1 on VLAN 1 can not ping Host 2 on VLAN 1
D. Host 4 on VLAN 2 can not ping Host 1 on VLAN 1
E. Host 4 on VLAN 2 can ping Host 2 on VLAN 2

Answer: A, D, E

Explanation:
If there is no router present, only hosts in the same VLAN will be able to ping each other.Inorderfor any host on one
VLAN to communicate with a host on another VLAN, the traffic must pass through a router.Host within the same
VLAN will be able to ping each other, even though they reside on different switches, as long as the switches have a
trunk connection configured between them.

QUESTION 241
Study the exhibit below, which displays 2 Certkiller switches in the LAN:



You are a network analyst on a network which contains twoVLAN'sas portrayed in the exhibit.
*Ports 1 through 4 on each switch are assigned to VLAN1
*Ports 5 through 8 on each switch are assigned to VLAN2.
*An ISL trunk link connects the two switches.
Based on this information, which of the following will be true?(Select all that apply)
A. Host 21 can ping Host 22
B.Host 21 can ping Host 72
C.Host 21 can not ping Host 22
D.Host 71 can not ping Host 22
E.Host 71 can ping Host 72

Answer: A, D, E.

Explanation:
Without any routing taking place, hosts in one VLAN will only be able to reach other hosts in the same VLAN.
A.Host 21 and Host 22 are both in VLAN1 and a ping should be successful.
D.Host 71 is in VLAN3 while Host 22 is in VLAN1. A ping between those hosts should fail.
E.Host 71 and Host 72 are both in VLAN1 and a ping should be successful.
Incorrect Answers:
B.Host 21 and Host 72 are in different VLANs and a ping should fail.
C.Host 21 and Host 22 are both in VLAN1 and a ping should be successful.
Reference: SteveMcQuerry.Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 184 198 and 124.

QUESTION 242
You are a senior network administrator at Certkiller and your trusty junior administrator tells you that he failed his task of adding VLAN 50 to a Catalyst switch in the network.
You enter in the 'showvtpstatus' command and get this output:
CK2 # showvtpstatus
VTP Version:2
Configuration Revision:7
Maximum VLANs supported local:68
Number of existing VLANs:8
VTP Operating Mode:Client
VTP Domain Name:corp
VTP Pruning Mode:Disabled
VTP V2 Mode:Disabled
VTP Traps Generation:Disabled
MD5 digest:0x22 0xF3 0x1A
Configuration last modified by 172.18.22.15 at528031t: 53:20
What commands must be issued on this switch to add VLAN 50 to the database? (Choose two.)
A. CK2 (configif)# switchportaccessvlan50
B. CK2 (vlan)#vtpserver
C. CK2 (config)# configrevision
D. CK2 (config)#vlan50 name Tech
E. CK2 (vlan)#vlan50
F. CK2 (vlan)# switchport trunk vlan 50

Answer: B, E

Explanation:
VTP operates in one of three modes:
*Server mode
*Client mode
*Transparent mode
For VTP to exchange information, some switches act as servers, and some act as clients.VTP servers can create,

modify, and delete VLANs and other conf
propagated to the VTP clients and servers in that same domain. VTP servers save VLAN configurations in the Catalyst
NVRAM, whereas in clients, the VLAN configuration is not stored at all. A VTP client cannot create, change or delete
VLANs, nor can it save VLAN configurations in nonvolatile memory.

switchportmode {access | dynamic {auto | esirable} | trunk}	Interface subcommand that configured the Interface for trunking.

QUESTION 243
Study the Exhibit below carefully:
London#showvtp
VTP Version:2
Configuration Revision:0
Maximum VLANs supported locally:64
Number of existing VLANs:5
VTP Operating Mode:Client
VTP Domain Name:London
VTP Pruning Mode:Disabled
VTP V2 Mode:Disabled
VTP Traps Generation:Disabled
Based on the information given above, what is the VTP function of this particular switch?
A.Learn and save VTP configuration in the running configuration.
B.Create and change VLANs.
C.Forwards information about VTP configuration.
D.VTP is disabled on this device.
E.VTP is not saved to NVRAM.

Answer: C

Explanation:
From the output this switch is operating merely as VTP client, so it basically does as the VTP server says, and passes
on information about VTP configuration to the next switch in line.
Incorrect Answers:
A.This is incorrect because the function is redundant.
B.This incorrect because the switch must be in server or transparent mode to create and change VLANs.
D.This is incorrect because if VTP would be disabled, it wouldn't appear on the command output.
E.If this were true, the VTP configuration information would not be displayed after being powered on.

QUESTION 244
Which of the following IOS commands could you use to troubleshoot a router connectivity problem on an IP network? (Select all valid answers)
A.show ip route
B.ipconfig
C.tracert

D.show interfaces
E.traceroute
F.ping
G.All of the above

Answer: A, D, E, F

Explanation:
A.The show ip route command displays the IP route table.
D.The show interfacesEXEC command to display statistics for all interfaces configured on the router or access server.
E.Tracerouteis a valid router command, used to trace the path to a destination, and provide the latency associated with
each hop.
F. The ping command tests connectivity to a remote node.
Incorrect Answers:
B, C.These are commands used on PC hosts.They are invalid router commands.

QUESTION 245
A new Catalyst switch is connected to an existing switch using a crossover cable.As a result of this, what would the switch port link lights display?
A.The switch port link lights will be off on both switches indicating the ports are not connected.
B.The switch port link light will be off on one switch indicating that STP has disabled the port.
C.The switch port link lights will flash amber indicating an error.
D.The switch port link lights will be green indicating normal operation.

Answer: D

Explanation:
To connect one Cisco switch to another Cisco switch, the crossover cable is the proper cable to use. So if you were to
use one, the lights would be green indicating that all is well. If you were to connect a switch to a router, a server, or a
PC host then a straight through cable should be used.
*Connect a Category 3, 4, or 5crossovercable to any 10/100 port on the switch and to a 10BaseT port on the target hub or switch.
*Connect a Category 5crossovercable to any 10/100 port on the switch and to a 100BaseTX port on the target hub or switch.
Reference:http://www.cisco.com/en/US/products/hw/switches/ps211/products_quick_start09186a00800ea827.html

---

QUESTION 246
What command verifies connectivity between two hosts by sending and receiving ICMP echo messages?

A. ping
B.tracert

C.netstat
D. showcdpneighbors detail
E. show ip route
F.traceroute

Answer: A

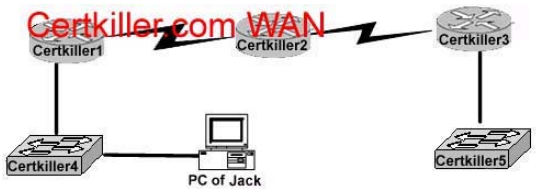
Explanation:
Packet Internet Groper (PING) uses ICMP echo requests and replies to verify network connectivity.It is most commonly used to verify connectivity to another device and to monitor the operational status of a device.

QUESTION 247
You are working as a network technician at Certkiller University, when you get a call from the Engineering Faculty. They're complaining that they're receiving obsolete information from the Business Faculty's network traffic broadcasts.
What can you do to contain the Business Faculty's broadcast while still keeping it connected to the internet and the enterprise services of the University?(Select all valid answer choices)
A.Use half and fullduplex
Ethernet on the Engineering Department LAN
B.Establish a VTP domain to minimize the obsolete traffic
C.Change the switch IP address of the switch
D.Create separate VLANs and subnets for the two departments and route between the two
E.Provide greater bandwidth to the Engineering Department LAN
F.Place the business department on a separate subnet and route between networks

Answer: D, F

Explanation:
Inorderto prevent the broadcast and link level multicast traffic separated between the departments, they need to be
isolated at layer two.This can be accomplished in two ways.The first is to create separate VLANs and place each
department into a different one.The second method would be to separate the two departments into two completely
different networks, and route between them.
Incorrect Answers:
A.Mixing the use of half and full duplex will make no difference to the number of broadcasts sent.
B.Trunking is only useful in networks that already contain VLANs.
C.This will make no difference, as all users will still be contained within the same IP subnet.
E.The amount of bandwidth involved will not have any impact on the amount of broadcasts that are sent and received.

QUESTION 248
Study the following exhibit:



You are unable to log into the Certkiller 5 switch, as you have forgotten its IP address and you are too far away to log into it via the console port.You are unsure what the IP address of Certkiller 5 is and need to get this information.
How can you find the IP address of switch Certkiller 5?
A.Issue theshow ip routecommand on Router Certkiller 1.
B.Issue theshowcdpneighborsdetailcommand on Router Certkiller 2.
C.Issue theshowarpcommand on Router Certkiller 3.
D.Issue theshowcdpneighbors detailcommand on Router Certkiller 3.
E.Issue theshowarpcommand on Router Certkiller 1.
F.Issue theshow ip routecommand on Router Certkiller 2.

Answer: D

Explanation:
To display detailed information about neighboring devices discovered using Cisco Discovery Protocol (CDP), use the
showcdpneighborsprivileged EXEC command.
Detail (Optional) Displays detailed information about a neighbor (or neighbors) including network address, enabled
protocols, hold time, and software version.

QUESTION 249
Study the exhibit below:

London# show vtp status		Madrid# show vtp status	
VTP Version	:2	VTP Version	:2
Configuration Revision	:0	Configuration Revision	:0
Maximum VLANs supported locally	:64	Maximum VLANs supported locally	:64
Number of existing VLANs	:5	Number of existing VLANs	:5
VTP Operating Mode	: Server	VTP Operating Mode	: Server
VTP Domain Name	: London	VTP Domain Name	: Madrid
VTP Pruning Mode	: Disabled	VTP Pruning Mode	: Disable
VTP V2 Mode	: Disabled	VTP V2 Mode	: Disable
VTP Traps Generation	: Disabled	VTP Traps Generation	: Disable

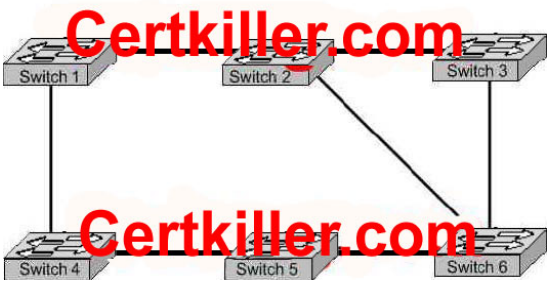
TheLondonswitch andMadridswitch have both been configured for VTP, but they aren't sharing any VTP messages. Based on the above output, what do you suspect is the cause of this problem?
A.VTP V2 mode is not in operation.
B.VTP pruning mode is disabled.
C.The VTP domain name is configured incorrectly.
D.The VTP operating mode is not configured.
E.The VTP version is configured incorrectly.

Answer: C

Explanation:
Inorderfor VTP information to be shared between switches, they must be in the same VTP domain.Based on the

output
above, the switches appear to belong in completely separate domains, as their VTP domains are different, and they are
both VTP servers.

QUESTION 250
The Certkiller switched LAN is displayed in the exhibit below:



The switches are connected together as shown above, crating a loop.What is the type of loop that is caused in this setup, and what is the name of the protocol that prevents this from becoming a problem?
A.routing loops, hold down timers
B.switching loops, split horizon
C.routing loops, split horizon
D.switching loops, VTP
E.routing loops, STP
F.switching loops, STP

Answer: F

Explanation:
The SpanningTree
Protocol (STP) prevents loops from being formed when switches or bridges are interconnected via multiple paths. SpanningTree Protocol implements the 802.1D IEEE algorithm by exchanging BPDU messages with
other switches to detect loops, and then removes the loop by shutting down selected bridge interfaces. This algorithm
guarantees that there is one and only one active path between two network devices.
Incorrect Answers:
A, C, E.Switches operate at layer two, and only bridging or switching loops can be created.
B. Split Horizons are used to prevent routing loops in distance vector protocols.
D.VTP is the VLAN Trunking Protocol, which alone has no mechanism to prevent loops in the network from becoming
an issue.The VTP process relies on the STP for loop detection and prevention.

QUESTION 251
After connecting a PC to an available port on a switch, you find that the PC can not access any of the resources on the LAN.No other PC's connected to the switch appear to be having any issues.What is the most likely cause for this problem?

A. The router lacks a routing table entry for the new host

B. The host switch port is assigned to the incorrect VLAN
C. The host MAC address is incorrectly configured
D. A STP instance for the new host has not been initialized
E.The switch does not have the MAC address hard coded in theCAMtable.

Answer: B

Explanation:
Virtual LANs break up broadcast domains in a layertwo switchedinternetwork. If a host is in a different VLAN then
the network services it needs to use, the packets must go through a router.If routing does not take place, the PC will be
unable to communicate with any other devices not in the same VLAN.Answer B is the best answer for this question.
Incorrect Answers:
A.The PC is unable to communicate with other LAN users.No router needs to even be installed for this to work.
C, E.The MAC address of the PC does not need to be entered manually into the switch.The switch will dynamically
learn of the MAC address of the PC.
D.The STP algorithm does not need to have any end host information added inorderfor it to work.

QUESTION 252
You are attempting to troubleshoot some problems within your local network.Which of the following are router IOS commands that can be used to troubleshoot LAN connectivity problems? (Choose all that apply)
A.ping
B.tracert
C.ipconfig
D.show ip route
E.winipcfg
F. show interfaces
G.All of the above

Answer: A, D, F

Explanation:
All three of these are valid Cisco IOS commands that can be used to verify and troubleshoot connectivity issues on a
LAN or WAN.
Incorrect Answers:
B."Tracert" is not a valid Cisco IOS command.This command can be used while at the command prompt window of a
PC, but the corresponding Cisco command is "traceroute."
C, E.These are commands that can be useful in troubleshooting connectivity problems with an individual PC, but they
are not valid commands within a Cisco router.

QUESTION 253
Which router IOS commands can be used to troubleshoot LAN connectivity problems? Select three
A.Ping
B.Tracert
C.Ipconfig
D.Show ip route
E.Winipcfg
F.Show interfaces

Answer: A, D, F

QUESTION 254
Exhibit

```
Certkiller1#show vtp stat
VTP Version                     : 2
Configuration Revision          : 1
Maximum VLANs supported locally : 250
Number of existing VLANs        : 6
VTP Operating Mode              : Server
VTP Domain Name                 : Certkiller
VTP Pruning Mode                : Disabled
VTP V2 Mode                     : Disabled
VTP Traps Generation            : Disabled
MD5 digest                      : 0xBF 0x92 0x87 0xB0 0xA8 0x8F 0xDA 0x86
Configuration last modified by 0.0.0.0 at 3-1-93 00:03:32
Local updater ID is 0.0.0.0 (no valid interface found)
Certkiller2#show vtp stat
VTP Version                     : 2
Configuration Revision          : 0
Maximum VLANs supported locally : 250
Number of existing VLANs        : 5
VTP Operating Mode              : Server
VTP Domain Name                 : Certkiller
VTP Pruning Mode                : Disabled
VTP V2 Mode                     : Disabled
VTP Traps Generation            : Disabled
MD5 digest                      : 0xF3 0x03 0x4C 0x72 0xC8 0x6B 0x29 0x62
Configuration last modified by 0.0.0.0 at 0-0-00 00:00:00
Local updater ID is 0.0.0.0 (no valid interface found)
```


Study the exhibit. Two switches named Certkiller 1 and Certkiller 2, connect through ports configured as trunks. The trunk ports on both switches have been configured correctly and both interfaces are up. VTP, however, is not passing VLAN information between the two switches. Based on the output of theshowvtp statuscommand from both switches, what is the problem?
A.The domain names do not mach.
B.Only one switch can in VTOP server mode in a domain
C.The configuration revision numbers must match on the two switches.
D.The local updater IP address has not been configured.
E.The VTP timer settings must match.

Answer: A

Explanation:
Note that the domain names do not match. They areTeftKingand Certkiller .

QUESTION 255
To configure the VLAN trunking protocol to communicate VLAN information between two switches, what two requirements must be met? Select two.
A.Each end of the trunk line must be set to IEEE 802.1E encapsulation.
B.The VTP management domain name of both switches must be set the same.
C.All ports on both the switches must be set as access port.

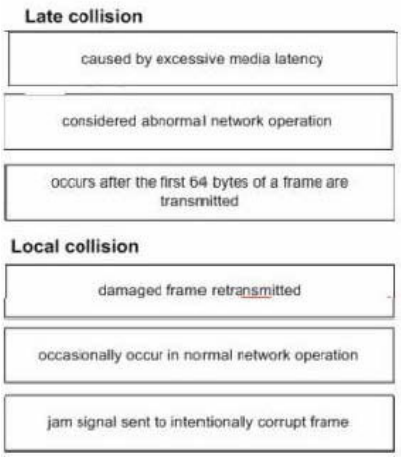
D.One of the two switches must be configured as a VTP server.
E.A rollover cable is required to connect the two switches together.
F.A router must be used to forward VTP traffic between VLANs.

Answer: B, D

QUESTION 256
As a network technician at Certkiller .com you are required to match the characteristics to the correct category of Ethernet collisions on the right. Not all characteristics are used.

Answer:

Explanation:



QUESTION 257
Exhibit:

Refer to the graphic. A host is connected to switch port Fa0/3 with a crossover cable. The host and switch have been fully configured for IP connectivity as shown. However, the port indicator on switch port Fa0/3 is not on, and the host can not communicate with any other hosts including those connected to VLAN 2 on the same switch. Based on the information given, what is the problem?
A.Switch port Fa0/3 is not configured as a trunk port.
B.The cable is the wrong type.
C.The switch has been assigned an incorrect subnet mask.
D.Switch port Fa0/3 has been blocked by STP.
E.The switch and the hosts must be in the same subnet.

Answer: B

Explanation:
To connect two different devices, we use straightthrough cables. In the scenario, a host is connected to a switch with a
crossover cable, so there will be no communication between them. Choice B is correct.

QUESTION 258
Exhibit:

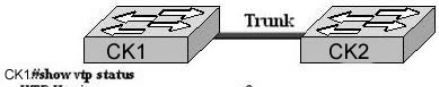
```
Labs# show vtp status
VTP Version                     : 1
Configuration Revision          : 2
Maximum VLANs supported locally : 64
Number of existing VLANs        : 9
VTP Operating Mode              : Server
VTP Domain Name                 : Labs
VTP Pruning Mode                : Disabled
VTP V2 Mode                     : Disabled
VTP Traps Generation            : Disabled
MD5 digest                      : 0xF3 0x6D 0x21 0x7C 0x0F 0xA9 0xE9 0x60
Certkiller.com
Offices# show vtp status
VTP Version                     : 1
Configuration Revision          : 3
Maximum VLANs supported locally : 64
Number of existing VLANs        : 9
VTP Operating Mode              : Server
VTP Domain Name                 : Offices
VTP Pruning Mode                : Disabled
VTP V2 Mode                     : Disabled
VTP Traps Generation            : Disabled
MD5 digest                      : 0x07 0x35 0xFA 0xD5 0xF8 0xBA 0xE5 0xD8
```

Refer to the exhibit. The network administrator has configured the switches in the school network to use VTP. The switches are not sharing VLAN information. Which sequence of commands should be issued to correct this problem?
A.Offices(config)#vtpmode clientLabs(config)#vtpmode client
B.Offices(config)#vtpdomain SchoolLabs(config)#vtpdomain School
C.Offices(config)#vtppruningLabs(config)#vtppruning
D.Offices(config)#vtpversion 2Labs(config)#vtpversion 2

Answer: B

Explanation:
For switched to sharevlaninformation, there VTP domain names must be same. In the Output shown, VTP domain
name of LABS router is Labs and VTP domain name of Offices router is Offices. As the domain names are different,
they are unable to communicate with each other. Inorder
to correct this problem, we have change their names to a single common name.

QUESTION 259
Exhibit:



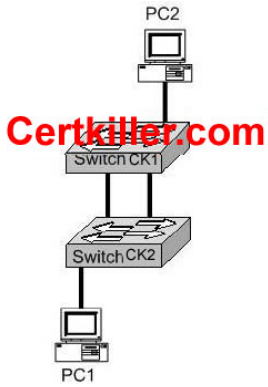

```
CK1#show vtp status
  VTP Version                     : 2
  Configuration Revision          : 5
  Maximum VLANs supported locally : 68
  Number of existing VLANs        : 8
  VTP Operating Mode              : Server
  VTP Domain Name                 : JAX
  VTP Pruning Mode                : Disabled
  VTP V2 Mode                     : Disabled
  VTP Traps Generation            : Disabled
  MD5 digest                      : 0x2D 0x88 0xA9 0x2A 0xC4 0xF8 0x77 0xEF
  Configuration last modified by 0.0.0.0 at 0-0-00 00:00:00

CK2#show vtp status
  VTP Version                     : 2
  Configuration Revision          : 3
  Maximum VLANs supported locally : 68
  Number of existing VLANs        : 8
  VTP Operating Mode              : Server
  VTP Domain Name                 : JAK
  VTP Pruning Mode                : Disabled
  VTP V2 Mode                     : Disabled
  VTP Traps Generation            : Disabled
  MD5 digest                      : 0xA8 0x67 0xF9 0xA8 0x92 0xE9 0x30 0x6B
  Configuration last modified by 0.0.0.0 at 0-0-00 00:00:00
```


Refer to the exhibit. Switches CK1 and CK2 have been configured with atrunkedline that has been verified as working correctly. However, VTP is not propagating VLANs from one switch to the other. Based on the command output shown, what is the problem?
A. The revision number is not the same on both switches.
B.Only one switch can be in server mode.
C.The VTP domain name is not correctly configured.
D.VLANs have not been configured on the VTP server.
E.The VTP pruning mode is not correctly configured.

Answer: C

Explanation:
VTP messages are exchanged between switches within a common VTP domain. In the output shown, VTP domain name
of switch CK1 is JAX and domain name of switch CK2 is JAK. As the VTP domain names are different so these two
switches will not exchange the VTP Information.
Reference:
http://www.ciscopress.com/articles/article.asp?p=29803&seqNum=4&rl=1

QUESTION 260
Exhibit:

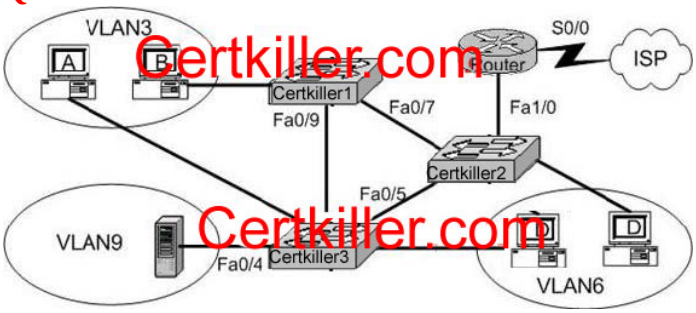


Refer to the exhibit. When PC1 sends an ARP requests for the MAC address of PC1, network performance slows dramatically, and the switches detect an unusually high number of broadcast frames. What is the most likely cause of this?
A.Theportfastfeature is not enabled on all switch ports.
B.The PCs are in two different VLANS.
C.Spanning Tree Protocol is not running on the switches.
D.PC2 is down and is not able to respond to the request.
E.The VTP version running on the two switches do not match.

Answer: C

Explanation:
As the switches CK1 and CK2 are connected with each other via two links, spanning tree must be enabled on both
switches to avoid switching loops and broadcast storms. An ARP request is a broadcast message. If Spanning tree is not
running, broadcast loops will form reducing the performance of the network.

QUESTION 261



A technician is investigating a problem with the exhibited network. These symptoms have been observed:
1.All of the user hosts can access the Internet.
2.None of the user hosts can access the server in VLAN9
3.All of the hosts can ping each other.
What could cause the symptoms?
A.Interface S0/0 on the router is down.
B.Interface Fa1/1 on the router is down.
C.Interface Fa0/5 on Certkiller 3 is down.
D.Interface Fa0/4 on Certkiller 3 is down.

E. Certkiller 2 is turned off.
F.Trunking is not enabled on the link between Certkiller 1 and Certkiller 3.

Answer: D

QUESTION 262
Which commands are required to properly configure a router to run OSPF and to add network 192.168.16.0/24 to OSPF area 0? Select two
A. Certkiller Router(config)#router ospf 0
B. Certkiller Router(config)#router ospf 1
C. Certkiller Router(config)#router ospf area 0
D. Certkiller Router(config)#network 192.168.16.0 0.0.0.255 0
E. Certkiller Router(config)#network 192.168.16.0 0.0.0.255 area 0
F. Certkiller Router(config)#network 192.168.16.0 255.255.255.0 area 0

Answer: B, E
ospf do not use area oospf range Cost is a metric value in the range 165535 ...

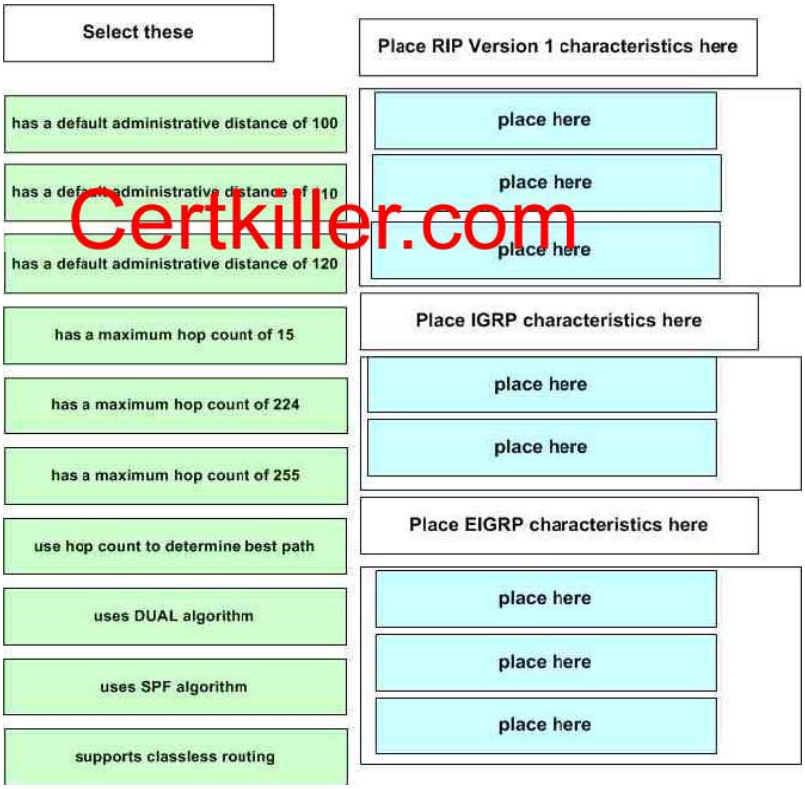
QUESTION 263
You are the network technician at Certkiller . Two routers on the Certkiller network, Router CK1 and Router CK2 are configured with RIP only. Router CK1 receives a routing update with a higher cost path to a remote network that is already in its routing table.
What will Router CK1 do?
A.It will ignore the update and take no further action.
B.It will add the update information to its routing table.
C.It will replace the existing routing table entry with the update information.
D.It will delete the existing routing table and will send out hello packets to rebuild the routing table.
E.The existing routing table entry will be deleted from the routing table and all routers will exchange routing updates to
reach convergence.

Answer: A

Explanation:
If a router learns multiple routes to the same subnet, it chooses the best route based on the metric.This is assuming that
the router learned the route from the same routing protocol.If learned from a different routing protocol, then the route
with the lowest AD will be installed into the routing table.
Reference:CCNA SelfStudy CCNA ICND Exam Certification Guide (Cisco Press, ISBN 158720083X) Page 150.
Incorrect Answers:
B, C.Only one route to a given destination is placed into the routing table, and the route with the lowest metric is always
chosen.
D. This would prove to be a very inefficient method.If this were true, then the entire routing table would be

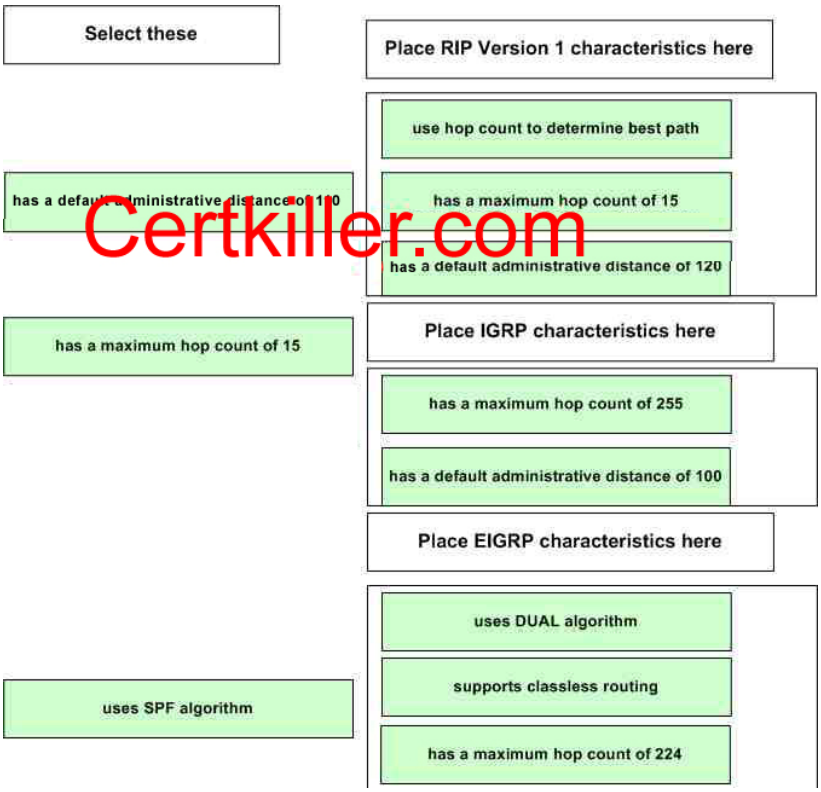
rebuilt for
each router nearly every time an update was received.

QUESTION 264
Exhibit:



Drag the characteristics on the left to the associated routing protocol on the right. (Not all characteristics will be used.)

Answer:



QUESTION 265

You are the network administrator at Certkiller . You issue the show ip route command on a router during routine maintenance. The output from the show ip route command indicates a network that is advertised by both RIP and IGRP as an IGRP route. Your Certkiller assistant wants to know why the RIP route to the network is not used in the routing table.

What will your reply be?

A.IGRP has a faster update timer.

B.IGRP has a lower administrative distance.

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

D.The IGRP route has fewer hops.

E.The RIP path has a routing loop.

Answer: B

Explanation:

To device which route to use, IOS uses a concept calledadministrative distance. Administrative distance is a number

that denotes how to believable an entire routing protocol is on a single router. The lower the number, the better, or more

believable, the routing protocol. For instance, RIP has a default administrative distance of 120, and IGRP defaults to

100, making IGRP more believable than RIP. So, when both routing protocols learn routes to the same subnet, the

router adds only the IGRP route to the routing table.
CCNA ICND Exam Certification Guide by Wendell Odem
Reference: Pg.177

QUESTION 266
You are the network administrator at Certkiller . Your newly appointed Certkiller trainee wants to know what the default administrative distance of OSPF routing protocol is.
What will your reply be?
A.90
B.100
C.110
D.120
E.170

Answer: C

Explanation:
The administrative distance values are configured on a single router and are not exchanged with other routers.
Table lists
the various sources of routing information, along with the default administrative distance.
Default Administrative Distances
Route TypeAdministrative Distance
Connected0
Static1
EIGRP summary route5
EBGP20
EIGRP (internal90
IGRP100
OSPF110
ISIS115
RIP120
EIGRP (external)170
iBGP (external)200

QUESTION 267
You are a technician at Certkiller . Your newly appointed Certkiller trainee wants to know what the maximum number of hops are that OSPF allows before marking a network as unreachable.
What would your reply be?
A.15
B.16
C.99
D.255
E.Unlimited

Answer: E

Explanation:
OSPF is a link state protocol. Link state protocols do not use hops to mark networks as unreachable. Instead OSPF
implements a steady state operation to its adjacent neighbors by sending and receiving small Hello packets periodically.
When an OSPF router does not receive a Hello packet for a specified time period, it assumes that the neighbor is
down. The router then runs the SPF algorithm to calculate new routes.
Hops counts are not used.

QUESTION 268
Which of the following statements can you use to describe the process identifier that is used to run OSPF on a router? (Select two options.)
A.It is needed to identify a unique instance of an OSPF database.
B.It is an optional parameter only necessary if multiple OSPF processes are used.
C.It is locally significant.
D.It is globally insignificant
E.All routers in the same OSPF area must have the same process ID to exchange routing information.

Answer: A, C

Explanation:
The OSPF process ID is locally significant, and is only used by the local router to discriminate between multiple OSPF
processes.In any given OSPF network, the process ID's do not need to match between neighboring routers.This is in
contrast to other routing protocols, such as EIGRP.
Additional info:
router ospf processi-d
no router ospf process-id
process-id
Internally used identification parameter for an OSPF routing process. It is locally assigned and can be any positive
integer. A unique value is assigned for each OSPF routing process.
Reference:
http://www.cisco.com/en/US/products/sw/iosswrel/ps1826/products_command_summary_chapter09186a00800d9c58.html

---

QUESTION 269
You are the network administrator at Certkiller . Certkiller has an OSPF network. You want to observe the DR/BDR election process in the Certkiller network. What command can you issue in privileged EXEC mode to accomplish this?
A. CK1 # show ip ospf interface
B. CK1 # show ip ospf priority
C. CK1 # show ospf neighbor detail
D. CK1 # show ospf processes

E. CK1 # show ospf neighbor state
252

Answer:
A

Explanation:
This command will display the router ID of both the DR and the BDR on the network segment that the particular
interface is connected to.
Example:
Router1#show ip ospf interfaceethernet0Ethernet0 is up, line protocol is upInternet Address 10.10.10.1/24, Area 0
Process ID 1, Router ID 192.168.45.1, Network Type BROADCAST, Cost: 10Transmit Delay is 1 sec, State BDR,
Priority 1Designated Router (ID) 172.16.10.1, Interface address 10.10.10.2Backup Designated router (ID) 192.168.45.1, Interface address 10.10.10.1Timer intervals configured, Hello 10, Dead 40, Wait 40, Retransmit 5Hello
due in00:00:06Index 1/1, flood queue length 0Next 0x0(0)/0x0(0)Last flood scan length is 2, maximum is 2Last flood scan
time is 0msec, maximum is 4msecNeighbor Count is 1, Adjacent neighbor count is 1Adjacent with neighbor 172.16.10.1(Designated Router)Suppress hello for 0 neighbor(s)

QUESTION 270
One of your trainees wants to know what the calculated OSPF cost of the link will be if the interface has been configured with the bandwidth 64 command. What will you tell her?

A. 1
B. 64
C. 1562
D. 64000
E. 1500

Answer: C

Explanation:
The question states that OSPF interface has been configured with the bandwidth 64command.Cisco IOS always interprets the values for the bandwidth command as being in kbps, so the bandwidth is configured as 64 kbps.The
metric for any OSPF defaults to 100,000,000/bandwidth.So, in this example:
100,000,000 / 64000 = 1562.5

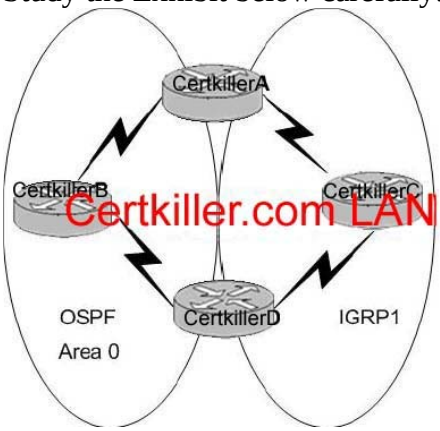
QUESTION 271
Which of the following commands are required to create an 802.1Q link on an IOS based switch when you want to establish a trunk link between two switches? (Select two options.)
A.Switch(vlan)#mode trunk

B.Switch(config)#switchportaccess mode trunk
C. Switch(configif)# switchportmode trunk
D.Switch(configif)# switchporttrunk encapsulation dot1q
E.Switch(config)#switchportaccess mode 1
F.Switch(vlan)#trunk encapsulation dot1q

Answer: C, D

Explanation:
Creating this trunk link is a two step process. First you have to set theswitchportmode to trunk, and then you configure
the encapsulation. The giveaway on this question is the fact that to create a trunk on an interface, you have to be in
interface configuration mode. So C sets the trunk, and D sets the encapsulation.

QUESTION 272
Study the Exhibit below carefully:



You are the network administrator at Certkiller . Certkiller A is using multiple routing protocols according to the exhibit. Assuming that all networks that are connected are advertised, there are no redistribution of routes, and all other parameters are set to default, which path do you think will Certkiller A use to reach Certkiller D?
A.It will take the route via Certkiller B.
B.It will take the route via Certkiller C.
C.It will use the route with the highest metric.
D.It will load balance over both paths.
E.It will take the shortest route

Answer: B

Explanation:
Based on the diagram, router A will learn how to reach the destination located at router D via 2 separate methods:
IGRP and OSPF.By default IGRP has a lower administrative distance (OSPF'sadministrative distance is 110,IGRP'sis
only 100) so with all else being equal, IGRP will be selected over the OSPF route, so it will choose the route via

router
C.

QUESTION 273
Your trainee wants to know what information a router runs through a linkstate protocol to build and maintain its topological database. What can you tell her? (Select two options.)
A.LSAsfrom other routers
B.Beacons received on pointtopoint links
C.hello packets
D.Routing tables received from other routers
E.SAP packets sent by other routers
F.TTL packets from exclusive routers

Answer: A, C
Explanation
LSA stands for (Link State Advertisement).It is an update sent out by an OSPF router to advertise the subnet number,
subnet mask, cost (metric), etc. so that other routers can update their topology databases. Hello packets are sent out by
routers as a way of keeping in touch with neighboring routers to tell that they are still up and their routes are still useable.
Reference:CCNA SelfStudy CCNA ICND Exam Certification Guide (Cisco Press, ISBN 158720083X) Page 192 193
Incorrect Answers:
B.Beacons are used in token ring networks as a sign of an error or fault.
D.This would be more accurate of a distance vector protocol, not a link state routing protocol.
E.SAP entries are used in IPX networks, not for IP routing protocols.

QUESTION 274
Assuming that all OSPF routers in a particular area are configured with identical priority values, which of the following values would a router use for OSPF router ID when it does not have a loopback interface?
A.The IP address of the first Fast Ethernet interface.
B.The IP address of the console management interface.
C.The highest IP address among its active interfaces.
D. The lowest IP address among its active interfaces.
E.The priority value until a loopback interface is configured.

Answer: C

Explanation:
Ordinarily the loopback interface would be selected as the router ID, but since there is no loopback interface set, the
router ID will be the IP address of the first active interface.If by chance that particular interface has more than one IP
address, then the highest address will be selected as the Router ID in theory.In practice, the first interface to

come up in
an OSPF router will become the router ID, since the election process is non-preemptive.

QUESTION 275
When dealing with pointtopoint networks, which address are OSPF hello packets addressed to?
A.127.0.0.1
B.192.168.0.5
C.223.0.0.1
D.172.16.0.1
E.224.0.0.5
F.254.255.255.255.255

Answer: E
Explanation
The multicast IP address 224.0.0.5 is known as 'AllSPFRouters.' All routers running OSPF should be prepared to
receive packets sent to this address since hello packets are always sent to this destination. Also, certain OSPF protocol
packets are sent to this address during the flooding procedure.
Incorrect Answers:
A.This is the IP address reserved for the internal loopback on PC hosts.All windows based PC's will use this internal IP
address, assuming that the TCP/IP stack is correctly installed.
B, D.These addresses are part of the range of addresses reserved for internal use, as defined in RFC 1918.

QUESTION 276
Which of the different types of packets mentioned below is sent by routers running OSPF to maintain connectivity with neighboring routers?
A.OSP packets
B.hello packets
C. keepalivepackets
D.dead interval packets

Answer: B
Explanation
Hello packets simply identify the subnet, the router sending the packets and a few other details. As long as a router
continues to receive Hellos form existing neighbors, the attached link must still be useable, and the neighbor that sent the
Hello must still be up and working.
Reference:CCNA SelfStudy CCNA ICND Exam Certification Guide (Cisco Press, ISBN 158720083X) Page 192 193
Incorrect Answers:
A, E.SPF (shortest path first) and LSU (link state update) packets are not used to maintain connectivity between neighbors.
C.Keepalivepackets do not exist.Hello packets perform the functions of akeepalivepacket.

QUESTION 277
Which of the following are features of the routing protocol EIGRP? (Select two options.)
A.Has a maximum hop count of 25
B.Can differentiate between internal and external routes
C.Uses a 32bit metric
D.Can maintain only one routing table
E.Need all networks to use the same subnet mask
F.Supports only one routed protocol

Answer: B, C
Explanation
By default, the EIGRP composite metric is a 32bit quantity that is a sum of the segment delays and the lowest segment
bandwidth.
Enhanced IGRP supports internal and external routes. Internal routes originate within an Enhanced IGRP AS. Therefore, a directly attached network that is configured to run Enhanced IGRP is considered an internal route and is
propagated with this information throughout the Enhanced IGRP AS. External routes are learned by another routing
protocol or reside in the routing table as static routes. These routes are tagged individually with theidentity of their origin.
Incorrect Answers:
A.This choice is wrong since it does not use hop count but a metrics that includes: bandwidth*, delay*, load, reliability,
and MTU size. (* used by default).
D.
This choice is wrong since we know that it keeps a three tables (neighbor table, topology table, and route table) and if
you want to be a nit pick and say it still only supports one route table, then if you configure IP and IPX on the router,
you will have two route tables one for each protocol.
E.This choice is wrong since we know that EIGRP supports VLSM.
F.This choice is wrong since we know it supports IP, IPX andAppletalk.

QUESTION 278
If the bandwidth of an OSPF interface is 64, what would be the calculated cost of the link?
A.1
B.10
C.1562
D.64000
E.128000
F.None of the above

Answer: C
The question states that OSPF interface has been configured with the bandwidth 64command.Cisco IOS always

interprets the values for the bandwidth command as being in kbps, so the bandwidth is configured as 64 kbps.The
metric for any OSPF defaults to 100,000,000/bandwidth.So, in this example:
100,000,000 / 64000 = 1562.5
Reference:SybexCCNA Study Guide edition 4, page 284.

QUESTION 279
Study the Exhibit below carefully:
RtrA#debugip rip
Rip protocol debugging is on
RtrA#
1d05h: RIP: sending v1 update to 255.255.255.255 via FastEthernet0/0 (172.16.1.1)
1d05h: RIP: build update entries
1d05h: network 10.0.0.0 metric 1
1d05h: network 192.168.1.0 metric 2
1d05h: RIP: sending v1 update to 255.255.255.255 via Serial0/0 (10.0.8.1)
1d05h: RIP: build update entries
1d05h: network 172.16.0.0 metric 1
RtrA#
1d05h: RIP: received v1 update from 10.0.15.2 on Serial0/0
1d05h:192.168.1.0 in 1 hops
1d05h:192.168.0 in 16 hops (inaccessible)
Which of the following statements would be true when one encounters the command output shown in the display? (Select two options.)
A.A ping to 10.0.15.2 will be successful.
B.RtrAhas three interfaces that will take part in the RIP process.
C.There are at least two routers participating in the RIP process.
D.A ping to 192.168.168.2 will be positive.

Answer: A, C
Explanation
By virtue of RIP receiving an update from 10.0.15.2 on Serial0/0, we know that there has to be another router in the
picture, so C is a correct choice. Since the router received an update from the neighbor address, we know that there's a
connection.Therefore, a ping can be successful, making answer choice A correct as well.
Incorrect Answers:
B.This is incorrect because there isn't conclusive evidence to support this.
D.This is incorrect because from the exhibit above the router is inaccessible, therefore the success of a ping would be
unknown.

QUESTION 280
You are a network technician at Certkiller , Inc. You have been asked to add a new router into an established OSPF network. The Certkiller networks attached to the new router do not appear in the routing tables of the other OSPF routers. Given the information in the partial configuration shown below, what configuration error

is causing this problem?
Router(config)# router ospf 1
Router(configrouter)# network 10.10.10.0 255.0.0.0 area 0
A.The AS is not correctly configured
B.The network subnet mask is incorrectly configured
C.The network wildcard mask is configured incorrectly
D.The network number is not correctly configured
E.The process id is configured incorrectly

Answer: C
Explanation
The network command specifies the IP address (10.10.10.0) followed by the wildcard mask (not the subnet mask) and
the area that is to be associated with the OSPF address range (in this case, area 0). The wildcard mask indicates in
binary how much of the IP address much be matched with 0s indicating that the bits must match and 1 indicating that
they may vary. Thus 0.0.0.255 or 00000000.00000000.00000000.11111111 indicates that any bit in the last octet can
vary while all bits in the first 3 octets must match the network address (in other words, 10.10.10.xx)

QUESTION 281
On which of the following types of network will OSPF elect a backup designated router?
A.Pointtopoint and pointtomultipoint casting
B.Nonbroadcastand broadcast multipoint casting
C.Pointtopoint and multiaccess broadcasting
D.Pointtomultipoint and multiaccess broadcasting
E.Nonbroadcastand broadcastmultiaccess

Answer: E

Explanation: Sybex CCNA Study Guide 4th Edition (Page 283)"DR and BDR are elected on broadcast and nonbroadcastmultiaccess networks."

QUESTION 282
Why is it a wise decision to use a hierarchical design on OSPF networks? (Choose all that apply.)
A.To reduce the complexity of router configuration
B.To speed up convergence
C.To confine network instability to single areas of the network
D.To reduce routing overhead
E.To lower costs by replacing routers
F.To decrease latency by increasing bandwidth

Answer: B, C, D

Explanation:

An OSPF network designed in a hierarchical fashion with different areas is used because a small change in the topology
of a single area won't force every router to run the SPF algorithm.Changes in one area are limited to that area only, not
to every router within the entire network.Confining the topology changes to one area reduces the overhead and speeds
the convergence of the network.
Reference:CCNA SelfStudy CCNA ICND exam certification Guide (Cisco Press, ISBN 158720083X) Page 194
Incorrect Answers:
A.This choice is incorrect because a hierarchical design actually adds complexity to the router configuration.
E.This is incorrect because a hierarchical design will not eliminate the need for routers.In fact, segmenting the network
into multiple areas may actually require the use of additional routers.
F.The use of a hierarchical design will in no way reduce the latency involved.If additional routers are implemented in
order to segment the network into additional areas, then the latency involved may actually increase.

QUESTION 283
You are a network technician at Certkiller , Inc.One of your trainees asked you which parameter must be supplied when initializing the IGRP routing process.
What would your response be?
A.IP address subnet mask
B.Metric weighting
C.Register administrative id
D.Autonomous system number
E.Connected network ID numbers

Answer: D

Explanation:
You configure IGRP just like RIP, except that the router igrp command has an additional parameter the autonomous
system (AS) number. The term autonomous system refers to a network that is within the control of a single company or
organization. The term AS number refers to a number assigned to a single company or organization when it registers its
connection to the Internet. However, for IGRP, you do not need a registered AS number. All that is needed for IGRP
to work is for all the routers to use the same AS number.
Example configuration:
Router EIGRP 1
Network 10.0.0.0
In this example, 1 is the AS number chose for EIGRP process 1.

QUESTION 284
Which two are NOT characteristics of the OSPF routing protocol? (Select all that apply)
A.It confines network instability to a single area of network.
B.It increases the routing overhead of the network
C.It supports VLSM
D.It routes between Autonomous Systems.
E.It allows extensive control of routing updates

Answer: B, D

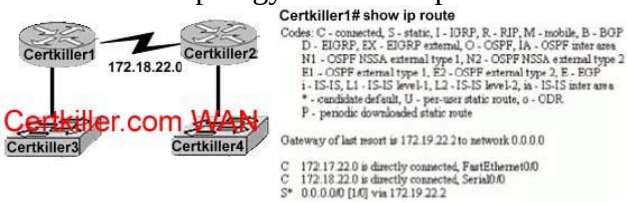
Explanation:
Through the use of areas, routing information and instability's are reduced to specific areas.This will reduce the routing
overhead on a network, not increase it.OSPF is not used to provide routing information between different systems.BGP
is predominately used for this purpose.
Incorrect Answers:
A, C, E.These are all true statements that describe the features and functionality of OSPF.

QUESTION 285
One of your trainees asked you which parameter must be supplied when initializing the IGRP routing process. What is your response?
A.The wild card mask
B.The IP address
C.The IP address mask
D.The metric weights
E.The Autonomous System number

Answer: E

Explanation:
You configure IGRP just like RIP, except that the router igrp command has an additional parameter the autonomous
system (AS) number. The term autonomous system refers to a network that is within the control of a single company or
organization. The term AS number refers to a number assigned to a single company or organization when it registers its
connection to the Internet. However, for IGRP, you do not need a registered AS number. All that is needed for IGRP
to work is for all the routers to use the same AS number.
Example configuration:
Router EIGRP 1
Network 10.0.0.0
In this example, 1 is the AS number chose for EIGRP process 1.

QUESTION 286
You are a network technician at Certkiller , Inc. You received a report that users on the 172.17.22.0 network are unable to reach the server located on the 172.31.5.0 network. You connected to router Certkiller 1 via the console port, issued the show ip route command, and could ping the server.
The network topology and the output from the show ip route is shown in the following exhibit:



172.17.22.0172.31.5.0
Changes to the Certkiller network were made, and now users on the Certkiller 3 LAN are not able to connect to the Certkiller 4 LAN.Based on the information above, what could be the reason for this?
A.TheFastEthernetinterface is disabled.
B.The neighbor relationship table is not updated.
C.A static route is configured incorrectly.
D.The routing table on Certkiller 1 is not updated.
E.IP routing is not enabled.

Answer: C

Explanation:
On the bottom line of the command output for 'show ip route' you can see that there is an asterisk by the letter S. The S
stands for static route, and the static route is incorrectly configured.
Incorrect Answers:
A.If this were true, then the users on the LAN would be unable to connect to anything outside of their own network.
B.It appears that only a single static route is being used on the Certkiller 1 router.Neighbors do not need to be established for static routes.
D.The routing table consists of a single static route, which is configured incorrectly.The routing tables do not become
updated dynamically when static routes are used.
E.This is not true, as a static route has been configured.

QUESTION 287
You are a network technician at Certkiller , Inc. You received reports that users on the Certkiller 2 Ethernet site cannot access the Certkiller 1 network site. You issue the show runningconfig command. The output form the command is shown in the following exhibit:

```
 Certkiller1# Show running-config

<some output text omitted>

interface serial0/0
 ip address 10.0.1.1 255.255.255.0
 encapsulation frame-relay
!
router igrp 1
network 10.0.0.0

 Certkiller2# show running-config

<some output text omitted>

interface fastethernet0/0
 ip address 10.10.1.2 255.255.255.0

interface serial0/0
 ip address 10.0.1.1 255.255.255.0
 encapsulation frame-relay
!
router igrp 2
network 10.0.0.0
```

After reviewing the command output, what is the most likely cause of the problem?
A.Link state routing protocol is missing.
B.Incorrectly configured IP addresses
C.IGRP is incorrectly configured.
D.Frame relay is not configured.

Answer: C

Explanation:
router igrp
To configure the Interior Gateway Routing Protocol (IGRP) routing process, use therouter igrpglobal configuration
command. To shut down an IGRP routing process, use thenoform of this command.
router igrpautonomous-system
autonomoussystemAutonomous system number that identifies the routes to the other IGRP routers. It is also used to
tag the routing information.

QUESTION 288
You are the network administrator at Certkiller . You want to review the Layer 3 configuration of directly connected router interfaces.
Which command will provide you with this information?
A.show ip interface
B.showcdpneighbors
C.show ip route
D.show ip link status
E.showcdpnetwork

Answer: C

Explanation:
The show ip route command identifies the routing protocol used to learn each route via the first item in each route listed

in the routing tables.
Reference:
CCNA SelfStudy CCNA ICND exam certification Guide (Cisco Press, ISBN 158720083X) Page 473

QUESTION 289
While logged into a router, you wish to see the RIP routing updates in real time as they are sent and received.Which command would you issue to see these updates?

A. Show ip protocols
B. Show ip route rip
C. Debug ip rip
D. Debug ip updates
E. Debug ip transactions

Answer: C

Explanation:
The command debug ip rip will display routing updates as they as sent and received by a router.
Incorrect Answers:
A.This command will show the routing protocols that the router is using, but it will not show anything in real time.All
show commands take a snapshot of what the router is doing at that given time.
B.This will provide all of the routes that have been learned by the router via RIP, but it will not show the updates in real
time.
D, E.These are invalid commands.

QUESTION 290
You are configuring a brand new router for the first time.In doing so, you log into the router via a console cable and then copy and paste the configuration from a notepad document.After this, the configuration appears as follows:

```
hostname    CertkillerA
!
!
interface Ethernet0
 ip address 192.168.10.9 255.255.255.248
!
interface Serial0
 ip address 172.16.25.1 255.255.255.0
 clockrate 56000
!
interface Serial1
 ip address 10.1.1.1 255.255.255.0
!
router rip
 network 192.168.10.0
!
line con 0
 password Certkiller
 login
line aux 0
line vty 0 4
 password Certkiller
 login
!end
```

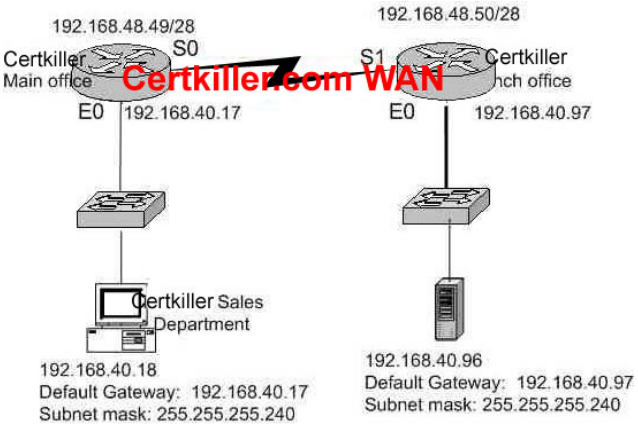
Host 192.168.10.10/29 can't ping the Ethernet interface of the router after the router is installed into the

network. Why? (Select only one answer choice)
A.The new configuration must be saved to the NVRAM before the changes can be effected.
B.The subnet mask on the router results is miscommunication.
C.The Ethernet network does not feature in the routing table due toimcompleteRIP configuration.
D.The copied configuration did not overwrite the shutdown command on the Ethernet interface.
E.The router needs to be rebooted before the changes are effected.

Answer: D

Explanation:
Default configuration of any interface is always shutdown and always needs the command "no shutdown" in the interface
command mode inorderto enable the interface.
Reference:
CCNA SelfStudy CCNA INTRO exam certification Guide (Cisco Press, ISBN 1587200945) Page 379

QUESTION 291
The Certkiller HQ and branch office locations are set up as shown in the diagram below:



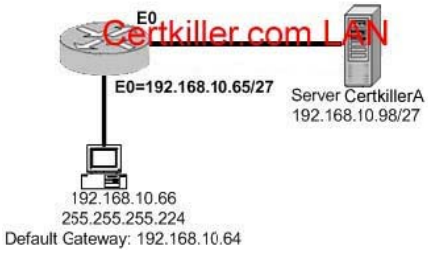
Hosts from thesalesdepartment are unable to access the new branch office server that was recently installed.Based on the exhibit above, what is the underlying cause of this problem?
A. The default gateway in thesalesdepartment is inaccurate.
B.The serial 0 interface on the Main Office router and the serial 1 interface on the Branch Office router are not compatible.
C.The subnet mask of the workstations in thesalesdepartment is inaccurate.
D.The host address of the server at the Branch Office is invalid.
E.The default gateway of the server at the Branch Office is inaccurate.
F.None of the above

Answer: D

Explanation: The host address is incorrectly a network address.
Incorrect Answers:
A.The default gateway in thesalesdepartment is correct.
B.This is no problem here.
C.The subnet mask is correct.

E.The default gateway in the branch office is correct.
Reference:SteveMcQuerry, "Interconnecting Cisco Network Devices" (Cisco Press: 2000) pages 233 234.

QUESTION 292
The new Certkiller location is displayed below:

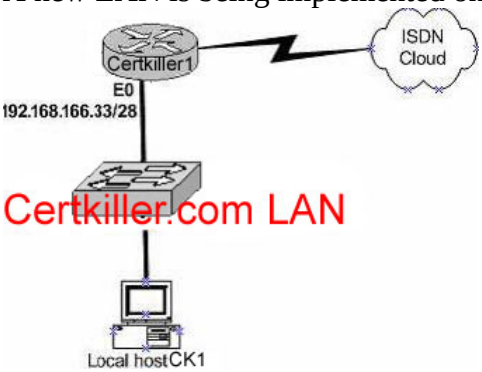


A new PC is installed on the LAN of the Certkiller 1 router as shown above.This PC is unable to connect to the Certkiller A server located on the Ethernet 1 network.What is the cause of this?
A. IP address of the Ethernet 0 router interface is wrong
B.Server is using an invalid IP address
C.Workstation default gateway is set incorrectly
D.Workstation subnet mask is incorrect
E.Workstation IP address is invalid

Answer: C

Explanation:
The default gateway of the host (192.168.10.64) is wrong.192.168.10.64 is the network address of the host's network
in this question.The default gateway should be the address of the local interface of the router.In this case: 192.168.10.65.
Incorrect Answers:
A:The IP address of the Eternet0 interface is valid.
B:The IP address of the server is valid.
D:The network uses a 27 bit subnet mask which equates to 255.255.255.224.
E:The IP host address 192.168.10.66 is a valid host address on the subnet.

QUESTION 293
A new LAN is being implemented on the Certkiller 1 network as shown below:



The local host CK1 can't access any of the resources on the other networks.The configuration of CK1 is as follows:

host address: 192.168.166.45
subnet mask: 255.255.255.240
default gateway: ..192.168.166.32
What is the underlying cause of this problem?
A.The default gateway is a network address.
B.The default gateway is on a different subnet address as the host.
C.The IP address of the host is on a different subnet.
D.The host subnet mask is incompatible to the subnet mask of the attached router interface.

Answer: A

Explanation:
The range of the subnet used in this question is 192.168.166.32 to 192.168.166.47.192.168.166.32 is the network
address and 192.168.166.47 is the broadcast.This leaves the usable host address range of 192.168.166.33 to 192.168.166.46.
The default gateway for the host should be 192.168.166.33.
Incorrect Answers:
B:The default gateway is on the same network but it is a network address.
C:The host address is correct.
D:The subnet mask 255.255.255.240 uses 28 bits and is therefore correct.

QUESTION 294
You're working at Certkiller as a network administrator when your MCSE assistant calls you for help.He has attempted to configure Router CK1 and incorrectly configured the router interface with a subnet broadcast address. You have to correct this by first removing the incorrect IP address and then reentering the first usable IP address of the same subnet.
How will you do this?
A. CK1 (configif)# no ip address 190.160.45.31 255.255.255.240 CK1 (configif)# ip address 190.160.45.17 255.255.255.240
B. CK1 (configif)# no ip address 190.160.45.23 255.255.255.252 CK1 (configif)# ip address 190.160.4.21 255.255.255.252
C. CK1 (configif)# no ip address 190.160.45.23 255.255.255.240 CK1 (configif)# ip address 190.160.45.20 255.255.255.240
D. CK1 (configif)# clear ip address 190.160.45.23 255.255.255.0 CK1 (configif)# no address 190.160.45.17 255.255.255.0
E. CK1 (configif)# no ip address 190.160.45.15 255.255.255.252 CK1 (configif)# ip address 190.160.45.9 255.255.255.252

Answer: A

Explanation:
To set a primary or secondary IP address for an interface, use theip addressinterface configuration command. To remove an IP address or disable IP processing, use thenoform of this command.
CurrentHostRange= 190. 160. 45. 17 to 190. 160. 45. 30
Incorrect Answers:

B, C, E.These are all invalid IP address combinations, given that the broadcast address and the first usable IP address
combinations do not match.
D.The "clear" command is invalid.To erase a configuration statement, simply add the keyword "no" to the beginning of
the configuration statement.

QUESTION 295
Part of the configuration files for routers Certkiller 1 and Certkiller 2 are displayed below:
hostname Certkiller 1hostname Certkiller 2
!!
username Certkiller 2 password kingusername Certkiller 1 password king
!!
interface serial 0interface serial 0
ip address 12.3.6.2 255.255.0.0ip address 12.3.6.3 255.255.0.0
encapsulation pppencapsulation ppp
clockrate 56000ppp authentication chap
If you were to enter the "show interface serial 0" command on router Certkiller 1, which of the following will be displayed?(Choose two)
A.Serial 0 is down, line protocol is down
B.Serial 0 is up, line protocol is up
C.Open: IPCP, CDPCP
D.LCP closed
E.LCP open

Answer: B, E

Explanation:
Even though CHAP is only configured on one end of the link, the physical serial interfaces will be up, line protocol up
since the encapsulations match with PPP on each end, and the clock rate is set on the DCE end.LCP will be open, since
the username and password statements are correctly configured for the PPP CHAP authentication.

QUESTION 296
While troubleshooting a connectivity issue from a PC you obtain the following information:
Local PC IP address:190.0.3.35/24
Default Gateway:190.0.3.1
Remote Server:190.0.5.250/24
You then conduct the following tests from the local PC:
Ping127.0.0.1 Unsuccessful
Ping190.0.3.35 Successful
Ping190.0.3.1 Unsuccessful
Ping190.0.5.250 Unsuccessful
What is the underlying cause of this problem?

A. TCP/IP not correctly installed
B. Local physical layer problem
C. NIC not functioning
D. Remote physical layer problem

Answer: A

Explanation:
Every Windows based PC uses the 127.0.0.1 as the local loopback IP address.Every PC will respond to this local IP
address if the TCP/IP stack is correctly installed and running on the machine.If you cannot ping the loopback address of
127.0.0.1, then something is wrong with the TCP/IP protocol stack.

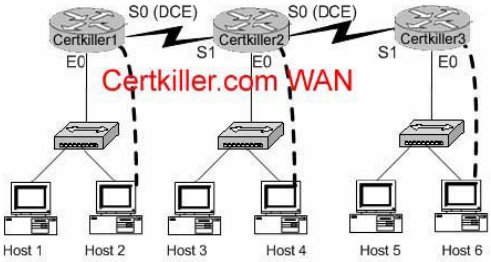
QUESTION 297
While troubleshooting connectivity issues, you log into a remote router.From there, you wish to see the layer 1 and layer 2 status of the interface.Which of the following IOS commands would you issue to check the current IP addressing, as well as the layer1 and layer 2 status of an interface?(Select three answer choices)
A. CK1 # show version
B. CK1 # show protocols
C. CK1 # show interfaces
D. CK1 # show controllers
E. CK1 # show ip interface
F. CK1 # show startupconfig

Answer: C, D, E

Explanation:
show interfacesis used to see the IP addresses and layer 2 information configured on the interfaces.
show controllersis used to see the layer 1 statistics. It tells about the V.35 cables whether they are physically attached or
not.
show ip interfacesis used to see the IP addresses configured on the interfaces.
Incorrect Answers:
A.This will show IOS information and hardware information on the router, but will not show any individual interface
information.
B.
This will show the layer 3 and layer 4 protocols running on the interface, but it will not provide any information on layer
one or two.
F.This will only show the information pertaining to the configuration file that is saved in NVRAM.

QUESTION 298
A local chain of bike shops wants to centralize their business administration and connect their three computer networks together.To do this, the network was set up with 3 routers, which were configured as

shown below:
*The routers are named: Certkiller 1, Certkiller 2, and Certkiller 3, respectively.
*They are all using RIP as the routing protocol
*The serial 0 interfaces are responsible for clocking
*The password for all three routers is " Certkiller "
*All three routers are using their default subnet mask.
*The IP addresses are as listed below.
You need to figure out what's causing the miscommunication and make whatever changes are necessary to establish connectivity between the three shops.Click on the correct part of the network below, and make the necessary changes in the configuration.
Certkiller 1
E0192.168.27.1
E1192.168.29.1
S0192.168.31.1
Secret password: Certkiller
Certkiller 2
E0192.168.35.1
S0192.168.33.1
S1192.168.31.2
Secret password: Certkiller
Certkiller 3
E0192.168.37.1
S1192.168.33.2
Secret password: Certkiller



To configure the router you need to click on the host icon that is connected to the router by a serial cable.

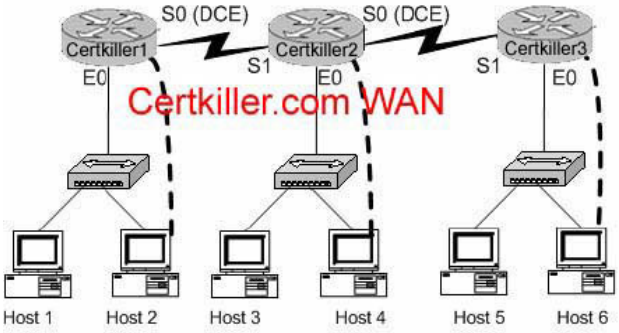
Answer:

Explanation:
Click on Host 2:
Router Certkiller 1:
Certkiller 1>enable
Password: Certkiller
Certkiller 1 #config terminal
Certkiller 1 (config) #interfaceethernet0
Certkiller 1 (configif) #ip address192.168.27.1 255.255.255.0 Certkiller 1 (configif) #no shutdown Certkiller 1 (configif) #exit Certkiller 1 (config) #interfaceethernet1 Certkiller 1 (configif) #ip address 192.168.29.1 255.255.255.0 Certkiller 1 (configif) #no shutdown Certkiller 1 (configif)# exit Certkiller 1 (config) #interface serial 0

Certkiller 1 (configif)# ip address 192.168.31.1 255.255.255.0
Certkiller 3 (configif) #clock rate 64000 Certkiller 1 (configif)# no shutdown Certkiller 1 (configif)# exit Certkiller 1
(config) #router rip Certkiller 1 (configrouter) #network 192.168.27.0 Certkiller 1 (configrouter) #network 192.168.29.0 Certkiller 1 (configrouter) #network 192.16831.0 Certkiller 1 (configrouter) #CtrlZ Certkiller 1 #copy
runningconfigstartupconfig
Click on Host 4
Router Certkiller 2:
Certkiller 2>enable
Password: Certkiller Certkiller 2 #config t Certkiller 2 (config) #interfaceethernet0 Certkiller 2 (configif) #ip address192.168.35.1 255.255.255.0 Certkiller 2 (configif) #no shutdown Certkiller 2 (configif) #exit Certkiller 2
(config) #interface serial 0 Certkiller 2 (configif) #ip address 192.168.33.1 255.255.255.0
Certkiller 2 (configif) #clock rate 64000 Certkiller 2 (configif) #no shutdown Certkiller 2 (configif) #exit Certkiller 2
(config) #interface serial 1 Certkiller 2 (configif)# ip address 192.168.31.2 255.255.255.0 Certkiller 2 (configif) #no
shutdown Certkiller 2 (configif) #exit Certkiller 2 (config) #router rip Certkiller 2 (configrouter) #network 192.168.35.0
Certkiller 2 (configrouter) #network 192.168.33.0 Certkiller 2 (configrouter) #network 192.168.31.0 Certkiller 2
(configrouter) #CtrlZ Certkiller 2 #copy runningconfig startupconfig
Router Certkiller 3:
Click on Host6
Certkiller 3>enable
Password: Certkiller Certkiller 3 #config t Certkiller 3 (config) #interfaceethernet0 Certkiller 3 (configif) #ip address192.168.37.1 255.255.255.0 Certkiller 3 (configif) #no shutdown Certkiller 3 (configif) #exit Certkiller 3
(config) #interfaceserial 1 Certkiller 3 (configif) #ip address 192.168.33.2255.255.255.0
Certkiller 3 (configif) #no shutdown Certkiller 3 (configif) #exit Certkiller 3 (config) #router rip Certkiller 3 (configrouter)
#network 192.168.33.0 Certkiller 3 (configrouter) #network 192.168.37.0 Certkiller 3 (configrouter) #CtrlZ Certkiller 3
#copy runningconfigstartupconfig

QUESTION 299
The Certkiller .com network has three different sites with one router at each site. The routers are named Certkiller 1, Certkiller 2, and Certkiller 3. An assistant technician has configured all the routers, but no connectivity exists between the routers. Your task is to identify all error(s) and make the necessary adjustment(s) to establish network connectivity.
The routers have been configured with the following configuration:
*They are named Certkiller 1, Certkiller 2, and Certkiller 3.
*RIP is the routing protocol
*Clocking is provided on the serial 0 interface.
*The password on each router is " Certkiller "

*The subnet mask on all interfaces is the default subnet mask.
* The IP addresses are listed in the chart below.
Certkiller 1
E0192.168.3.1
S0192.168.5.1
Certkiller 2
E0192.168.8.1
S0192.168.11.1
S1192.168.5.2
Certkiller 3
E0192.168.13.2
S1192.168.11.2



To configure the router click on a host icon that is connected to the router by a serial console cable.

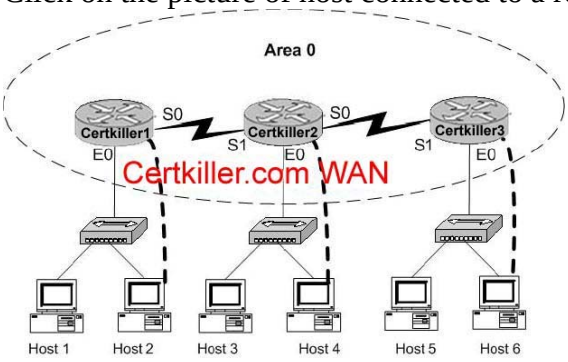
Answer:

Explanation:
Note: The following solutions are complete. It might not be necessary to configure everything.
Click on Host 2:
Router
Certkiller 1:
Certkiller 1>enable
Password: Certkiller
Certkiller 1 #config terminal
Certkiller 1 (config) #interfaceethernet0
Certkiller 1 (configif) #ip address192.168.3.1 255.255.255.0 Certkiller 1 (configif) #no shutdown Certkiller 1 (configif) #exit Certkiller 1 (config) #interface serial 0 Certkiller 1 (configif)# ip address 192.168.5.1 255.255.255.0
Certkiller 1 (configif) #clock rate 64000
Certkiller 1 (configif)# no shutdown Certkiller 1 (configif)# exit Certkiller 1 (config) #router rip Certkiller 1 (configrouter)
#network 192.168.3.0 Certkiller 1 (configrouter) #network 192.168.5.0 Certkiller 1 (configrouter) #CtrlZ
Certkiller 1
#copy runningconfigstartupconfig
Click on Host 4
Router Certkiller 2:
Certkiller 2>enable

Password: Certkiller Certkiller 2 #config t Certkiller 2 (config) #interfaceethernet0 Certkiller 2 (configif) #ip address192.168.8.1 255.255.255.0 Certkiller 2 (configif) #no shutdown Certkiller 2 (configif) #exit Certkiller 2 (config)
#interface serial 0 Certkiller 2 (configif) #ip address 192.168.11.1 255.255.255.0
Certkiller 2 (configif) #clock rate 64000 Certkiller 2 (configif) #no shutdown Certkiller 2 (configif) #exit Certkiller 2
(config) #interface serial 1 Certkiller 2 (configif)# ip address 192.168.5.2 255.255.255.0 Certkiller 2 (configif) #no
shutdown Certkiller 2 (configif) #exit Certkiller 2 (config) #router rip Certkiller 2 (configrouter) #network 192.168.8.0
Certkiller 2 (configrouter) #network 192.168.11.0 Certkiller 2 (configrouter) #network 192.168.5.0 Certkiller 2 (configrouter) #CtrlZ Certkiller 2 #copy runningconfig startupconfig
Router Certkiller 3:
Click on Host F
Certkiller 3>enable
Password: Certkiller Certkiller 3 #config t Certkiller 3 (config) #interfaceethernet0 Certkiller 3 (configif) #ip address192.168.13.2255.255.255.0 Certkiller 3 (configif) #no shutdown Certkiller 3 (configif) #exit Certkiller 3 (config) #interfaceserial 1 Certkiller 3 (configif) #ip address 192.168.11.2255.255.255.0
Certkiller 3 (configif) #clock rate 64000
Certkiller 3 (configif) #no shutdown Certkiller 3 (configif) #exit Certkiller 3 (config) #router rip Certkiller 3 (configrouter) #network 192.168.13.0 Certkiller 3 (configrouter) #network 192.168.11.0 Certkiller 3 (configrouter) #
CtrlZ Certkiller 3 #copy runningconfigstartupconfig

QUESTION 300
Your task is to troubleshoot some issues with the existing Certkiller network.The previous network administrator tried to build a network by connecting three routers together, but the routing tables aren't being updated properly.
*There are three routers named Certkiller 1, Certkiller 2, and Certkiller 3 respectively.
* Certkiller 2 and Certkiller 3 are configured perfectly and completely operational.
*The entire networks falls within a single OSPF area
Your goal is to locate and fix this router configuration problem.
Current configuration:
Certkiller 1
E0: 192.168.33.1/24
S0: 192.168.100.5/30
Secret Password: Certkiller
Certkiller 2
E0: 192.168.34.1/24
S0: 192.168.100.10/30
S1: 192.168.100.6/30
Secret Password: Certkiller
Certkiller 3
E0: 192.168.35.1/24
S1: 192.168.100.9/30
Secret Password: Certkiller

Click on the picture of host connected to a router by a serial console cable.

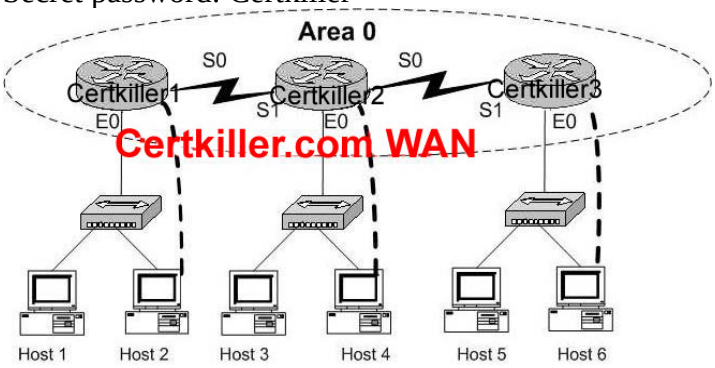


Answer:

Explanation:
Certkiller 1#config t
Certkiller 1(config)#no router ospf 2
Certkiller 1(config)#^Z
Certkiller 1#show ip ospf
Certkiller 1#config t
Certkiller 1(config)#router ospf 2
Certkiller 1(config)#network 192.168.33.0 0.0.0.255 area 0
Certkiller 1(config)#network 192.168.100.4 0.0.0.3 area 0
Certkiller 1(config)#^Z
Certkiller 1#show ip route
Certkiller 1#copy running startup

QUESTION 301
The Certkiller network consists of three routers as shown in the diagram below. All three routers are connected serially, and all links are up and running properly.The Certkiller network is using OSPF as the routing protocol, and all routers are contained in area 0.
Recently, some router configuration changes were made, and some routing issues have occurred as a result.
The router information and configurations are shown below:
*The three routers: Certkiller 1, Certkiller 2, and Certkiller 3 are connected by their serially and their links are good.
*The routing protocol is OSPF
*There's only one OSPF area (area 0)
Locate the configuration problem and reconfigure it correctly:
These are the current configurations:
Certkiller 1
E0: 192.168.3.1/24
S0: 172.16.10.5/30
Secret password: Certkiller
Certkiller 2
E0: 192.168.4.1/24
S0: 172.16.10.10/30
S1: 172.16.10.6/30

Secret password: Certkiller
Certkiller 3
E0: 192.168.5.1/24
S1: 172.16.10.9/30
Secret password: Certkiller



Answer:

Explanation:
Certkiller 2#config
Certkiller 2(config)#no router ospf 2
Certkiller 2(config)#router ospf 2
Certkiller 2(configrooter)# network 192.168.4.0 0.0.0.255 area 0
Certkiller 2(configrooter)# network 172.16.10.8 0.0.0.3 area 0
Certkiller 2(configrooter)# network 172.16.10.4 0.0.0.3 area 0
Certkiller 2(configrooter)#CtrlZ
Certkiller 2#copy running start

QUESTION 302
Network topology exhibit

A Cisco router Certkiller 2 and a Catalyst Switch Certkiller switch are connected as shown in the exhibit. The Certkiller .com technician is working on a computer that is connected to the management console of the switch. Inorderto configure the default gateway for the switch, the technician needs to learn the IP address of the attached router interface.
Which IOS command will provide this information in the absence of Layer 3 connectivity?
A.pingrouter_ip_address
B.pingswitchr_ip_address
C.show iprarp
D.showcdpneighbors detail
E.show ip neighbors
F.showdhcpconfig

Answer: D

Explanation:
Showcdpneighbor detail command can be issued on the router or the switch. This command shows the information
about all attached devices.

QUESTION 303
Network topology exhibit.

The Ethernet networks connect to router Certkiller 1 in the exhibit have been summarized for router Certkiller 2 as 192.1.144.0/20. Which of the following packet destination addresses will Certkiller 2 forward to Certkiller 1, according to this summary? Select two.
A.192.1.159.2
B.192.1.160.11
C.192.1.138.41
D.192.1.151.254
E.192.1.143.145
F.192.1.1.144

Answer: A, D

Explanation:
To be a part of the advertised summary route, the addresses should have first 20 bit the same as 192.1.144.0. Since
first 16 are the same for all, lets check just 4 bits from the 3rdoctet for all of them:
Summary route:1001
A: 1001
B:1010
C:1000
D:1001
E:1000
F:0000

QUESTION 304
Exhibit

The network shown in the exhibit is experiencing connectivity problems. Which of the following will correct

the problems? Select two.
A.Configure the gateway on Certkiller A as 10.1.1.1.
B.Configure the gateway on Certkiller B as 10.1.2.254.
C.Configure the IP address of Certkiller A as 10.1.2.2.
D.Configure the IP address of Certkiller B as 10.1.2.2.
E.Configure the masks on both hosts to be 255.255.255.224.
F.Configure the masks on both hosts to be 255.255.255.240.

Answer: B, D

QUESTION 305
You work as a network engineer at Certkiller .com. Certkiller users have noticed extremely slow network performance, intermittent connectivity, and loss of connections.After entering the show interfacescommand, you notice that the Ethernet interface is configured as 100 Mbps fullduplex
and that there is evidence of
late collisions.
What could be the cause of this problem?
A.duplex mismatch
B.a routing loop
C.trunking mode mismatch
D.improperly configured root bridge
E.improperly configured static VLAN

Answer: A

Explanation:
This environment will produce collisions, so the Ethernet interface should
be configured to use half duplex

QUESTION 305
The Certkiller router is running RIP as the routing protocol, and the IP routing table is displayed below:
Gateway of last resort is 10.1.2.2 to network 0.0.0.0
10.0.0.0/24 is subnetted, 2 subnets
R10.1.3.0 [120/1] via 10.1.2.2,00:00:00, Serial0/0
C10.1.2.0 is directly connected, Serial0/0
C10.1.5.0 is directly connected, Serial0/1
C10.1.6.0 is directly connected, FastEthernet0/0
R*0.0.0.0/0 [120/1] via 10.1.5.5,00:00:00, Serial0/1
Based on the output above, if an administrator pings host 10.1.8.5 from host 10.1.6.100, how will the router Certkiller Aprocess the ICMP packets?
A.The packets will be discarded.
B.The packets will be routed out the S0/0 interface.
C.The packets will be routed out the S0/1 interface.
D.The packets will be routed out the Fa0/0 interface.
E.The packets will be routed through the 10.1.2.2 gateway.

Answer: C

Explanation:
Since 10.1.8.5 is not located in the routing table, the default gateway will be used to forward the ICMP packet.The
default gateway is learned via RIP, with the next hop IP address of 10.1.5.5.This default gateway router lies on the
serial 0/1 interface.
Additional Info:
Gateways of last resort selected using theip defaultnetworkcommand are propagated differently depending on which
routing protocol is propagating the default route. For IGRP and EIGRP to propagate the route, the network specified
by theip defaultnetworkcommand must be known to IGRP or EIGRP. This means the network must be an IGRP or
EIGRPderived network in the routing table, or the static route used to generate the route to the network must be redistributed into IGRP or EIGRP, or advertised into these protocols using thenetworkcommand.
RIP advertises a route to 0.0.0.0 if a gateway of last resort is selected using theip defaultnetworkcommand. This network specified in theip defaultnetworkcommand need not be explicitly advertised under RIP. For example, note
that the gateway of last resort on this router was learned using the combination of theip routeand
ip defaultnetworkcommands. If you enable RIP on this router, RIP advertises a route to 0.0.0.0 (although not to the
Ethernet0 network because of splithorizon):
2513(config)#router rip
2513(configrouter)#
network 161.44.0.0
2513(configrouter)#
network 131.108.0.0
2513(configrouter)#^ Z
2513#
%SYS5CONFIG_ I: Configured from console by console
2513#debug ip rip
*Mar2 07:39:35.504: RIP: sending v1 update to 255.255.255.255 via Ethernet0 (161.44.192.1)
*Mar2 07:39:35.508: RIP: build update entries
*Mar2 07:39:35.508:network 131.108.0.0 metric 1
*Mar2 07:39:35.512: RIP: sending v1 update to 255.255.255.255 via Serial0 (131.108.99.1)
*Mar2 07:39:35.516: RIP: build update entries
*Mar2 07:39:35.520:subnet 0.0.0.0 metric 1
*Mar2 07:39:35.524:network 161.44.0.0 metric 1
ip route 0.0.0.00.0.0.0
Creating a static route to network 0.0.0.00.0.0.0is another way to set the gateway of last resort on a router. As with the
ip defaultnetworkcommand, using the static route to 0.0.0.0 is not dependent on any routing protocols. However,ip
routingmust be enabled on the router.

In earlier versions of RIP, the default route created using theip route 0.0.0.00.0.0.0was automatically advertised by
RIP routers. In Cisco IOS Software Release 12.0T and later, RIP does not advertise the default route if the route is not
learned via RIP. It may be necessary to redistribute the route into RIP.

QUESTION 306
The topology of the Certkiller network is displayed below, along with the routing table of the Certkiller 1 router:


```
Certkiller1# show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is 172.19.22.2 to network 0.0.0.0

C    172.17.22.0 is directly connected, FastEthernet0/0
C    172.18.22.0 is directly connected, Serial0/0
S*   0.0.0.0/0 [1/0] via 172.19.22.2
```

172.17.22.0172.31.5.0
Changes to the Certkiller network were made, and now users on the Certkiller 3 LAN are not able to connect to the Certkiller 4 LAN.Based on the information above, what could be the reason for this?
A.TheFastEthernetinterface is disabled.
B.The neighbor relationship table is not updated.
C.A static route is configured incorrectly.
D.The routing table on Certkiller 1 is not updated.
E.IP routing is not enabled.

Answer: C

Explanation:
On the bottom line of the command output for 'show ip route' you can see that there is an asterisk by the letter S. The S
stands for static route, and the static route is incorrectly configured.
Incorrect Answers:
A.If this were true, then the users on the LAN would be unable to connect to anything outside of their own network.
B.It appears that only a single static route is being used on the Certkiller 1 router.Neighbors do not need to be established for static routes.
D.The routing table consists of a single static route, which is configured incorrectly.The routing tables do not become
updated dynamically when static routes are used.
E.This is not true, as a static route has been configured.

QUESTION 307
A point to point leased line connecting routers Certkiller 1 and Certkiller 2 is installed as shown below:

The two serially connected routers can't communicate.Can you identify the fault on router Certkiller 2?
A.Link reliability is insufficient
B.IPCP is not open
C.Incorrect subnet mask
D.Incompatible encapsulation
E.Bandwidth allocation is too low
F.Incomplete IP address

Answer: D

Explanation:
HDLC and PPP configuration is straightforward. You just need to be sure to configure the same WAN datalink protocol on each end of the serial link. Otherwise, the routers will misinterpret the incoming frames, because each WAN
data-link protocol uses a different frame format. The routers must match at each end of the private leased line link.
Reference: CCNA Self Study CCNA ICND exam certification Guide (Cisco Press, ISBN 158720083X) Page 310.

QUESTION 308
What kind of message does aPINGsend out to test connectivity?
A.ICMP echo request
B.Information interrupt request
C.Timestamp reply
D.Source quench
E.None of the above

Answer: A

Explanation:
The ping command sends an ICMP echo request packet to the stated destination address. The TCP/IP software at the
destination then replies to the ping echo request packet with a similar packet, called the ICMP echo reply.
Reference:CCNA SelfStudy CCNA ICND exam certification Guide (Cisco Press, ISBN 158720083X) Page 146

QUESTION 309
The relevant configuration files for the Certkiller 1 and Certkiller 2 routers are displayed below:
Certkiller 1# show runningconfig Certkiller 2#

show runningconfig
<some output text omitted><some output text omitted>
enable passwordciscoenable passwordcisco
!
hostname Certkiller 1hostname Certkiller 2
username Certkiller 2 passwordciscousername Certkiller 1 password cisco1
!!
interface serial 0/0interface serial 0/0
ip address 10.0.8.1 255.255.248.0ip address 10.0.15.2 255.255.248.0
encapsulation pppencapsulation ppp
ppp authentication chapppp authentication chap
With due consideration to the command outputs, which of the following reasons would you attribute the connectivity problem between the two routers?
A.The authentication needs to be changed to PAP for both routers.
B.The serial IP addresses of routers are not on the same subnet.
C.The username/password combination is incorrectly configured.
D.The router names are incorrectly configured.

Answer: C

Explanation:
When configuring for CHAP authentication, you must enters the other router's user name and password. In this case on
router Certkiller 2 has entered incorrect router Certkiller 1's password, witch is "cisco1" (it must be "cisco"). As a result
CHAP authentication will fail, therefore the connection establishment between the routers will be refused.
Reference:CCNA SelfStudy CCNA ICNDExam Certification GuideChapter 9 page 315ISBN: 158720083x
Incorrect Answers:
A.Either PAP or CHAP can be used for these routers.
B.Although this appears to be true at first glance, the subnet mask is 255.255.248.0, and the IP addresses on each side
of the link are indeed on the same subnet.
D.The hostnames are configured correctly, but the passwords do not match.

QUESTION 310
There is a connectivity problem between the serial 0/0 interface of router Certkiller 1 and the serial 0/0 interface of Certkiller 2.A leased line point to point circuit is installed between these two routers.The output from the "show interface serial 0/0" command is displayed below for each of these routers:
Certkiller 1:
Serial0/0 is up, line protocol is down
Hardware is HD64570
Internet address is 210.93.105.1/24
MTU 1500 bytes, BW 1544Kbit, DLY 20000usec,
reliability 255/255,txload1/255,rxload1/255
Encapsulation HDLC, loopback not set
Keepaliveset (10 sec)

Certkiller 2:
Serial0/0 is up, line protocol is down
Hardware is HD64570
Internet address is 210.93.105.2/24
MTU 1500 bytes, BW 1544Kbit, DLY 20000usec,
reliability 255/255,txload1/255,rxload1/255
Encapsulation PPP, loopback not set
Keepaliveset (10 sec)
From your observations of the above exhibit, what is the underlying cause of the problem?
A. The loopback is not set.
B.The serial cable is faulty.
C.The subnet mask is not configured properly.
D.The IP address is not configured properly.
E.The Layer 2 frame types are not compatible.
F.Thekeepalivesetting is not configured properly.

Answer: E

Explanation:
If you see that the line is up but the protocol is down, as just above, you are experiencing a clocking (keepalive) or
framing problem. Check thekeepaliveson both ends to make sure that they match, that the clock rate is set if needed,
and thatthe encapsulation type is the same on both ends. This up/down status would be considered a Data Link Layer
(Layer 2) problem.In this specific case, one end of the link is set to PPP encapsulation, and the other end is using
HDLC, which is the Cisco proprietary method.Both sides of the connection must be using the same protocol.

QUESTION 311
The Certkiller network consists of theHolyokeandChicopeelocations as shown below:

Users on theHolyokerouter cannot get access to the intranet server attached to interface E0 of theChicopee router. After investigating you discover that the routing table of theHolyokerouter shows that an entry for theChicopeeE0 network is missing.
Which of the command lines below will properly configure theHolyokerouter to allow the users access to the intranet server's network?
A.Holyoke(config)# ip hostChicopee201.73.127.2

B.Holyoke(config)# ip network 202.18.38.0
C.Holyoke(config)# ip network 202.18.18.0 255.255.255.0
D.Holyoke(config)# ip hostChicopee201.73.127.0 255.255.255.0
E.Holyoke(config)# ip route 202.18.18.0 255.255.255.0 201.73.127.2
F.Holyoke(config)# ip route 201.73.127.0 255.255.255.0 202.18.18.0

Answer: E

Explanation:
We need to add a route for the 202.18.18.0/24 network.We can do this with the ip route command.The syntax is: ip
route <network> <mask> <gateway>.

QUESTION 312
While logged into a router you manually shut down the serial 0 interface using the "shutdown" interface configuration command.You then issue the "show interface serial 0" command in exec mode.What could you expect the status of the serial 0 interface to be?
A.Serial 0 is up, line protocol is up
B.Serial 0 is up, line protocol is down
C.Serial 0 is down, line protocol is down
D.Serial 0 is down, line protocol is up
E.Serial 0 is administratively down, line protocol is down
F.Serial 0 is administratively down, line protocol is up

Answer: E

Explanation:
To bring down an interface for administrative reasons and, as a side effect, remove the connected router from the
routing table, you can use the shutdown interface subcommand.
To enable the interface back up, issue the "no shutdown" configuration command.
Incorrect Answers:
A.This is the status of a fully operational interface.
B, C.These are the results of line problems or configuration errors.
D, F.These two interface conditions should never be seen.

QUESTION 313
While troubleshooting a network connectivity issue, you suspect that a router may be missing a route, or may be receiving bad routing information to a destination.What command should you issue to view the route that the router will use to reach a given destination?
A.ping
B.trace
C.show ip route
D.show interface
E.showcdpneighbors

Answer: C

Explanation:
To view the IP routing table, issue the "show ip route" command.This can be used to verify a route to a destination.

QUESTION 314
You are the new system administrator at Certkiller .com and have just installed a brand new Cisco router to the Certkiller network. After configuring the router, you try to ping the directly connected serial port of the neighboring router, which was unsuccessful.You then entered the command, 'show runningconfig'and noticed the phrase 'shutdown'describing the serial interface. If you typed in the command 'show interface s0'what output would you see?

A. Serial 0 is up, line protocol is down
B. Serial 0 is down, line protocol is down
C. Serial 0 is down, line protocol is up
D. Serial 0 is administratively down, line protocol is down
E. Serial 0 is administratively down, line protocol is up
F. Serial 0 is administratively up, line protocol is down

Answer: D

Explanation:
If an interface is shutdown, it will show "administratively down and line protocol down"

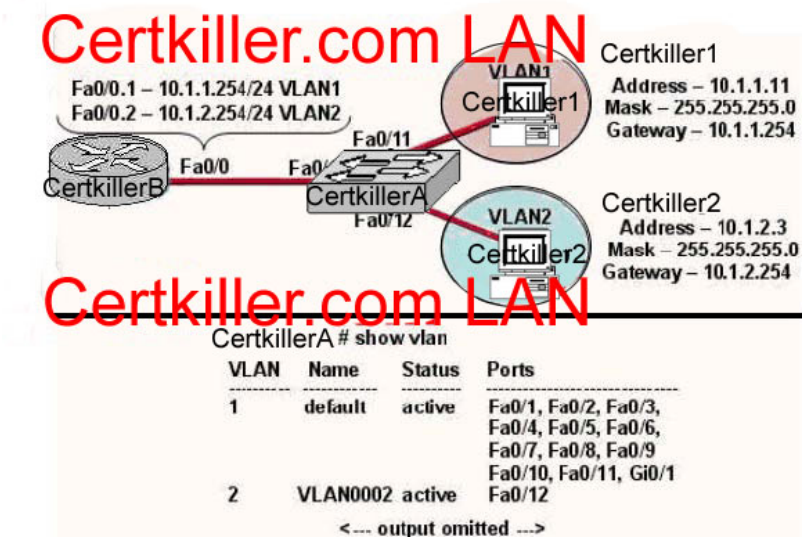
QUESTION 315
Three routers are connected together via serial lines as shown below:

Certkiller 1 issues a ping to Certkiller 2, but the ethernet0 interface on router Certkiller C is down.Based on this information, which two of the answer choices below are correct? (Select two answer choices)
A. Certkiller C will make use ofICMP to inform Certkiller 1, Certkiller A, and Certkiller B that Host 2 is unreachable.
B. Certkiller C will send a Destination Unreachable message type.
C. Certkiller C will make use of ICMP to inform Certkiller 1 that Certkiller 2 is unreachable.
D. Certkiller C will use ICMP to inform Certkiller B that Certkiller 2 is unreachable.
E. Certkiller C will issue a Router Selection message type.
F. Certkiller C will issue a Source Quench message type.

Answer: B, C
Explanation

ICMP is an errorreporting protocol for IP. When datagram delivery error occur,
ICMP reports these errors to the sender of the datagram.
When the e0 interface on Certkiller C goes down, Certkiller C uses ICMP to send a message back to Certkiller 1 indicating that the datagram could not be delivered.
ICMP does not correct the encountered network problem.
Certkiller C will not notify the intermediary devices of the delivery failure.Therefore, Certkiller C will not send ICMP
messages to Certkiller B.Datagramscontain only source and destination IP addresses, they do not contain information
about all the intermediary devices.
The reporting device (Certkiller C) has only the sender's IP address with which to communicate.Although Certkiller A
and B are not notified directly, they might become aware of the down interface on Certkiller C.However, disseminating
this information to neighbor routers is not the function of ICMP.ICMP reports on the status of the delivered packet to
the sender, its function is not to propagate informationabout network changes.

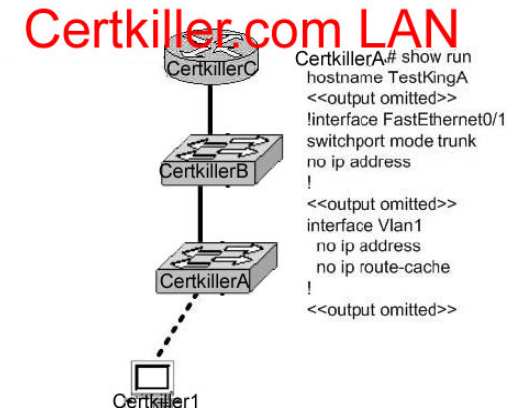
QUESTION 316
Exhibit


Certkiller.com LAN
Fa0/0.1 – 10.1.1.254/24 VLAN1
Fa0/0.2 – 10.1.2.254/24 VLAN2
Fa0/0
Fa0/11
CertkillerB
CertkillerA
Fa0/12
VLAN1
Certkiller1
Certkiller1
Address – 10.1.1.11
Mask – 255.255.255.0
Gateway – 10.1.1.254
VLAN2
Certkiller2
Certkiller2
Address – 10.1.2.3
Mask – 255.255.255.0
Gateway – 10.1.2.254
Certkiller.com LAN
CertkillerA # show vlan
VLAN Name Status Ports
1 default active Fa0/1, Fa0/2, Fa0/3, Fa0/4, Fa0/5, Fa0/6, Fa0/7, Fa0/8, Fa0/9 Fa0/10, Fa0/11, Gi0/1
2 VLAN0002 active Fa0/12
<--- output omitted --->
Study the exhibit: the topology and the partial switch command output.
Theinternetworkshown in the exhibit is experiencing connectivity problems. Host Certkiller 1 is unable to ping Host Certkiller 2.
What needs to be done to enable these hosts to ping each other?
A.The gateway on Host Certkiller 1 needs to be changed.
B.The IP address on Host Certkiller 2 needs to be reconfigured.
C.VLAN2 must be named.
D.The Fa0/1 interface on the Certkiller A switch must be configured as a trunk port.
E.Switch port Fa0/1 must be moved to a different VLAN.

Answer: D

Explanation:
Interface FA0/1 should be in any case configured as a trunk port so that a router could switch packets between the
VLANs. The IP addresses are ok.

QUESTION 317
Exhibit



Study the exhibit. Host Certkiller 1 is consoled into Switch Certkiller
A. Telnet connections and pings run from
the command prompt on Switch Certkiller A fail.
Which of the following could cause this problem?
A.Switch Certkiller A is not directly connected to router Certkiller C.
B.Switch Certkiller A does not have a default gateway assigned.
C.Switch Certkiller A does not have a CDP entry for Switch Certkiller B or Router Certkiller C.
D.Switch Certkiller A does not have an IP address.
E.Port 1 on Switch Certkiller A should be an access port rather than a trunk port.

Answer: B, D
For ping and Telnet the switch should be configured with the IP address and the default gateway. IP is used for administrative purposes.

QUESTION 318
Which IOS user EXEC command will allow a network technician to determine which router in the path to an unreachable network host should be examined more closely for the cause of the network failure?
A. Certkiller B>telnet
B. Certkiller B >ping
C. Certkiller B >trace
D. Certkiller B >show ip route
E. Certkiller B >show interface
F. Certkiller B >showcdpneighbors

Answer: C

Explanation:
This can perform the trace command. It sends the ping packets to each of the routers on the way to the receiver.

The
router which doesn't respond will be a potential failure place in this consecution.

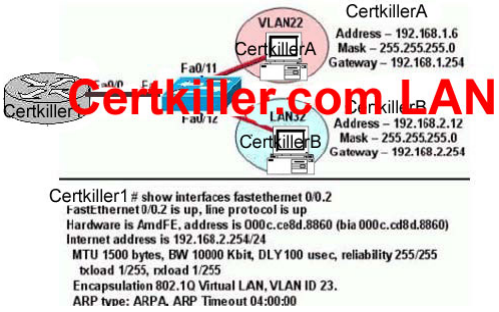
QUESTION 319
Exhibit

What is the meaning of the output of theshowcdpneighborscommand in the exhibit?

A. The Certkiller 2 router has a route to the Certkiller 1 router using the Serial 0/1 interface. The route can be directly
connected or remote.
B.The Certkiller 1 switch directly connects to the Certkiller 2 router using the Serial 0/1 interface on both Cisco devices.
C.The Certkiller 2 device is a Cisco router, and it connects using the Serial 0/1 interface to the Certkiller 1 Cisco router's
Serial 0/1 interface.
D.The Certkiller 2 device is a non Cisco device that connects to a Cisco router using the Serial 0/1 interface on both
devices.

Answer: C

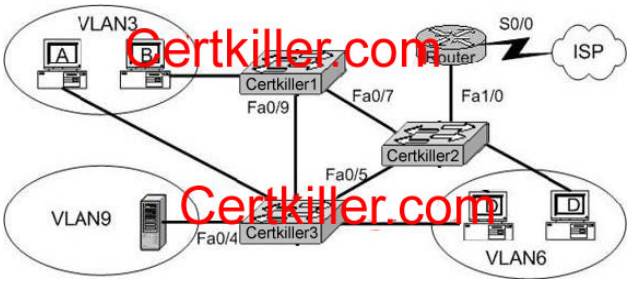
QUESTION 320
Exhibit



Host Certkiller B in the diagram is experiencing connectivity problems. Testing reveals that it cannot ping the default gateway.
Based on the information shown in the exhibit, what is the problem?
A.The IP address of Certkiller B is on a different subnet than the default gateway.
B.The Fa0/1 interface on the switch is administratively shutdown.
C.The switch is connected to the wrong interface on the Certkiller 1 router.
D.TheFastEthernetinterface on the Certkiller router is not configured for trunking.
E.TheFastethernet0/0.2intefaceon the Certkiller 1 router is configured for the wrong VLAN.
F.TheFastEthernetinterface of the Certkiller 1 router is configured with the wrong Ethernet encapsulation.

Answer: E

QUESTION 321
Exhibit:



A technician is investigating a problem with the exhibited network. These symptoms have been observed:
1.None of the user hosts can access the Internet.
2.None of the user hosts can access the server in VLAN 9.
3.Host A can ping Host B.
4.Host A CANNOT ping Host C or Host D.
5.Host C can ping Host D.
What could cause these symptoms?
A.Interface S0/0 on the router is down.
B.Interface Fa1/0 on the router is down.
C.Interface Fa0/5 on Certkiller 3 is down.
D. Certkiller 1 is turned off.
E. Certkiller 3 is turned off.

Answer: B

Explanation:
Choice B is correct because a Router is used for communication between different VLANs and it is stated that none of
the hosts can access the server in VLAN 9 it means that there is no connection of the network with router so FA1/0 is
down.
Choice C is wrong because Host C can ping Host D so FA0/5 cannot be down.
Choice D and E are wrong because Host A can Ping Host B it means that theswitch Certkiller 1 and switch Certkiller 3
are both on.

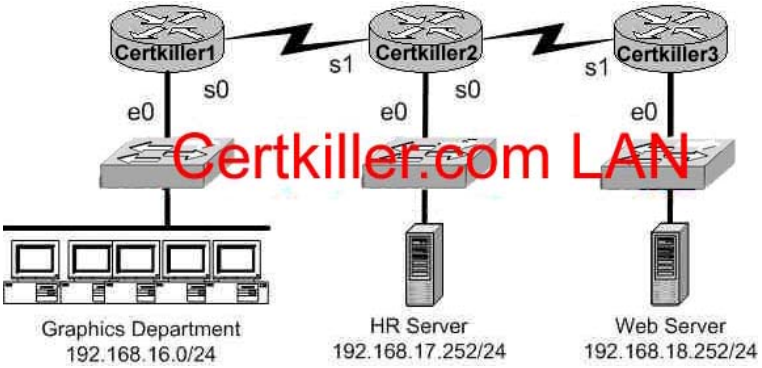
QUESTION 322
You are the network administrator at Certkiller . The Certkiller network is shown in the following exhibit:

You use the ip access group 101 in command to apply the following access control list on the e0 interface of router CK1 .
accesslist 101 denytcp5.1.1.10 0.0.0.0 5.1.3.0 0.0.0.255eqtelnet
accesslist 101 permit anyany
Which of the following will be blocked? (Choose two.)
A.Telnet sessions from host A to host 5.1.1.10
B.Telnet sessions from host A to host 5.1.3.10
C.Telnet sessions from host B to host 5.1.2.10
D.Telnet sessions from host B to host 5.1.3.8
E.Telnet sessions from host C to host 5.1.3.10
F.Telnet sessions from host F to host 5.1.1.10

Answer: D, F

Explanation:
All the telnet sessions from host B to network 5.1.3.0/24 will be denied.In addition, all telnet traffic to host B from the
5.1.3.0/24 network will not work, because the return telnet traffic will be denied.

QUESTION 323
The Certkiller network consists of Cisco routers and switches as shown below:



Your goal is to prevent Telnet traffic originating from the Graphics Department to reach the HR server. However, you want to allow Telnet traffic to other destinations.To accomplish this, you configure the following access control list:
accesslist 101 denytcpanyanyeq23
permit ip any any
On which router, in what direction, and which interface, should the access list be placed to most efficiently implement the above list?(Select three options)
A. Certkiller 1
B. Certkiller 2
C.out
D.in
E.serial 0
F.ethernet0

Answer: B, C, F
Access list should be placed as shown below:

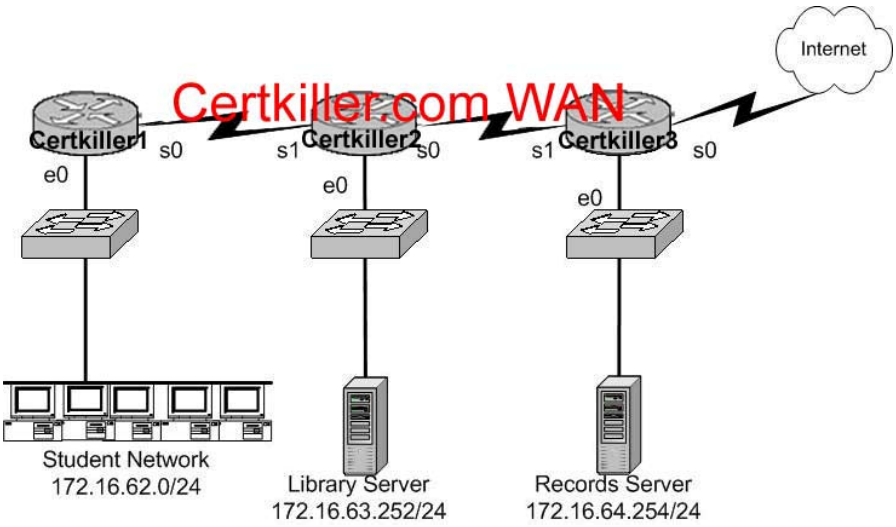
B Certkiller 2
C out
F Ethernet 0 interface
This answer combination will allow telnet traffic to other destinations.
Incorrect
Answer:
A, D, F this will deny all telnet traffic. We wish to only deny telnet traffic to the HR server.

QUESTION 324
You are a technician at Certkiller . Your newly appointed Certkiller trainee wants to know what the characteristics of named access list are.
What would your reply be? (Choose all that apply.)
A.You can delete individual statements in a named access list.
B.Named access lists require a numbered range from 1000 to 1099.
C.Named access lists must be specified as standard or extended.
D.You can use theip accesslistcommand to create named access lists.
E.You cannot delete individual statements in a named access list.
F.You can use theip namegroupcommand to apply named access lists.

Answer: A, C, D

Explanation:
Named access lists have two advantages over numbered access lists: the first one being that a name is easier to remember and the second being the fact that you can delete individual statements in a named access list. That makes A
correct.
When you create a named access list you use the ip accesslist
command, and you have to specify whether it's standard
or extended (since there are no numbers). So C and D are both correct. An example from the textbook is the command, "ip accesslist extended Barney"
Incorrect Answers:
B.Named access lists don't require a number range from 1000 to 1099 so B is incorrect.
E.Answer choice E is not true.
F.This is incorrect because the command ip namegroup
is absolutely unnecessary.
Reference:CCNA SelfStudy CCNA ICND exam certification Guide (Cisco Press, ISBN 158720083X) Pages 443-445

QUESTION 325
Study the Exhibit below carefully:



To protect the records server, a named access list calledrecords blockhas been employed to prevent student and Internet access to the records.This access list was applied to the e0 interface of the Certkiller 3 router in the outbound direction.
Which of the following conditions should the access list contain to meet these requirements?
(Select two options.)
A.permit 172.16.64.252 0.0.0.0 172.16.0.0 0.0.255.255
B.permit 172.16.0.0 0.0.255.255 172.16.64.252 0.0.0.0
C.deny 172.16.64.252 0.0.0.0 172.16.62.0 0.0.0.255
D.deny 172.16.62.0 0.0.0.255 172.16.64.252 0.0.0.0
E.deny 172.16.64.252 0.0.0.0 any
F.permit anyany

Answer: B, D
Answer choice B and D together will specifically deny the students and the internet from accessing the Records Server,
while still allowing access to the Library Server.It is important to note that the rules in any access list are consulted in
order.Because of this, the actual access list used in this case would need to have choice D first, and then choice B.If this
was not done, then traffic coming from the students would be first allowed, before the rule denying them was consulted.
The rule to prevent traffic from the Internet to the records server is handled by the implicit deny any rule.

QUESTION 326
After attempting to telnet into a router, you are denied and you receive the error message "password required, but none set."What configuration changes will allow telnet access into this router?
A.router(config)# line con 0
router(configline)# password welcome
router(configline)# login
A.router(config)# line aux 0 4
router(configline)# password welcome
router(configline)# login

A.router(config)# line vty 0 4
router(configline)# password welcome
router(configline)# login
A.router(config)# line tty0 4
router(configline)# password welcome
router(configline)# enable login

Answer: C

Explanation:
Several concurrent Telnet connections to a router are allowed. Theline vty 0 4command signifies that this configuration
applies tovtys(virtual teletypes/terminals) 0 through 4.
Reference:
CCNA SelfStudy CCNA INTRO exam certification Guide (Cisco Press, ISBN 1587200945) page 178.
Incorrect Answers:
A.This will prompt users connecting via a console cable for a password, and then allow access.
B.This will configure access via the aux port.
D.Routers do not have TTY access.

QUESTION 327
While attempting to gain access into a router remotely, you issue the telnet command as shown below:

Based on the information above, which set of commands will correct this problem?
A.ACCESS1(config)# line console 0
ACCESS1(configline)# passwordcisco
B.Remote27(config)# line console 0
Remote27(configline)# login
Remote27(configline)# passwordcisco
C.Remote27(config)# line vty 0 4
Remote27(configline)# login
Remote27(configline)# passwordcisco
D.ACCESS1(config)# line vty 0 4
ACCESS1(configline)# login
ACCESS2(configline)# passwordcisco
E.ACCESS1(config)# enable passwordcisco
F.Remote27(config)# enable passwordcisco

Answer: D

Explanation:
The vty lines on the remote router (the one you are trying to telnet into) needs to be configured to allow access.

Incorrect Answers:
A, B.The connection you need to establish isn't a console session but a virtual terminal session, so answer choices A
and B are incorrect.
C. This is thecorrctsyntax, but it is being placed on the wrong router.The access needs to be applied to the remote
router, not the local one.
E, F.Answer choices E and F are incorrect because they refer to the enable password, which is different then the virtual
terminal line passwords.

QUESTION 328
While troubleshooting a serial line problem, you enable ppp authentication debugging as shown below:
#debug ppp authentication
ppp serial1: Send CHAP challenge id=34 to remote
ppp serial1: CHAP challenge from P1R2
ppp serial1: CHAP response received from P1R2
ppp serial1: CHAP response id=34 received from P1R2
ppp serial1: Send CHAP success id=34 to remote
ppp serial1: Remote passed CHAP authentication
ppp serial1: Passed CHAP authentication
ppp serial1: Passed CHAP authentication with remote
Based on the command output above, what type of 'handshake' was used for PPP authentication?

A. oneway
B. twoway
C. threeway
D. fourway
E. no handshakes required during authentication
F.None of the above

Answer: C

Explanation:
As shown in the above output, CHAP is the mechanism that is being utilized here.CHAP uses a threeway handshake.
After the PPP link is established, the host sends a "challenge" message to the remote node. The remote node responds
with a value calculated using a oneway hash function. The host checks the response against its own calculation of the
expected hash value. if terminated.

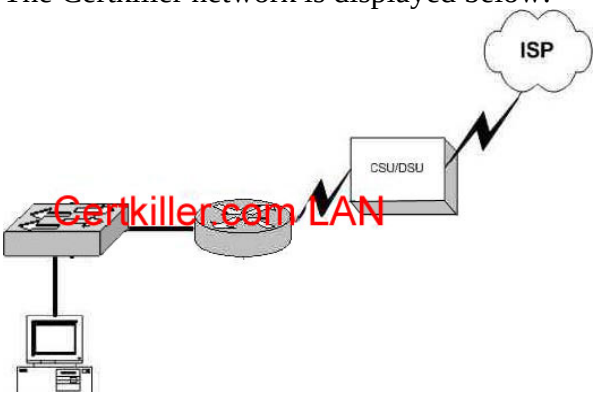
QUESTION 329
The Certkiller Central and Remote offices are configured as shown below:
Central# show runningconfigRemote# show runningconfig
<some output text omitted><some output text omitted>

interface Serial0/0interface Serial0/0
ip address 10.0.8.1 255.255.248.0ip address 10.0.15.2 255.255.248.0
encapsulation framerelayencapsulation frame relay
framerelay
map ip 10.0.15.2 200framerelay
map ip 10.0.8.1 100
!!
router riprouter rip
network 10.0.0.0network 10.0.0.0
The remote router can be successfully pinged from the central office but the remote users can't access the server at the central office.
Based on the output above, what do you suspect is the cause of this problem?
A.The Frame Relay PVC is down.
B.The IP addressing on the Central/Remote serial link is incorrect.
C.RIP routing information is not being forwarded.
D.Frame Relay inverseARP
is not properly configured.

Answer: C

Explanation: By looking to he output we can see that there are routes and routing protocol is RIP. The remote server
can be pinged, we know now that there is a physical connection (for that answer A + B can be eliminated.You don't
need the ' InverseARP for taking access not in this connection! and for that the only possible answer will be the C

QUESTION 330
The Certkiller network is displayed below:



You are brand new to the company, and you are in the process of discovering the Certkiller network's topology.You have been given a Visio of the network diagram above.Based on this information, what conclusion can you make about the type of Certkiller Internet connection?(Select all that apply)
A.They are using DSL
B.They are using frame relay
C.ISDN is being used
D.A dedicated T1 circuit is being used

E.They are using a wireless ISP
F.They are using a POTS dial up connection

Answer: B, D

Explanation:
The correct answer should be "Frame Relay" & "Dedicated T1".Both WAN technologies use CSU/DSU.These are the
only two choices that could be correct based on the fact that a CSU/DSU is being used.

Incorrect Answers:
A.DSL uses a modem instead of a CSU/DSU
C.ISDN uses a terminal adapter/NT
E, F.CSU/DSU'sare not used in wireless and dial up connections.

QUESTION 331
You are trying to bring up a new Certkiller location onto your existing frame relay network.The new location is using anAdtranrouter and you are having difficulties getting the site to connect via frame to your Cisco HQ router.What is the most likely cause of the problem?
A.Mismatched LMI types.
B.Incompatible encapsulation types.
C.Mismatching IP addresses.
D.Incorrect DLCI.
E.None of the above

Answer: B

Explanation:
LMI does have to be the same on both "ends", but when you're talking about LMI, one end is your local router and the
other end is the carrier's frame relay switch. The two routers can use different LMI types as long as the ports on the
frame relay switch use the correct LMI type.Encapsulation also has to be the same between both ends, but now we're
talking about the "ends" being the two routers. Cisco defaults to a proprietary frame relay encapsulation. To interoperate
with other vendors, you must use "encapframerelayietf". This is a common problem in a multivendorenviornment.

QUESTION 332
The Certkiller 1 and Certkiller 2 routers are connected together as shown below:

Users on the Certkiller 1 LAN are able to successfully access the resources on the Certkiller 2 network. However, users on Certkiller 1 are unable to telnet to the Certkiller 2 router.What do you suspect are the likely causes of this problem? (Select two answer choices)
A.PPP authentication configuration problem.
B.AmisconfiguredIP address or subnet mask
C.An access control list
D.A defective serial cable.
E.No clock rate on interface s0 on Certkiller 2
F.A missing vty password.

Answer: C, F

Explanation:
An ACL or a router configured without a VTY password will prevent users from being able to telnet into a router.
Incorrect Answers:
A, B, D, E.We know that the network is connected together and communicating back and forth because of the two
way CHAP authentication happening.In addition, the LAN users are able to get to each other with no problems. Therefore A is incorrect, B is incorrect, D is incorrect, and E is incorrect.

QUESTION 333
You are an administrator of a network that uses PPP for CHAP authentication over ever WAN link. What command would you enter to display the CHAP authentication as it occurs in real time?
A.show ppp authentication
B.debug PAP authentication
C.debug PPP authentication
D.show interface serial0
E.show CHAP authentication

Answer: C

Explanation:
Whenever you're asked to display a process in real time, you must use a debug command as show commands do not
display anything in real time.Debug PPP authentication will display the authentication process of a PPP line, including the
CHAP process.

Incorrect Answers:
A, D, E.This will not display the output in real time.
B.We wish to see information relating to CHAP, not PAP.
Reference:CCNA SelfStudy CCNA ICND exam certification Guide (Cisco Press, ISBN 158720083X) Page 314.

QUESTION 334
You are troubleshooting a WAN connection for Certkiller , and on the router you execute the, "debug ppp authentication" command, and view the following output:
#debug ppp authentication
PPP Serial1:Send CHAP challenge id=34 t remote
PPP Serial1:CHAP challenge from P1R2
PPP Serial1:CHAP response received form P1R2
PPP Serial1:CHAP response id=34 received from P1R2
PPP Serial1:Send CHAP success id=34 to remote
PPP Serial1:Remote passed CHAP authentication
PPP Serial1:Passed CHAP authentication
PPP Serial1:Passed CHAP authentication with remote
What kind of handshake was used for the PPP authentication?
A.oneway
B.twoway
C.threeway
D.No handshakes required during authentication
E.None of the above

Answer: C

Explanation:
CHAP uses a one-way hash algorithm, with input to the algorithm being a password and a shared random number. The
CHAP challenge states the random number; both routers are preconf
runs the hash algorithm using the justlearned random number and the secret password and sends the results back to the
router that sent the challenge. The router that sent the challenge runs the same algorithm using the random number (sent
across the link) and the password (not sent across the link). If the results match, the passwords must match.

QUESTION 335
Study the output script and the network topology exhibit below:
Certkiller 1# show runningconfig
<some output text omitted>
interface serial0/0
bandwidth 64
ip address 172.16.100.2 255.255.0.0
encapsulation frame-relay
frame-relay map ip 172.16.100.1 200 broadcast

The Router Certkiller 1 inHong Kongis connected to the router Certkiller 2 inTokyovia a new Frame Relay link.However, Certkiller 1 is unable to communicate with Certkiller 2.Based on the above output, what do you suspect as the underlying cause of this problem?
A.Bandwidth configuration incorrect
B.IP address not correct
C.Improper map statement
D.Improper LMI configuration

Answer: C

Explanation: From looking at the diagram you can see thatHong Kong's DLCI is 100, whileTokyo's DLCI is 200.
The Frame Relay map command is an interface configuration mode command that statically defines a mapping between
a network layer address and a DLCI.
Incorrect Answers:
A.The bandwidth statement is not used by the routers at a physical or data link layer, so this statement will not have any
impact on the function of the frame relay circuit.
B.We do not know what the IP address of theTokyoside is, so this can not be assumed.
D.The default LMI type is Cisco, and since both routers in this network appear to be Cisco's, we can assume that this is
acceptable.

QUESTION 336
While troubleshooting an issue with your frame relay network, you issue the "show framepvc" command as shown in the exhibit below:

```
PVC Statistics for interface Serial0 (Frame Relay DTE)

        Active   Inactive   Deleted   Static
Local      1         0         0        0
Switched   0         0         0        0
Unused     0         0         0        0

DLCI = 100, DLCI USAGE = LOCAL, PVC STATUS = ACTIVE, INTERFACE =
Serial0

  input pkts 1300          output pkts 1270         in bytes 22121000
  out bytes 21802000       dropped pkts 4           in FECN pkts 147
  in BECN pkts 192         out FECN pkts 259        out BECN pkts 214
  in DE pkts 0             out DE pkts 0
  out bcast pkts 107       out bcast bytes 19722
  pvc create time 00:25:50, last time pvc status changed 00:25:40
```

You're a network administrator at a Certkiller branch office, that's connected to the central headquarters by means of Frame Relay. You've been getting complaints that the connection has suddenly become slow, so you make the assumption that there's too much traffic going through the link.
Taking into consideration the above output from the 'show frame relaypvc
value is indicating that there's congestion between the local router and the corporate site?
A.in DE packets 0
B.last time PVC status changed00:25:40

C.in BECN packets 192
D.DLCI = 100
E.in FECN packets 147

Answer: C

Explanation:
BECN stands for Backward Explicit Congestion Notification.The BECN tells the transmitting device that the Frame
Relay network is congested and that it should "back off" to allow better throughput. BECN and FECN go hand to hand
together, but since the question specifically asks for what's indicating congestion between the local router and corporate
site, BECN is correct.

QUESTION 337
Inorderto troubleshoot an issue with the Certkiller frame relay network, you log into a remote router via a telnet session and issue the command "debug framerelaylmi".
After a long wait, you fail to see any output.
What could be the cause of this problem?
A.The IP addresses are configured incorrectly.
B.Frame Relay LMI messages not displayed in real time.
C.The administrator must issue theenable framerelaylmidebugcommand.
D.The administrator must issue theterminal monitorcommand.
E.Debug messages can only be received once through the console port.
F.The administrator must issue theshow framerelaylmivty 0 4command

Answer: D

Explanation:
Inorderto see any debugging output from a remote telnet session, the "terminal monitor" command will need to be
issued.By default, the network server sends the output from thedebugcommands to the console terminal. Sending
output to a terminal (virtual console) produces less overhead than sending it to the console. Use the privileged EXEC
commandterminal monitorto send output to a terminal.
Reference: http://www.cisco.com/univercd/cc/td/doc/product/software/ios112/dbook/dapple.htm

---

QUESTION 338
The configuration of the remote Certkiller 3 router is displayed below:
hostname Certkiller 3
!
enable password gatekeeper
!
isdn switchtype

basic5ess
!
!
username Central password Certkiller
interface BRI0
ip address 192.168.0.1 255.255.255.0
encapsulation ppp
dialer idletimeout
180
dialer map ip 192.168.0.2 name Remote 6662000
dialergroup no fairqueue
ppp authentication chap
!
router rip
network 192.168.0.2
!
no ip classless
ip route 192.168.10.0 255.255.0.0 192.168.0.2
ip route 192.168.20.0 255.255.0.0 192.168.0.2
!
dialerlist
1 protocol ip permit
The Certkiller 3 router is unable to call the remote site. What is the underlying cause of this problem?
A.The authentication password is missing from thedialer mapcommand.
B.The switchtype must be configured.
C.Routing updates are being blocked by the applied dialerlist.
D.The dialer list only permits one protocol.
E.The name in thedialermapmust match the name in theusernamecommand.
F.None of the above

Answer: E

Explanation:
The username in the above exhibit is "Central", while the dialermap name is "Remote". Since the names don't match the
call can't be completed.

QUESTION 339
You are attempting to troubleshoot a frame relay problem you are having within the Certkiller network, but you are unsure where to start.You begin by entering the command:
'Router# show frame-relay
Which three options will you be prompted for?(Select three answers choices)
A.dlci
B.clients
C.pvc
D.neighbors

E.lmi
F.map

Answer: C, E, F

Explanation:
The valid options for, 'show framerelay' are: show framerelay map,show framerelaylmi, & show frame relay pvc.
In the Cisco IOS, if you don't type in a command specific enough, it will prompt you to select an option.
Incorrect Answers:
A, B, D.Show framerelaydlci, show framerelay clients, and show framerelay neighbors are all invalid commands.

QUESTION 340
The relevant portion of two different Certkiller routers are displayed below:

Users on these two routers are experiencing connectivity problems and are unable to reach each other.After reviewing the command output, what is the most likely cause of the problem?
A.Incorrect IP addressing.
B.Frame relay is incorrectly configured.
C.IGRP is incorrectly configured.
D.Link state routing protocol is needed.
E.None of the above.

Answer: C

Explanation:
With IGRP, the process number, or autonomous system number, must match.In this case the router on the left is configured with IGRP 1, while the router on the left is configured with IGRP 2.This is resulting in the routers not
exchanging IGRP routing information with each other.
Incorrect Answers:
A.The IP addressing used here will work.Although IGRP does not support VLSM, all networks are configured using a
/24 subnet mask.
B.Since both routers are obviously Cisco (IGRP is Cisco proprietary) the frame relay configuration is not the problem.
Had one of the routers been nonCisco, then the keyword "ietf" should be placed at the end of the framerelay encapsulation command.
D.Link state routing is not required in this network.

QUESTION 341
By default, which of the following factors determines the spanning tree path cost?
A.It is the individual link cost based on latency
B.It is the sum of the costs based on bandwidth
C.It is the total hop count
D.It is dynamically determined based on load

Answer: B

Explanation: "The STP cost is an accumulated total path cost based on the available bandwidth of each of the links."
Reference: Sybex CCNA Study Guide 4thEdition (Page 323)
Note:
Apath costvalue is given to each port. The cost is typically based on a guidelineestablished as part of 802.1d. According to the original specification, cost is 1,000 Mbps (1 gigabit per second) divided by the bandwidth of the
segment connected to the port. Therefore, a 10 Mbps connection would have a cost of (1,000/10) 100.
To compensate for the speed of networks increasing beyond the gigabit range, the standard cost has been slightly
modified. The new cost values are:
BandwidthSTP Cost Value
4 Mbps250
10 Mbps100
16 Mbps62
45 Mbps39
100 Mbps19
155 Mbps14
622 Mbps6
1Gbps4
10Gbps2
You should also note that the path cost can be an arbitrary value assigned by the network administrator, instead of one
of the standard cost values.
Incorrect Answers:
A, D.The STP process does not take into account the latency or load of a link.STP does not recalculate the link costs
dynamically.
C.Hop counts are used by RIP routers to calculate the cost of a route to a destination.The STP process resides at layer
2 of the OSI model, where hop counts are not considered.

QUESTION 342
What is the purpose of the spanning tree algorithm in a switched LAN?
A.To provide a monitoring mechanism for networks in switched environments.
B.To manage VLANs across multiple switches.

C.To prevent switching loops in networks with redundant switched paths.
D.To segment a network into multiple collision domains.
E.To prevent routing loops in networks.

Answer: C

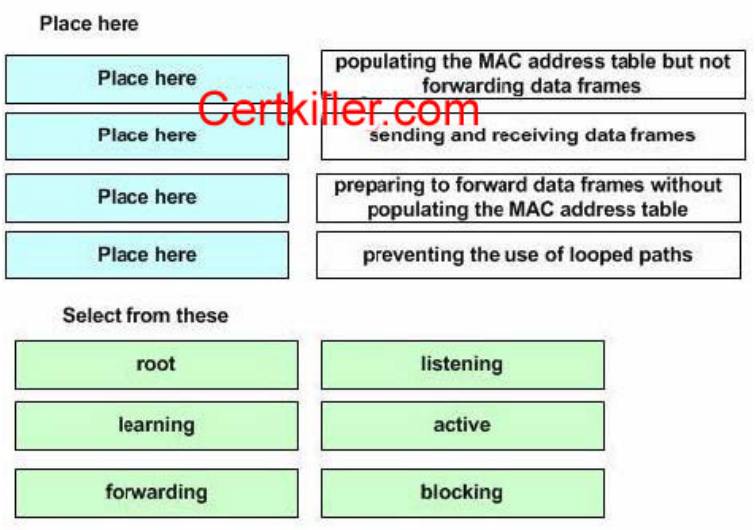
Explanation:
STP is used in LANs with redundant paths or routes to prevent loops in a layer 2 switched or bridged LAN.
Incorrect Answers:
A, B.The primary purpose of STP is to prevent loops, not for monitoring or management of switches or VLANs.
D.VLANs are used to segment a LAN into multiple collision domains, but the STP process alone does not do this.
E.Routers are used to prevent routing loops at layer 3 of the OSI model.STP operates at layer 2.

QUESTION 343
Which two of the following values does STP take into consideration when it elects the root bridge? (Select two answer choices)
A.The BPDU version number
B.The access layer bridge setting
C.The Bridge ID
D.The spanning treeupdate number
E.The bridge priority
F.The VLAN number

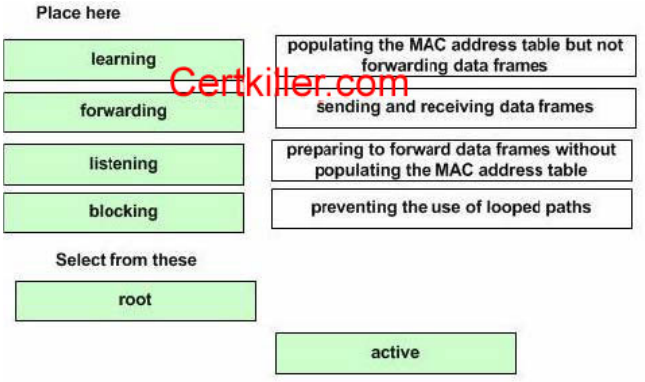
Answer: C, E

Explanation:
The bridges elect a root bridge based on the bridge IDs in theBPDUs
.The root bridge is the bridge with the lowest numeric value for the bridge ID. Because the two part bridge ID starts
with the priority value, essentially the bridge with the lowest priority becomes the root. For instance, if one bridge has
priority 100, and another bridge has priority 200, the bridge with priority 100 wins, regardless of what MAC address
was used to create the bridge IDor each bridge/switch.
Reference:CCNA SelfStudy CCNA ICND Exam Certification Guide (Cisco Press, ISBN 158720083X) Page 39

QUESTION 344
Match the Spanning Tree Protocol states from the bottom to the slot on the upper left that matches their corresponding function on the right.
(Not all the options are used.)



Answer:



Explanation:
The various STP states are shown below:
*Listening Listens to incoming Hello messages to ensure that there are no loops, but does not forward traffic or learn
MAC addresses on the interface.
*Learning learns MAC addresses and builds a filter table but does not forward frames.
*Forwarding Sends and receives all data on the bridged port.
*Blocking are used to prevent network loops.
Reference: CCNA Study guide Second Edition (Sybex, ToddLammle) page 82.

QUESTION 345
The spanning tree information from 4 switches on the Certkiller network is displayed below.
Despite their names, all four switches are on the same LAN.
Tampa#showspanning tree
Spanning tree 1 is executing the IEEE compatible Spanning Tree protocol
Bridge Identifier has priority 32768, address 0002.fd29.c505
Configured hello time 2, max age 20. forward delay 15
Miami#
showspanningtree

Spanning tree 1 is executing the IEEE compatible Spanning Tree protocol
Bridge Identifier has priority 16384, address 0002.fd29.c504
Configured hello time 2, max age 20, forward delay 15
London#
showspanningtree
Spanning tree 1 is executing the IEEE compatible Spanning Tree protocol
Bridge Identifier has priority 8192, address 0002.fd29.c503
Configured hello time 2,maxage20, forward delay 15
Cairo#
showspanningtree
Spanning tree 1 is executing the IEEE compatible Spanning Tree protocol
Bridge Identifier has priority 4096, address 0002.fd29.c502
Configured hello time 2,maxage20, forward delay 15
Based on the outputs of the above exhibit, which one of the switches is the spanning tree root bridge?
A.Miami
B.London
C.Tampa
D.Cairo

Answer: D

Explanation: Cairois the correct answer because it has the lowest Bridge priority.The default priority value is 32768
(same asTampa), and the bridge with the lowest priority will become the root bridge.
Aroot bridge
is chosen based on the results of the BPDU process between the switches. Initially, every switch considers itself the root
bridge. When a switch first powers up on the network, it sends out a BPDU with its own BID as the root BID. When
the other switches receive the BPDU, they compare the BID to the one they already have stored as the root BID. If the
new root BID has a lower value, they replace the saved one. But if the saved root BID is lower, a BPDU is sent to the
new switch with this BID as the root BID. When the new switch receives the BPDU, it realizes that it is not the root
bridge and replaces the root BID in its table with the one it just received.The result is that the switch that has the lowest
BID is elected by the other switches as the root bridge.

QUESTION 346
Which of the following are spanning tree port states? (Select three answer choices)
A.learning
B.spanning
C.listening
D.forwarding
E.initializing

F.filtering
G.permitting

Answer: A, C, D

Explanation:
There are 4 STP states that a bridge port can be in:Blocking, Listening, Learning, and Forwarding:

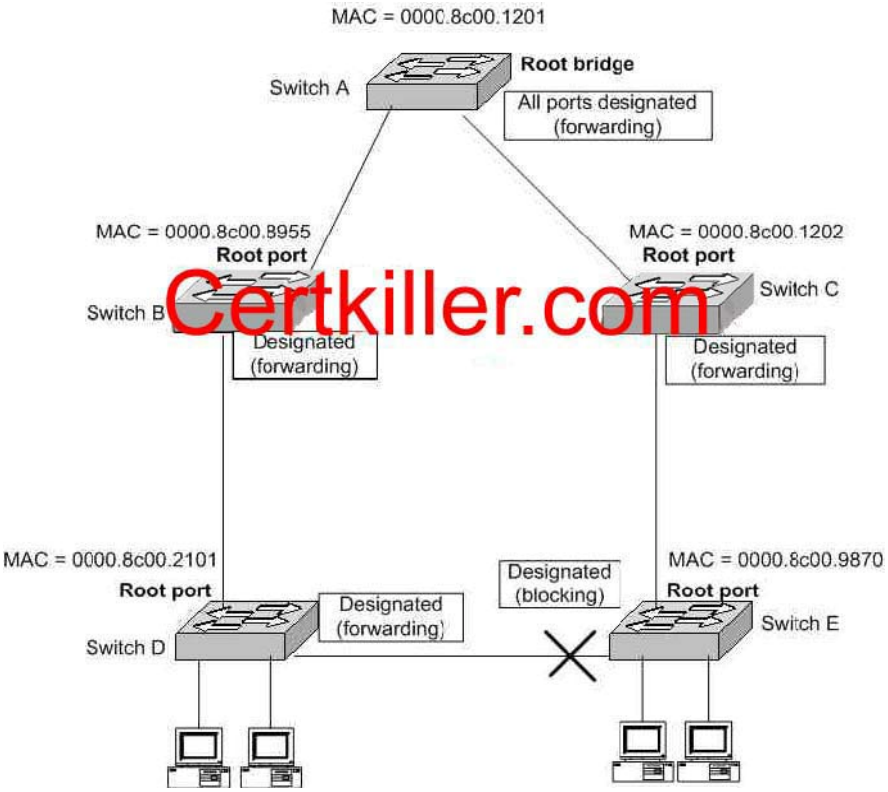
Spanning-Tree Intermediate States

State	Forwards Data Frames?	Learns MACs Based on Received Frames?	Transitory or Stable State?
Blocking	No	No	Stable
Listening	No	No	Transitory
Learning	No	Yes	Transitory
Forwarding	Yes	Yes	Stable

QUESTION 347
What are the switch and bridge port characteristics of a layer two spanningtree network that is fully converged?
A.All switch and bridge ports are in the forwarding state.
B.All switch and bridge ports are in the standby state.
C.All switch and bridge ports are assigned as either root or designated ports.
D.All switch and bridge ports are in either the forwarding or blocking state.
E.All switch and bridge are either blocking or looping.

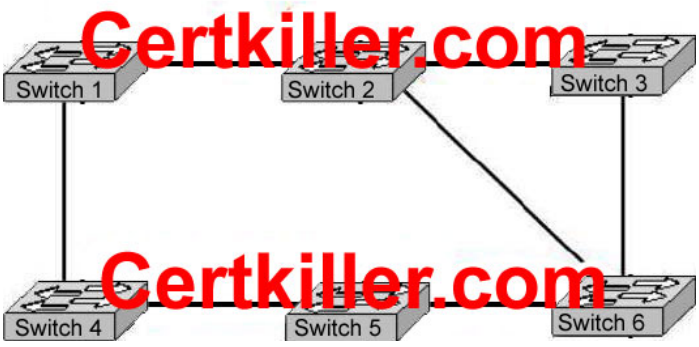
Answer: D

Explanation:
When a switch first comes up, it will be in the listening and learning states.This is needed so that the switch learns the
MAC addresses of the devices on the LAN, and to learn where any loops in the network may exist.After this initial
period of listening and learning, the ports will be forwarding to the hosts, or blocking certain ports that create a loop in
the network.An example of this is shown below:



In the above figure, after the network has converged, spanning tree protocol puts each port either in designated (Forwarding) or Nondesignated (Blocking) state. So, Choice D is correct.
If you get a converged spanningtree network, you have only two port states.Forwarding an Blocking.
Forwarding: all
traffic will be forwardedBlocking: all traffic to devices who will create a loop in a spanningtree network will be blocked. It is possible to getredundantespaths in big switched an routed networks.

QUESTION 348
The Certkiller LAN consists of 6 switches connected together as shown in the diagram below:



What is the name of the potential problem of this switch setup, and what protocol can prevents its occurrence. (Select only one answer choice)
A.routing loops, hold down timers
B.switching loops, split horizon
C.routing loops, split horizon
D.switching loops, VTP

E.routing loops, STP
F.switching loops, STP

Answer: F

Explanation: The spanningTree Protocol (STP) prevents loops from being formed when switches or bridges are interconnected via multiple paths. Spanning Tree Protocol implements the 802.1D IEEE algorithm by exchanging
BPDU messages with other switches to detect loops, and then removes the loop by shutting down selected bridge
interfaces. This algorithm guarantees that there is one and only one active path between two network devices.

QUESTION 349
In a switched LAN network, what is the Spanning Tree algorithm used for?
A.It is used to provide a mechanism for routing updates in switched environments.
B.It is used to prevent routing loops in networks with redundant routes.
C.It is used to prevent switching loops in networks with redundant switched routes.
D.It is used to manage, the addition, deletion, and naming of VLANs across multiple switches.
E.It is used to segment a network into multiple collision domains.
F.None of the above.
G.All of the above are functions of STP.

Answer: C

Explanation:
To avoid loops, all bridging devices, including switches, use STP. STP causes each interface on a bridging device to
settle into a blocking state or a forwarding state. Blocking means that the interface cannot forward or receive data
frames. Forwarding means that the interface can send and receive data frames. By having a correct subset of the interfaces blocked, a single currently active logical path will exist between each pair of LANs.STP resides at the data
link layer, so it is used to prevent loops within a switched network.
function of the mechanisms within a routing protocol.
Not B: Of course: to a SWITCH there are SWITCHING Loops. To a switch ROUTING Loops are impossible..
Reference:
CCNA SelfStudy CCNA INTRO exam certification Guide (Cisco Press, ISBN 1587200945) page 248.
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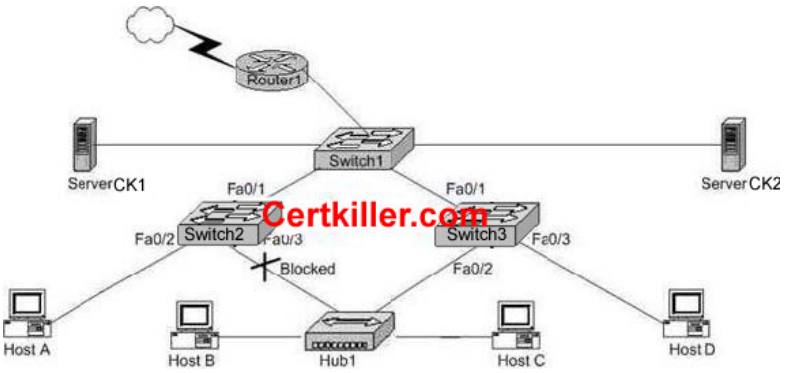
QUESTION 350
The Certkiller switched LAN is displayed in the network below:



In the network shown in the diagram, which ports on Switch2 are receivingBPDUs?
A.Fa0/1 only
B.Fa0/2 only
C.Fa0/3 only
D.Fa0/1 andFa0/2 only
E.Fa0/1 andFa0/3 only
F.All three ports

Answer: E

Explanation:
SpanningTree
Protocol (STP) prevents loops from being formed when switches or bridges are interconnected via multiple paths. SpanningTree Protocol implements the 802.1D IEEE algorithm by exchanging BPDU messages with
other switches to detect loops, and then removes the loop by shutting down selected bridge interfaces. This algorithm
guarantees that there is one and only one active path between two network devices.

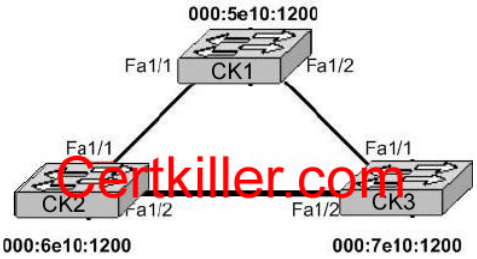
QUESTION 351
In which Spanning Tree states does a switch port learn MAC addresses? Select two.
A.blocking
B.listening
C.forwarding
D.learning
E.relaying

Answer: C, D

Explanation:
STP uses a couple of port states besides forwarding and blocking.
1.Listening Listens to incoming Hello messages to ensure that there are no loops, but does not forward traffic. This is
an interim state between blocking and forwarding.
2.Learning Still listens toBPDUs, plus learns MAC addresses from incoming frames. It does not forward traffic. This is
an interim state between blocking and forwarding.

3.Disabled Administratively down.
Reference: Cisco CCNA intro 640821

QUESTION 352
Exhibit:



Refer to the exhibit. All switches have the default STP configuration and all links are Fast Ethernet. Which port on which switch will Spanning Tree place in blocking mode?
A.Switch CK1 Port Fa1/1
B.Switch CK1 Port Fa1/2
C.Switch CK2 Port Fa1/2
D.Switch CK2 Port Fa1/1
E.Switch CK3 Port Fa1/1
F.Switch CK3 Port Fa1/2

Answer: F

Explanation: Switch CK3 Port FA 1/2
Switch CK1 will become the ROOTBRIDGEbecause it has the lowest MAC address.
Its both ports will become Designated ports so choice A and B are wrong.
Next Election will be of ROOT PORTS. Port FA1/1 of both the switches CK2 and CK3 will become ROOT ports
because they have minimum path cost to reach the root bridge.
So, choices D and E are also wrong.
Next Election will be of Designated Ports on the segment connecting CK2 and CK3 . CK2 has lower MAC address so,
its port FA1/2 will become designated port and FA1/2 of CK3 will be placed in a BLOCKING state to avoid switching
LOOPS.

QUESTION 353

Refer to the graphic. Two 2950 switches connect through ports Fa0/24 and a straightthrough cable. Based on the output of the showcdpneighbor command from both switches and the information given, what can be concluded?

A.Port Fa/24 on each switch must be configured in VLAN 1 inorderfor the switches to see neighbor information.

B.Port Fa0/24 on each switch must be configured as a trunk port inorderfor neighbor information to be received.

C.The switches are not cabled properly.

D.An IP address needs to be assigned to both switches.

E.VTP is incorrectly configured on switch CK1 .

Answer: C

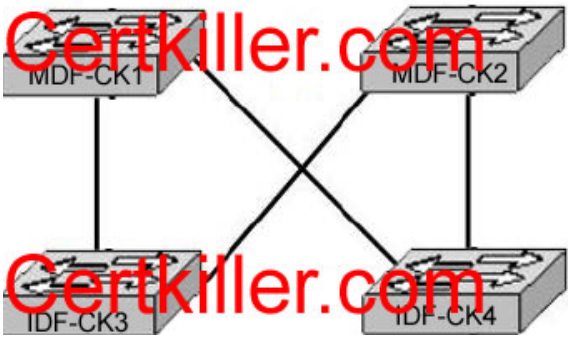
Explanation:

To connect 2 similar devices, we use crossover cables. In the scenario, two switches are connected with a straightthrough

cable, so there will be no communication between the switches. Choice C is correct.

QUESTION 354

Exhibit



The network shown in the exhibit was designed to provide reliability through redundancy. Both of the IDF switches, CK3 , and CK4 , are connected to both of the MDF switches, CK1 and CK2 . Which configuration scenario will provide a loopfree

switching environment?

A.Spanning Tree Protocol should be running on all switches.

B.Spanning Tree Protocol should be running on only the MDF switches CK1 and CK2 .

C.Spanning Tree Protocol should be running on only the IDF switches CK3 and CK4 .

D.Spanning Tree Protocol should be run only on the root bridge.

E.Spanning Tree Protocol is not needed in this network.

Answer: A

Explanation:
Spanning Tree Protocol (STP) prevents loops from being formed when switches or bridges are interconnected via
multiple paths. SpanningTree Protocol implements the 802.1D IEEE algorithm by exchanging BPDU messages with
other switches to detect loops, and then removes the loop by shutting down selected bridge interfaces. This algorithm
guarantees that there is one and only one active path between two network devices.
Reference:
http://www.cisco.com/en/US/tech/ CK3 89/ CK6 21/tsd_technology_support_protocol_home.html

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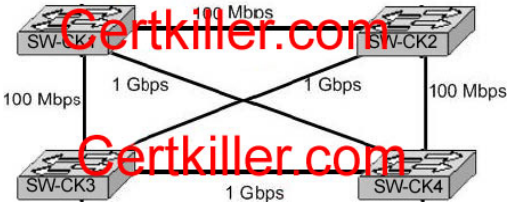
QUESTION 355
Exhibit:

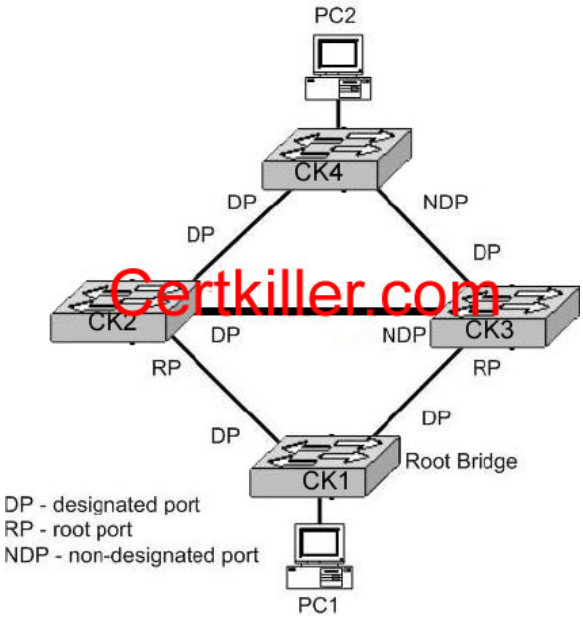


Refer to the exhibit. What is the purpose of the Spanning Tree Protocol that is operating in the exhibited switch topology?
A.To elect a particular switch as backup designated switch.
B.To have one active Layer 2 path through the switches network.
C.To select the best path to a remote destination that is on a different network.
D.To learn the MAC addresses of host attached to the switches network.
E.To distribute VLAN configuration information throughout the switched network.

Answer: B

Explanation:
Switches are connected in a way to provide fullmesh topology. So, a redundant path is provided in the case of a link or
switch failure.

QUESTION 356
Exhibit:



Refer to the exhibit. Based on the Spanning Tree Protocol port states shown, over which path will frames flow when set from PC1 to PC2?
A. CK1 CK3 CK4
B. CK1 CK2 CK4
C. CK1 CK2 CK3 CK4
D. CK1 CK3 CK2 CK4

Answer: B

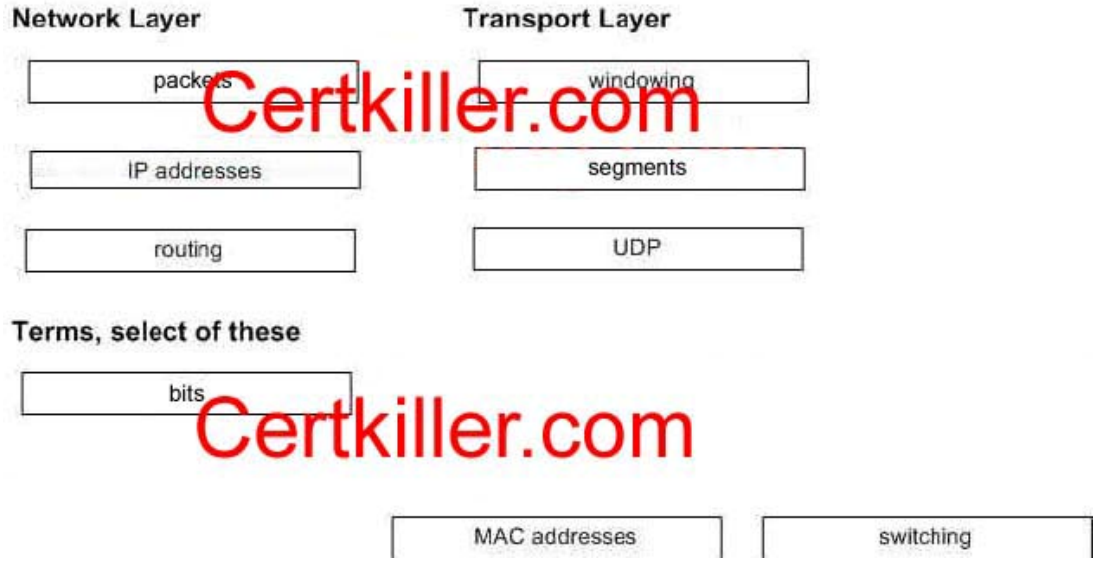
Explanation:
As shown in the diagram, port connecting CK3 to CK4 and CK2 to CK3 are nondesignated ports. It means that spanning
tree has blocked these ports temporarily so; f
CK1 to CK2 to CK4 through ROOT and DESIGNATED ports.

QUESTION 357
Drag and drop

Your boss at Certkiller.com asks you to match the terms with the appropriate OSI layer. Not all options are used

Answer:

Your boss at Certkiller.com asks you to match the terms with the appropriate OSI layer. Not all options are used



QUESTION 358

Which router IOS commands can be used to troubleshoot LAN connectivity problems? Select three

A.Ping
B.Tracert
C.Ipconfig
D.Show ip route
E.Winipcfg
F.Show interfaces

Answer: A, D, F

QUESTION 359
What is the purpose of Inverse ARP?
A.To map a known IP address to a MAC address
B.To map a known DLCI to a MAC address
C.To map a known MAC address to an IP address
D.To map a known DLCI address to a IP address
E.To map a known IP address to a SPID address
F.To map a known SPID address to a MAC address

Answer: D
Just as ARP resolves IP addresses to MAC addresses, Inverse ARP maps a known DLCI to an IP address.
Note: Do not mix up inverse ARP and reverse ARP.There is a Reverse ARP (RARP) for host machines that don't
know their IP address. RARP enables them to request their IP address from the gateway's ARP cache.

QUESTION 360
Which of the following protocols use both TCP and UDP ports?
A.FTP
B.SMTP
C.Telnet
D.DNS

Answer: D
FTP :TCPPort20 or 21
SMTP :TCPPort110
Telnet :TCPPort23
DNS : both TCP andUDPPort25

QUESTION 361
What is the maximum distance of 10BaseT?
A.100 meters
B. 100 yards
C. 200 meters
D. 200 yards

Answer: A

Explanation: The distance standards are in meters and 10BaseT has a distance restriction of 100 meters. If you go
further then that, you compromise data integrity.10BastT is the predominant cable type used in Ethernet networks.

QUESTION 362
Which one of the following is the most commonly used layer 2 network device?
A.Hub

B.Bridge
C.Switch
D.Router
E.Repeaters
F.None of the above

Answer: C

Explanation:
A switch segments the network and uses an ASIC for fast switching. Switches have become the more common of the
layer two devices, as they offer more features and benefits than bridges.
Incorrect Answers:
A, E.Hubs and repeaters operate at layer one.
B.Bridges have become somewhat obsolete, as switches have become more and more prevalent.
D.Routers operate at layers 3 and 4.

QUESTION 363
Which of the following can lead to the contribution of LAN traffic congestion? (Select four)
A.Too many hosts in a broadcast domain
B.Full duplex operation
C.Broadcast storms
D.Multicasting
E. Segmentation
F.Low bandwidth

Answer: A, C, D, F

Explanation:
Choice A is correct because the more hosts on a broadcast domain, the more traffic that is created.Choice Ccontributes
to congestion because broadcast storms can become very problematic, and lead to complete network saturation.
Multicasts are similar to broadcasts in their use on a LAN.Finally, if there is not enough bandwidth, traffic sessions can
time out.This leads to new transmissions and the resending of data, which can lead to more congestion.
Incorrect Answers:
B, E.Theseare incorrect because full duplex operation and segmented networks actually result in less congestion.

QUESTION 364
You have an Ethernet network.Which of the conditions below can lead to increased congestion on your network? (Select two answer choices)
A.The use of Full Duplex Mode.
B.The Creation of New Collision Domains.
C.The Creation of New Broadcast Domains.
D.The Addition of Hubs to the Network.

E.The use of switches in the Network.
F.The Amount of ARP or IPX SAP Traffic.

Answer: D, F

Explanation:
Hubs on their own don't create congestion, but the hosts that connect to them do.Generally, the addition of hubs means
additional hosts connected to the hubs, all within the same collision domain.Finally, as networks become larger, more
broadcast traffic such as ARP requests and IPX SAP packets get generated, which can lead to increased network congestion.
Incorrect Answers:
A.This is incorrect because the use of full duplex will increase the amount of bandwidth while eliminating collisions at the
same time.
B, C.These methods describe the use of segmentation and VLAN use, which will decrease traffic on the individual
segments.
E.This is incorrect because switches are the preferred method of reducing collision domains.

QUESTION 365
What Functions do a router perform in a network? (Choose two).
A.Packet Switching
B.Access Layer Security
C.Path Selection.
D.VLAN Membership Assignment.
E.Bridging between LAN segments.
F.Microsegmentationof Broadcast Domains.

Answer: A, C

Explanation: The primary function of an router are: Packet Switching and Path Selection

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QUESTION 366
Which of the following protocols utilize UDP as the layer 4 transport mechanism? (Choose all that apply)
A.TACACS
B.Telnet
C.SMTP
D.SNMP
E.HTTP
F.TFTP

Answer: D, F

Explanation:

SNMP and TFTP use UDP as the transport mechanism.Generally speaking, protocols that use the keywords "trivial" or
"simple" uses UDP, since connectionless, best effort delivery mechanism usually suffice.SNMP uses UDP port 161,
while TFTP uses UDP port 69.
Incorrect Answers:
A.TACACS uses TCP port 49
B.Telnet uses TCP port 23
C.SMTP uses TCP port 25
E.HTTP uses TCP port 80

QUESTION 367
With regard to theDHCP Discover message,which of the following are true? (Choose two.)
A.TheDHCP Discover message uses FFFFFFFFFF
as the Layer 2 destination address.
B.TheDHCP Discover message uses UDP as the transport layer protocol.
C.TheDHCP Discover message uses a special Layer 2 multicast address as the destination address.
D.TheDHCP Discover message uses TCP as the transport layer protocol.
E.TheDHCP Discover message does not use a Layer 2 destination address.
F.TheDHCP Discover message does not require a transport layer protocol.

Answer: A, B

Explanation:
DHCP uses UDP as its transport protocol.DHCP messages from a client to a server are sent to the DHCP server port
(UDP port 67), and DHCP messages from a server to a client are sent to the DHCP client port (UDP port 68).The
client broadcasts a DHCPDISCOVER message on its local physical subnet.The DHCPDISCOVER message may
include options that suggest values for the network address and lease duration.BOOTP relay agents may pass the
message on to DHCP servers not on the same physical subnet.
Each server may respond with a DHCPOFFER message that includes an available network address in the "ipaddr" field
(and other configuration parameters in DHCP options). Servers need not reserve the offered network address, although
the protocol will work more efficiently if the server avoids allocating the offered network address to another client. The
serverunicaststhe DHCPOFFER message to the client (using the DHCP/BOOTP relay agentif necessary) if possible, or
may broadcast the message to a broadcast address (preferably 255.255.255.255) on the client's subnet.Incorrect Answers:
C.DHCP messages are broadcast to the "all hosts" address.IP multicast addresses are not used.
D.UDP is used, not TCP.
E.Since DHCP is used so that a client can obtain an IP address, a layer two destination address must be used, as

the
layer 3 IP address does not yet exist on the client for the return traffic.
F.DHCP, along with nearly every other type of traffic, requires the use of a transport layer protocol.

QUESTION 368
Which of the following fields are contained within an IEEE Ethernet frame header?
A.source and destination MAC address
B.source MAC address and destination network address only
C.source and destination network address only
D.source network address and destination MAC address
E.source and destination MAC address and source and destination network address

Answer: A
Explanation
Ethernet versus IEEE 802.3
Twoframe formats can be used on Ethernet:
1.The standard issued in 1978 by Xerox Corporation, Intel Corporation and Digital Equipment Corporation, usually
calledEthernet(orDIXEthernet).
2.The international IEEE 802.3 standard, a more recently defined standard.
The difference between the two standards is in the use of one of the header fields, which contains a protocoltype number for Ethernet and the length of the data in the frame for IEEE 802.3.
As shown in the diagram above, the only address thatIEEE Ethernet frame headers contain are the source and destination MAC addresses.
Reference:http://www.auggy.mlnet.com/ibm/3376c28.html

QUESTION 369
What are the possible causes of congestion on a LAN? (Choose all that apply.)
A.A broadcast domain with too many hosts.
B.Full duplex operation.
C.Broadcast storms.
D.Multicasting.
E.Network Segmentation.
F.Low bandwidth.

Answer: A C D F

QUESTION 370
With regard to fullduplex Ethernet and halfduplex Ethernet, which of the following statements are true? (Choose all that apply.)
A.Fullduplex Ethernet consists of a shared broadcast domain, while halfduplex Ethernet consists of a private broadcast domain.
B.Fullduplex Ethernet is collision free, while halfduplex Ethernet is subject to collisions.
C.Fullduplex Ethernet provides higher throughput than halfduplex Ethernet.
D.Fullduplex Ethernet provides lower throughput than halfduplex Ethernet.
E.Fullduplex Ethernet consists of a shared collision domain, while halfduplex Ethernet consists of a private

collision
domain.

Answer: B C

Explanation:
A single device could not be sending a frame and receiving a frame at the same time because it would mean that a
collision was occurring. So, devices simply chose not to send a frame while receiving a frame. That logic is called
half duplex logic.
Ethernet switches allow multiple frames to be sent over different ports at the same time. Additionally, if only one device
is connected to a switch port, there is never a possibility that a collision could occur. So, LAN switches with only one
device cabled to each port of the switch allow the use of fullduplex
operation. Full duplex means that an Ethernet card
can send and receive concurrently.
Reference:
CCNA SelfStudy CCNA INTRO exam certification Guide (Cisco Press, ISBN 1587200945) Page 6263

QUESTION 371
You are a trainee technician at Certkiller , Inc. Your instructor tells you to backup an IOS image of a Cisco device to a Windows 2003 server on the network.
What should you do first? (Choose all that apply.)
A.Make sure that the network server can be accessed.
B.Check that the authentication for access is set.
C.Assure that the network server has adequate space for the code image.
D. Verify any file naming and path requirements.
E.Make sure that the server can load and run the bootstrap code.

Answer: A, B, C, D

Explanation:
Inorderto properly back up the Cisco IOS image onto a Windows server, you should ensure that the server is reachable
and that you have the proper permissions to save files to the server.In addition to this, the server will need enough space
to hold the backup file.
Incorrect Answers:
E.Inorderto simply back up the IOS file, the server needs to only be able to save it to a hard disk.It does not need to
load, read, or boot the image.

QUESTION 372
On the topic of OSPF routing; which of the following are the traits of an OSPF area? (Select all that apply)

A.Each OSPF area requires a loopback interface to be configured.
B.Areas may be assigned any number from 0 to 65535.
C.Area 0 is called the backbone area.
D.Hierarchical OSPF networks do not require multiple areas.
E.Multiple OSPF areas must connect to area 0.
F.Single area OSPF networks must be configured in area 1.

Answer: C, E

Explanation:
OPSF uses areas in a hierarchical fashion, and the backbone area is always area 0.All other areas have at least one
connection to area 0.
Incorrect Answers:
A.Loopback interfaces are often used in OSPF networks, so that the router ID can be configured.However, this is not
a requirement.
B.The areaid can be an integer between 0 and 4294967295.
F.Single area OSPF networks do not have to be configured with the backbone area 0.Although area 1 can indeed be
used, it is not required that area 1 is used.Single area OSPF networks can be any integer from 04294967295.

QUESTION 373
The following exhibit shows the router topology for the Certkiller network.

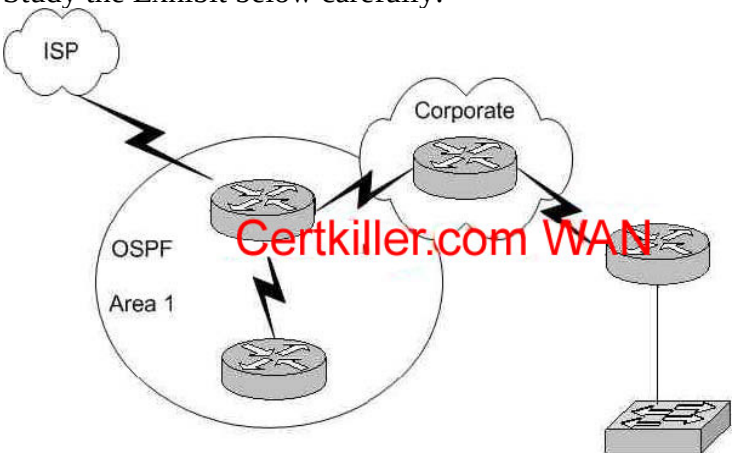
On the assumption that every router is running RIP; which of the statements below correctly describe the
way the routers exchange their routing tables? (Select al valid answer choices)
A. Certkiller 4 exchanges directly with Certkiller 3.
B. Certkiller 4 exchanges directly with Certkiller 2.
C. Certkiller 4 exchanges directly with Certkiller 1.
D. Certkiller 1 exchanges directly with Certkiller 3.
E. Certkiller 1 exchanges directly with Certkiller 2.
F. Certkiller 1 exchanges directly with Certkiller 4.

Answer: A, D

Explanation:
RIP exchanges routing tables with their adjacent neighbors. Therefore, Certkiller 3 will exchange routes with Certkiller 1,
RIP, unlike OSPF, only exchange information with their directly connected neighbors.With link state protocols

such as
OSPF and ISIS, information is flooded to all routers within the network system.

QUESTION 374
Study the Exhibit below carefully:



The company, Certkiller , network is running OSPF on the routers as shown in the exhibit above. An ISDN link provides connectivity to the remote sales office.
Which of the following route types should be configured on the Corporate router to connect to the sales office's remote network while minimizing network overhead on the ISDN link?
A.A RIP route
B.An OSPF route
C.A static route
D.A default route
E.A dynamic route

Answer: C
Explanation
A static route uses the least amount of overhead because no routing protocol information will be exchanged over the
ISDN link.As long as the ISDN link is up, the static route will always remain in the routing table of the corporate router.
Incorrect Answers:
A.This will not only provide additional overhead on the ISDN link as the RIP information is passed from one side to the
other, but it will add additional overhead and complexity to the corporate router because now two routing protocols will
need to be running.With this choice, RIP and OSPF will need to be configured on the corporate router.
B.This will add the overhead of LSP information being passed between the two routers over the ISDN link.
D.Although a default route can be a type of static route, in this case a default route will be a poor choice because then
traffic destined to the Internet will go to remote office on the right side, instead of towards the ISP on the left.
E.All dynamic routing protocols will add some level of overhead.Static routes will not increase the traffic level at all over
the ISDN link.

QUESTION 375
You are a network technician at Certkiller , Inc. The router topology for the Certkiller network is shown in the following exhibit:

Certkiller 2 and Certkiller 3 are configured for RIPv1 and have complete connectivity. Certkiller 1 was recently added to the network. You want Certkiller 1 to have full connectivity as well.
What would then be the most appropriate Certkiller 1 configuration?
A. Certkiller 1(config)# router rip Certkiller 1(configrouter)# network 10.0.0.0 Certkiller 1(configrouter)# network
172.16.0.0 Certkiller 1(configrouter)# network 192.168.1.0
B. Certkiller 1(config)# router rip Certkiller 1(configrouter)# network 10.0.0.0 Certkiller 1(configrouter)# network
192.168.1.0
C. Certkiller 1(config)# router rip Certkiller 1(configrouter)# network 10.0.0.0 Certkiller 1(configrouter) 357 # network 172.16.0.0 D. Certkiller 1(config)# router rip Certkiller 1(configrouter)# network 10.0.0.0

Answer: C

Explanation: When configuring RIP you configure only the directly connected networks that are to be advertised via
the RIP routing process are to be configured.
Incorrect Answers:
A.This choice implies that when configuring rip on a router every possible network in the entire system should be
configured. This is not the case.
B. Certkiller 1 requires the 172.16.0.0 network to be configured, not the 192.168.1.0 network.
D.If the 172.16.0.0 network is omitted, then the other routers in the network will not be able to reach the LAN users of
Certkiller 1 via RIP.
Reference:
CCNA SelfStudy CCNA ICND exam certification Guide (Cisco Press, ISBN 158720083X) page 167

QUESTION 376
What could you use to prevent rooting loops in the network when configuring the network using a distance vector routing protocol? (Choose all that apply.)
A.Spanning Tree Protocol
B.Shortest path first tree
C.Linkstate advertisements (LSA)
D.Holddown timers
E.Splithorizon
F.VRRP

Answer: D E

Explanation:
Distance vector routing protocols use the rule of split horizons and hold down timers to prevent routing loops after a
topology change.
*Splithorizon the routing protocol advertises routes out an interface only if they were not learned from updates entering that interface.
*Holddown timer- After finding out that a router to a subnet has failed, a router waits a certain period of time before
believing any other routing information about that subnet.
Incorrect Answers:
A.STP is used in bridged LANs to prevent bridging loops.It is a means for preventing loops at layer two, not layer 3.
B, C.These are two of the mechanisms of Link State Protocols, not distance vector protocols.
F. VRRP is the Virtual Router Redundancy Protocol, which is a standards based method similar to Cisco's proprietary
HSRP.Neither of these two methods deal with distance vector routing protocols.
Reference:
CCNA SelfStudy CCNA ICND exam certification Guide (Cisco Press, ISBN 158720083X) Page 154

QUESTION 377
Which of the following factors determines the OSPF router ID when configuring a router with both physical and logical interfaces?
A.The lowest network number of any interface.
B.The highest network number of any interface.
C.The highest IP address of any logical interface.
D.The middle IP address of any logical interface.
E.The lowest IP address of any physical interface.
F.The highest IP address of any physical interface.
G.The lowest IP address of any logical interface.

Answer: F

Explanation:
The OSPF topology database includes information about routers and the subnets, or links, to which they are attached.
To identify the routers in the neighbor table's topology database, OSPF uses a router ID (RID) for each router. A
router's OSPF RID is that router's highest IP address on a physical interface when OSPF starts running.
Note: The OSPF router ID is a 32bit IP address selected at the beginning of the OSPF process. The highest IP address configured on the router is the router ID. If a loopback address is configured, then it is the router ID. In case of
multiple loopback addresses, the highest loopback address is the router ID. Once the router ID is elected it doesn't

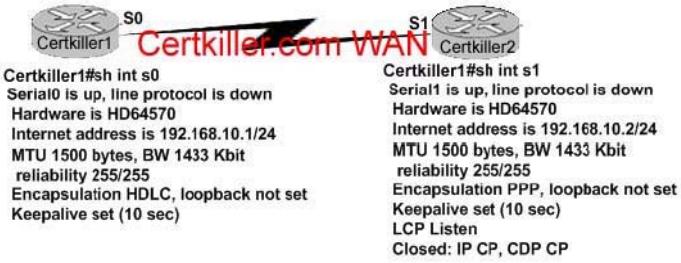
change unless the IP address is removed or OSPF restarts.
Reference:
CCNA SelfStudy CCNA ICND exam certification Guide (Cisco Press, ISBN 158720083X) Page 208

QUESTION 378
Which of the following routes will be used to forward data in a situation where a routing table contains static, RIP, and IGRP routes destined to the same network with each set to its default administrative distance?
A. The RIP route
B.The static route
C.The IGRP route
D.All three will load balance.

Answer: B

Explanation:
To decide which route to use, IOS uses a concept called Administrative Distance. Administrative distance is a number
that denotes how believable an entire routing protocol is on a single router. The lower the number, the better, or more
believable the routing protocol.
Route TypeAdministrative Distance
*Static1
*IGRP100
*RIP120
Reference:
CCNA SelfStudy CCNA ICND exam certification Guide (Cisco Press, ISBN 158720083X) Page 177

QUESTION 379
You are a network administrator at Certkiller . The Certkiller network is illustrated in the following exhibit. Study it carefully:



Routers Certkiller 1 and Certkiller 2 are connected through their social interfaces, however, they cannot communicate. You ascertain that Certkiller 1 has the correct configuration.
Can you identify the fault on router Certkiller 2?
A.Link reliability is insufficient
B.IPCP is not open
C.Incorrect subnet mask
D.Incompatible encapsulation
E.Bandwidth allocation is too low
F.Incomplete IP address

Answer: D

Explanation:
HDLC and PPP Configuration
HDLC and PPP configuration is straightforward. You just need to be sure to configure the same WAN datalink protocol on each end of the serial link. Otherwise, the routers will misinterpret the incoming frames, because each WAN
datalink protocol uses a different frame format. Other than configuring some optional features, that's all you need to do.
Reference:
CCNA SelfStudy CCNA ICND exam certification Guide (Cisco Press, ISBN 158720083X) Page 310

QUESTION 380
You are a technician at Certkiller . Your newly appointed Certkiller trainee,Fernandais unsure of the distinction between routed and routing protocols.
How would you explain the distinction to her? (Choose all that apply.)
A.A routing protocol is assigned to an interface and determines the method of packet delivery.
B.A routed protocol is assigned to an interface and determines the method of packet delivery.
C.A routing protocol determines the path of a packet through a network.
D.A routed protocol determines the path of a packet through a network.
E.A routing protocol operates at the transport layer of the OSI model.
F.A routed protocol updates the routing table of a router.

Answer: B, C

Explanation:
A routing protocol learns routes and puts those routes in a routing table.Examples of routing protocols are EIGRP,
OSPF, and BGP.
A routed protocol is the type of packet forwarded, or routed, through a network.Examples of routed protocols include
IP, IPX, andAppletalk.
Incorrect Answers:
A.Routing protocols are assigned to routers.This answer correctly describes a routed protocol.
D.This describes the function of a routing protocol.
E.Routing protocols operate at layer 3, which is the network layer, of the OSI model.
F.This is a function of a routing protocol.

QUESTION 381
Which of one the following fields is contained within an IEEE Ethernet frame header?
A.source and destination MAC address
B.source MAC address and destination network address only
C.source and destination network address only
D.source network address and destination MAC address
E.source and destination MAC address and source and destination network address

Answer: A

Explanation:
Ethernet versus IEEE 802.3
Two frame formats can be used on Ethernet:
1.The standard issued in 1978 by Xerox Corporation, Intel Corporation and Digital Equipment Corporation, usually
calledEthernet(orDIXEthernet).
2.The international IEEE 802.3 standard, a more recently defined standard.
The difference between the two standards is in the use of one of the header fields, which contains a protocoltype number for Ethernet and the length of the data in the frame for IEEE 802.3. As shown in the diagram above, the only address that IEEE Ethernet frame headers contain are the source and destination MAC addresses.
Reference:http://www.auggy.mlnet.com/ibm/3376c28.html

QUESTION 382
Which frame field do error detection schemes view to perform their function?
A.ERR
B.Flag
C.FCS
D.MTU
E.MAC
F.PDU

Answer: C

Explanation:
Most datalink
protocols include a FCS (frame check sequence) or a CRC (Cyclical redundancy check) field in the data link trailer. This field contains a value that is the result of a mathematical formula applied to the data in the frame, which is applied check for any errors that may have occurred during the transport.
Reference:CCNA SelfStudy CCNA INTRO exam certification Guide (Cisco Press, ISBN 1587200945) Page 51.

QUESTION 383
Error detection schemes check errors in the data packets by reading which field frame IDs?
A.MTU
A.PDU
B.FCS
C.Flag
D.MAC
E.BRI

Answer: C

Explanation:

Frame Check Sequence (FCS) field
Ethernet uses aCyclicRedundancyCheck(CRC) algorithm to detect transmission errors. The Frame Check Sequence
field is filled (using a CRC) by the sending host. If the receiving host detects a wrong CRC, it will throw away that
packet.
Incorrect Answers:
A.MTU is the Maximum Transmission Unit, which is set to 1500 bytes by default for ethernet packets.
B, D.This is not part of the data packet.
E.This is the Media Access Control, which is used most often to describe the layer 2 physical address of a device.
F.BRI is related to an ISDN connection, describing a ciircuit with 2 bearer channels and a single data channel.It has
absolutely nothing to do with error correction in a data packet.

QUESTION 384
Regarding PAR (Positive Acknowledgement and Retransmission), which of the answer choices below are correct? (Select all that apply.)
A.The source device will only retransmit lost packets on the request of the destination device.
B.The source device starts a timer when it sends a segment and retransmits if an acknowledgment is not received before
the timer expires.
C.The destination device acknowledges receipt of a segment by sending a packet with a new sequence number and the
ACK bit sent.
D.The destination device acknowledges receipt of a segment by sending a packet that indicates the next sequence
number it expects.
E.If the destination device does not receive a segment, all segments are retransmitted.
F.The source device keeps a record of all segments sent and expects and acknowledgment of each.

Answer: B, D, F

Explanation:
Answer B
1.The sender sets a retransmission timer, awaiting acknowledgement, just in case the acknowledgement is lost, or in
call all the transmitted segments are lost.
Answer D
1.The client will reply with an acknowledgement that requests for the next sequence number.
Answer F
1.The only way to know that it has sent the certain sequence number by keeping a record of it.
Incorrect Answers:
A.This is not true, as this would cause problems if the acknowledgement was lost in transmission.In a PAR transmission,
the sender uses a timer system to resend the data if not acknowledged in a timely manner.

C.The receiver sends the next expected sequence number to the sender, not a randomly chosen new sequence number.
E.Only data within the window that is missing the acknowledgement will be resent.
All data within the window size will be retransmitted, but not all data in the entire segment.

QUESTION 385
Study the following exhibit:

The exhibit above is representative of which of the following data structures?
A.FDDI frame
B.Ethernet frame
C.UDP datagram
D.Token Ring frame
E.TCP segment
F.None of the above

Answer: E

Explanation:
This diagram represents a TCP segment.TCP is a connection oriented protocol, which means it sends the data according to the sliding window algorithm, and uses acknowledgements.The diagram above shows the areas where
windows and acknowledgement numbers are used.UDP data structures do not use these fields.
Reference:
CCNA SelfStudy CCNA INTRO exam certification Guide (Cisco Press, ISBN 1587200945) page 151.

QUESTION 386
What term is used to describe the process where one frame is placed into a different type of frame?
A.Framing
B.Deencapsulation
C.Encapsulation
D.Deframing

Answer: C

Explanation:
Encapsulation is defined as: "The technique used by layered protocols in which a layeradds header information to the
protocol data unit (PDU) from the layer above. As an example, in Internet terminology, a packet would contain a
header from the physical layer, followed by a header from the network layer (IP), followed by a header from the

transport layer (TCP), and followed by the application protocol data."
When a frame is placed inside another frame it is know as encapsulation. To restore the frame to its original state is
de encapsulation.

QUESTION 387
A PC on a network segment sends data to another PC on a different segment.Which of the following correctly describe the correctorderof how this data will be encapsulated?
A.Data, Frame, Packet, Segment, Bit
B.Data, Frame, Segment, Packet, Bit
C.Data, Packet, Frame, Segment, Bit
D.Data, Packet, Segment, Frame, Bit
E.Data, Segment, Frame, Packet, Bit
F.Data, Segment, Packet, Frame, Bit

Answer: F

Explanation:
Data Encapsulation
Step 1 Create the application data and headers
* Data
Step 2 Package the data for transport
*Segment
Step 3 Add the destination and source network layer addresses to the data
*Packet
Step 4 Add the destination and source data link layer addresses to the data
*Frame
Step 5 Transmit the bits
*Bit

QUESTION 388
Classify terms on the left hand side with their associated descriptions on the right hand side. (Not all of the answer choices are used)

Answer:

Explanation:

QUESTION 389
The command "ip route 192.168.24.64 255.255.255.192 192.168.8.2 100" was configured on a router named CK1 . No routing protocols or other static routes are configured on the Corporate router yet.
Based on this information, which statement is true about this command?
A.This command sets a gateway of last resort for the CK1 router.
B.The number 100 indicates the number of hops to the destination network.
C.The interface with IP address 192.168.8.2 is on the CK1 router.
D. The command creates a static route for all IP traffic with the source address 192.168.24.64.
E.Packets destined for host 192.168.24.124 will be sent to 192.168.8.2.
F.None of the above

Answer: E

Explanation:
This configuration command will establish a static route, where all traffic destined to the 192.168.64/26 network will be
sent to the next hop router that has the 192.168.8.2 IP address.The value of 100 at the end of the static route means
that the administrative distance of 100 will be assigned to the route.By default, static routes have an AD of 1.In this
case, it is much higher but all traffic to this destination will still be used by this route since no other routes exist in CK1 .
Incorrect Answers:
A.The default route is also called the "all 0's" route since it is set with the "ip route 0.0.0.00.0.0.0" command.
B.The value of 100 is used to set the administrative distance, not the number of hops.
C.The IP address set in a static route is used for the next hop router, not the local router.
D.Static routes are used to tell the router how and where to forward traffic that is destined for particular networks, not
for traffic that is sourced from networks.

QUESTION 390
Network equipment supporting the use of flow control mechanisms has been recently installed.What is the

purpose of flow control in a data network?
A.It ensures that data is retransmitted if an acknowledgment is not received.
B.It reassembles segments in the correctorderon the destination device.
C.It provides a mechanism for the receiver to control the transmission speed.
D.It regulates the size of each datagram segment.
E.All of the above are functions of flow control

Answer: C

Explanation:
Flow control paces the transmission of data between a sending device and a receiving device. Flow control ensures that
the receiving device can absorb the data sent to it before the sending device sends more. When the buffers on the
receiving device are full, a message is sent to the sending device to suspend transmission until the data in the buffers has
been processed.
Incorrect Answers:
A.Data retransmission mechanisms are not handled by control.They are most often handled by transport layer protocols
such as TCP.
B. This describes the reassembly portion of the segmentation and reassembly (SAR) function of network equipment.
D.The maximum transmission unit (MTU) handles the regulation of maximum frame sizes.

QUESTION 391
Three different Certkiller routers are connected as shown below:

Host 1 is trying to communicate with Host 2. The e0 interface on Router C is down.
Which of the following are true? (Choose two)
A.Router C will use ICMP to inform Host 1 that Host 2 cannot be reached.
B.Router C will use ICMP to inform Router B that Host 2 cannot be reached.
C.Router C will use ICMP to inform Host 1, Router A, and Router B that Host 2 cannot be reached.
D.Router C will send a Destination Unreachable message type.
E.Router C will send a Router Selection message type.
F.Router C will send a Source Quench message type.

Answer:
A. D

Explanation:

When a packet reaches a router that is destined for a network that is not in the routing table or for a network that is
down, the router will send an ICMP destination unreachable message back to the sender.This informs the sending
station that the packet could not be forwarded to the destination, and this information will be sent to the sending station,
not to the router.

QUESTION 392
Which functions do routers perform when routing a packet? (Choose two)
A.packet switching
B.destination host addressing
C.path selection
D.VLAN membership assignment
E.ARP request forwarding

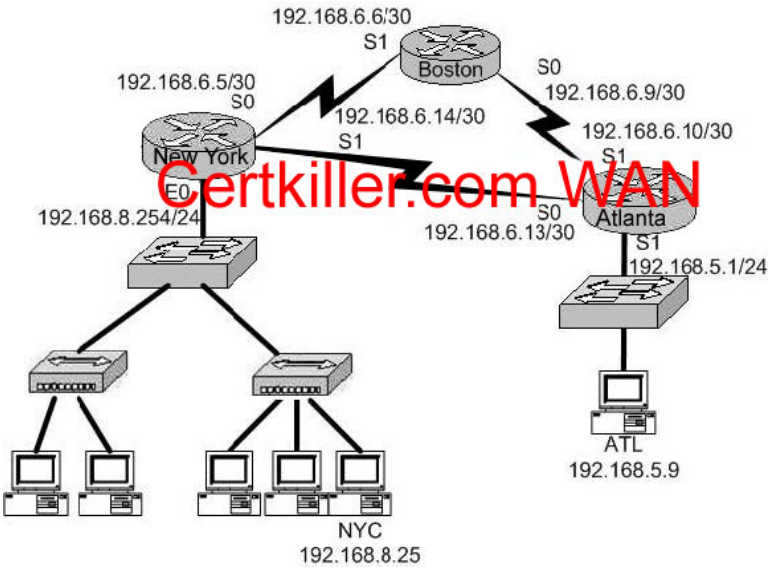
Answer: A, C

QUESTION 393
A router receives a packet on interface 172.16.45.66/26. The source IP of the packet is 172.16.45.127/26 and the destination is 172.16.46.191/26.
How will the router handle the packet?
A.The destination is a host on another subnet, so the router will not forward the packet.
B.The destination is a host on the same subnet, so the router will forward the packet.
C.The destination is a broadcast address, so the router will not forward the packet.
D.The destination is a network address, so the router will forward the packet.

Answer: C

Explanation:
/26 means 2bits ofsubnetting. There will be 4 subnets having 64 hosts in each subnet.
Subnets will be
172.16.46.0 172.16.46.63(063)
172.16.46.64 172.16.46.127(64127)
172.16.46.128 172.16.46.191(128191)
172.16.46.192 172.16.46.255(192255)
The destination address is 172.16.46.191 which indicates a BROADCAST address so, router will not process this
broadcast.

QUESTION 394
Exhibit:



The inter network shown in the graphic is using the EIGRP routing protocol. What will be the destination address of a packet destined for host NYC as it leaves the ATLANT Arouter?
A.192.168.6.5
B.192.168.6.6
C.192.168.6.9
D.192.168.6.14
E.192.168.8.25
F.192.168.8.25

Answer: E

Explanation:
In case of Routing Source and Destination IP Addresses never change so, a packet destined to NYC will always have
192.168.8.25 as a destination IP Address.

QUESTION 395
Which PPP authentication methods will you use when configuring PPP on an interface of a Cisco router? (Select two options.)
A.SSL
B.SLIP
C.PAP
D.LAPB
E.CHAP
F.VNP

Answer: C E

Explanation:
Password Authentication Protocol (PAP) and Challenge Handshake Authentication Protocol (CHAP) authenticate the

endpoints on either end of a point to point serial link. Chap is the preferred method today because the identifying codes
flowing over the link are created using a MD5 oneway hash, which is more secure that the cleartext passwords sent
by PAP.
Reference:
CCNA SelfStudy CCNA ICND exam certification Guide (Cisco Press, ISBN 158720083X) Page 314

QUESTION 396
Study the Exhibit below carefully:

What is the function of the Frame Relay DLCI with regard to Certkiller A?
A.Defines the signaling standard between Certkiller A and Certkiller B,
B.Identifies the type of encapsulation in operation between Certkiller A and Certkiller B.
C. Identifies the circuit between Certkiller B and the frame switch.
D.Defines the signaling standard between Certkiller A and the frame switch.

Answer: C

Explanation:
Certkiller A sends frames with DLCI, and they reach the local switch. The local switch sees the DLCI field and forwards
the frame through the Frame Relay network until it reaches the switch connected to Certkiller B. The Certkiller B'slocal
switch forwards the frame out of the access link to Certkiller B.
Reference:
CCNA SelfStudy CCNA ICND exam certification Guide (Cisco Press, ISBN 158720083X) Page 386

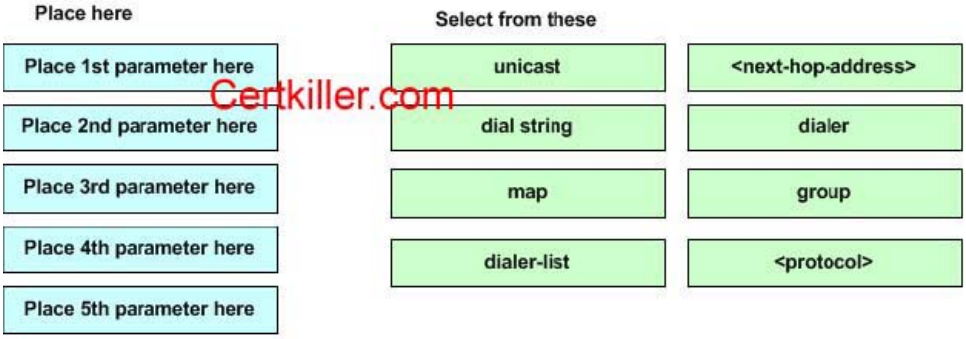
QUESTION 397
You are a network technician at Certkiller . The Certkiller network is illustrated in the following exhibit. Study it carefully:

Note:SPIDsare not required for this switch.
Which of the following command will you use to bring up the ISDN link? (Select three options.)
A.Router(configif)# encapsulation ppp
B.Router(config)#dialerlist 1 protocol ip allow
C.Router(config)#isdn switchtypetype
D.Router(config)#dialer map ipaddressnameconnection number
E.Router(configif)# dialergroup
F.Router(configif)# ip addressaddresssubnet mask

Answer: B E F

Explanation:
The dialer group number enables dialerlist
on this interface. The dialerlist
is to be defined in global configuration mode
as shown in B.Finally, the interfaces should be configured with the proper IP address and subnet mask.
Incorrect Answers:
A.ISDN BRI interfaces should be configured with PPP encapsulation.
C.This is not always required, as the default switch type may be sufficient.In addition, if noSPIDsare required, then there
is a good chance that the ISDN switchtype
does not need to be explicitly defined.
D.This command is using the incorrect syntax.
Reference:
CCNA SelfStudy CCNA ICND exam certification Guide (Cisco Press, ISBN 158720083X) Page 310+337

QUESTION 398
Place the parameters in the correct sequence to configure dialondemand
routing (DDR) on an ISDN BRI interface.



Answer:

Explanation:
Place 1st next hop address
Place 2nd Dialerlist
Place 3rd protocol
Place 4th DialerString
Place 5th group
Reference:
CCNA SelfStudy CCNA ICND exam certification Guide (Cisco Press, ISBN 158720083X) Page 342

QUESTION 399
You are a network technician at Certkiller . You need to configure Frame Relay on a Cisco router.
What is the default LMI (Local Management Interface) frame type transmitted by the Cisco router on a Frame Relay circuit?
A.IETF
B.B8ZS

C.ANSI
D.Cisco
E.Q933a

Answer: D

Explanation:
NameDocumentIOS LMIType Parameter
*CiscoProprietarycisco
*ANSIT1.617 Annex Dansi
*ITUQ.933. Annex Aq.933a
Reference:
CCNA SelfStudy CCNA ICND exam certification Guide (Cisco Press, ISBN 158720083X) Page 382

QUESTION 400
You are the network administrator at Certkiller . You want to set up Frame Relay for pointtopoint sub interfaces.
Which of the following must you NOT configure?
A.The Frame Relay encapsulation on the physical interface.
B.The local DLCI on eachsubinterface.
C.An IP address on the physical interface.
D.Thesubinterfacetype as pointtopoint.

Answer: C

Explanation:
You have to configure thedlcifor every pointtopointsubinterface. The only thing you do NOT configure is the ip address of the physical interface.
If thesubinterfaceis configured aspointtopoint, then the local DLCI for thesubinterfacemustalso be configured in order
to distinguish it from thephysical interface. (Cisco CCNA CurriculumSemester4).Typical configuration for a pointtopointsubinterface: for the physical interface:encapsulation framerelayrouterA(configif)# interface serial 0/0.110
pointtopointrouterA(configif)# ip address ...routerA(configif)# bandwith...router(configsubif)# framerelay interfacedlcidlcinumber

---

QUESTION 401
You are a network administrator at Certkiller . You are busy troubleshooting a WAN connection.
You issue the debug ppp authentication command on the router. The output from this command is shown in the following exhibit:
#debug ppp authentication
PPP Serial1:Send CHAP challenge id=34 t remote
PPP Serial1:CHAP challenge from P1R2
PPP Serial1:CHAP response received form P1R2
PPP Serial1:CHAP response id=34 received from P1R2
PPP Serial1:Send CHAP success id=34 to remote

PPP Serial1:Remote passed CHAP authentication
PPP Serial1:Passed CHAP authentication
PPP Serial1:Passed CHAP authentication with remote
What type of type of handshake occurred for PPP authentication?
A.oneway
B.twoway
C. threeway
D.No handshakes required during authentication

Answer: C

Explanation:
CHAP uses a oneway hash algorithm, with input to the algorithm being a password and a shared random number. The
CHAP challenge states the random number; both routers are preconf
runs the hash algorithm using the justlearned random number and the secret password and sends the results back to the
router that sent the challenge. The router that sent the challenge runs the same algorithm using the random number (sent
across the link) and the password (not sent across the link). If the results match, the passwords must match.
Reference:
CCNA SelfStudy CCNA ICND exam certification Guide (Cisco Press, ISBN 158720083X) Page 314

QUESTION 402
You are the network administrator at Certkiller . The Certkiller network includes an ISDN link. Your newly appointed Certkiller trainee wants to know what the bandwidth of a single ISDN BRI B channel is.
What would your reply be?
A.16kb/s
B.56kb/s
C.64kb/s
D.128kb/s
E.192kb/s

Answer: C

Explanation:
B channels transport data. They operate at speeds of up to 64 kbps, although the speed might be lower, depending on
the service provider, or might be based on standards in some parts of the world.
Reference:
CCNA SelfStudy CCNA INTRO exam certification Guide (Cisco Press, ISBN 1587200945) Page 449 381

QUESTION 403
NO: 9
You are a network technician at Certkiller . Certkiller has its head office in Mumbai and a branch office in Delhi. You want to establish connectivity between head office and the branch office. You intend using two

data link layer encapsulation, one for data and one for signaling.
What type of WAN service allows two data layer encapsulations of this nature?
A.ISDN
B.ATM
C.FDDI
D.ATX
E.Frame Relay

Answer: A

Explanation:
ISDN stands for Integrated Services Digital Network, precisely because it was designed to be integrated with current
digital telephone services.It was originally designed to bring relatively high speed voice and data services to home users,
as well as corporate users.
Note:This question is obviously a bit dated, as a better choice in today's marketplace would be DSL, which also provides even higher speeds over the existing telephone infrastructure.

QUESTION 404
You are a network technician at Certkiller . Certkiller has its head office inBerlinand a branch office inBonn.
You are troubleshooting the WAN link between head office and the branch office.
You replace a Cisco router that was providing Frame Relay connectivity at theBonnsite with a frame relay router from a different vendor. However, connectivity broke down between the two offices.
What is the most likely cause of the problem?
A.Mismatched LMI types.
B.Incompatible encapsulation types.
C.Mismatching IP addresses.
D.Incorrect DLCI.

Answer: A

Explanation:
Three LMI protocol options are available in Cisco IOS software: Cisco, ITU, and ANSI. Each LMI option is slightly
different and therefore is incompatible with the other two. As long as both the DTE and DCE on each end of an access
link use the same LMI standard, LMI works fine.The default LMI type in a Cisco router is Cisco.Since this is proprietary, this LMI type is incompatible with the LMI type used by other vendors.
Reference:
CCNA SelfStudy CCNA ICND exam certification Guide (Cisco Press, ISBN 158720083X) Page 381

QUESTION 405
Which of the following features are PPP characteristics? (Choose all that apply.)
A.Encapsulates several different types of routing protocols.
B.Supports only IP.

C.Can be used over analog circuits.
D.Maps Layer addresses.
E.Corrects errors.

Answer: A C E

Explanation:
*PPP can be used on either type of line (dial or switched lines), because datalink protocols are designed for point to point environment.
*PPP uses one LCP per link and one Control Protocol for each Layer 3 protocol defined on the link. If a router is
configured for IPX, Apple Talk, and IP on a PPP serial link, the router configured for PPP encapsulation automatically
tries to bring I the appropriate control protocols for each layer 3 protocol.
*Error recovery can be performed by the datalink protocol or a higherlayer protocol, or it might not be performed at
all. Supported but not enabled by default.
Incorrect Answers:
B.PPP can be used to support any higher layer protocol, including IP, IPX,Appletalk, etc.
D.PPP is an industry standard used in point to point data networks.The Cisco proprietary method that is similar to PPP
is HDLC.
Reference:
CCNA SelfStudy CCNA ICND exam certification Guide (Cisco Press, ISBN 158720083X) Page 309

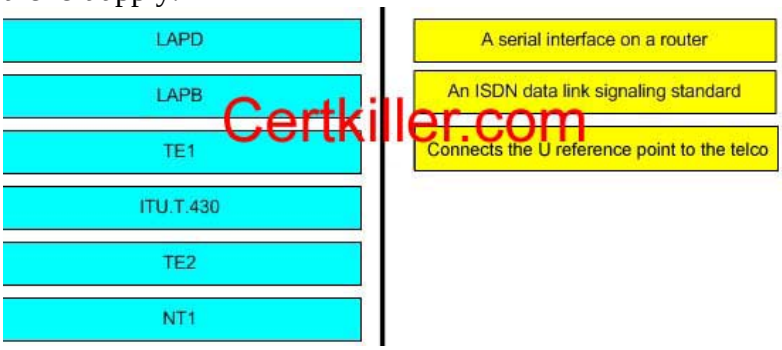
QUESTION 406
Which of the following options can be negotiated using LCP during the PPP link establishment? (Select three options.)
A.Q.931
B.IPCP
C.multilink
D.CHAP
E.callback

Answer: B C D

Explanation:
The NCP phase is used for establishing and configuring different networklayer
protocols. The most common layer 3
protocol negotiated is IP. The routers exchange IP Control Protocol (IPCP) messages negotiating options specific to
the protocol.
PointtoPoint Protocol (PPP) currently supports two authentication protocols: Password Authentication Protocol (PAP) and Challenge Handshake Authentication Protocol (CHAP). Both are specified in RFC 1334 and are supported
on synchronous and asynchronous interfaces.)

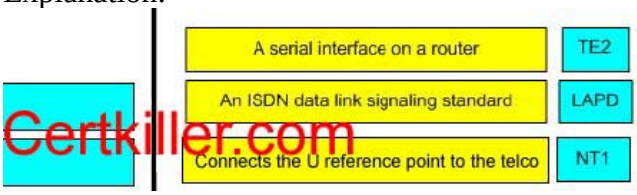
(Reference: CCNA SelfStudy CCNA ICND exam certification Guide
(Cisco press, ISBN 158720083X) Page 310+311 by ESMNDC.org)

QUESTION 407
Match the ISDN term on the right to the appropriate description on the left. Please note: Not all options on the left apply.



Answer:

Explanation:



*LAPD provides the data link protocol that allows delivery of messages across that Dchannel to the local switch.
* LAPB Protocol and is designed primarily to satisfy the signaling requirements of ISDN basic access. It is defined by
ITUT Recommendations Q.920 and Q.921.
*TE1 ISDN capable fourwire cable. Understands signaling and 2B=D. Uses an S reference point.
*ITU.T.430 Defines connectors, encoding, framing, and reference points.
*TE2 Equipment that does not understand ISDN protocols and specifications (no ISDN awareness). Uses an R reference point, typically an RS232 or V.35 cable, to connect to a TA.
*NT1 CPE equipment inNorth America. Connects with a U reference point (twowire) to thetelco.
Reference:
CCNA SelfStudy CCNA ICND exam certification Guide (Cisco Press, ISBN 158720083X) Page Chapter 10

QUESTION 408
The Certkiller network is shown in the following exhibit:

What is the function of the Frame Relay DLCI with regard to Certkiller 1?
A.Defines the signaling standard between Certkiller 1 and Certkiller 2.
B.Classifies the encapsulation used between Certkiller 1 and Certkiller 2.
C.Identifies the circuit between Certkiller 2 and the frame switch.

D.Classifies the circuit between Certkiller 1 and Certkiller 2.
E.Defines the signaling standard between Certkiller 1 and the frame switch.

Answer: C

Explanation:
Certkiller 1 sends frames with DLCI, and they reach the local switch. The local switch sees the DLCI field and forwards
the frame through the Frame Relay network until it reaches the switch connected to Certkiller 2. The Certkiller 2's local
switch forwards the frame out of the access link to Certkiller 2.DLCI information is considered to be locally significant,
meaning that the DLCI is used between the end router and the carrier's local frame relay switch.
Reference: CCNA SelfStudy CCNA ICND exam certification Guide (Cisco Press, ISBN 158720083X) Page 386
Incorrect Answers:
A, E.DLCI is used only as a circuit identifier (DLCI=Data Link Circuit Identifier), and not used for signaling.
B.The encapsulation options are not defined withDLCIs.
D.The DLCI information is considered to be locally significant, meaning that the DLCI is used between the end router
and the carrier's local frame relay switch.The DLCI is not used end to end (router to router).

QUESTION 409
You are a network technician at Certkiller , Inc. A newly appointed trainee wants to know what the purpose of DLCIsin Frame Relay is.
What would your response be?
A.They determine the encapsulation type employed by the Frame Relay.
B.They identify the logical circuit between a local router and a Frame Relay WAN switch.
C.They represent the physical address of the router.
D.They represent thekeepalivesin the maintenance of PVC.

Answer: B

Explanation:
Routers use the datalink connection identifier (DLCI) as the Frame Replay address, which identifies the VC over which
the frame should travel.
Data Link Connection Identifiers are the "hardware address" on a Frame Relay network. They identify a routers PVC
to the Frame Relay switch.
Reference:
CCNA SelfStudy CCNA ICND exam certification Guide (Cisco Press, ISBN 158720083X) page 377
Incorrect Answers:
A.DLCI information is not used to determine the encapsulation of the frame relay circuit in any way.
C.A DLCI is used at layer two, but it is a separate identifier that is not related to the hardware MAC address of any

device.
D.The function of akeepaliveis handled by LMI in a frame network, not the DLCI.

QUESTION 410
You are a network technician at Certkiller , Inc. The Certkiller network is shown in the following exhibit:

SPIDsare not required for this switch.
Which of the following configuration commands are the minimum commands required to bring up the ISDN link?(Choose three.)
A.Router(configif)# encapsulation HDLC
B.Router(config)#dialerlist 1 protocol ip permit
C.Router(config)#isdn switchtypetype
D.Router(config)#dialer map ipaddressnameconnection number
E.Router(configif)# dialergroup
F.Router(configif)# ip addressaddresssubnet mask

Answer: B, E, F

Explanation:
The dialer group number enables dialerlist on this interface. The dialerlist is to be defined in global configuration mode
as shown in B.Finally, the interfaces should be configured with the proper IP address and subnet mask.
Incorrect Answers:
A.ISDN BRI interfaces should be configured with PPP encapsulation.
C.This is not always required, as the default switch type may be sufficient.In addition, if noSPIDsare required, then there
is a good chance that the ISDN switchtype does not need to be explicitly defined.
D.This command is using the incorrect syntax.
Reference:
CCNA SelfStudy CCNA ICND exam certification Guide (Cisco Press, ISBN 158720083X) Page 310+337

QUESTION 411
What are the options for Frame LMI types. (Choose three.)
A.Q.931
B.IEEE
C. Cisco
D.IETF
E.Q933a
F.ANSI

Answer: C, E, F
Explanation
NameDocumentIOS LMIType Parameter
*CiscoProprietarycisco

*ANSIT1.617 Annex Dansi
*ITUQ.933. Annex Aq.933a
Reference:
CCNA SelfStudy CCNA ICND exam certification Guide (Cisco Press, ISBN 158720083X) Page 382

QUESTION 412
Study the Exhibit below carefully:
hostname Barrymore
!
enable password gatekeeper
!
isdn switchtype
basic5ess
!
!
username Central passwordcisco
interface BRI0
ip address 192.168.0.1 255.255.255.0
encapsulation ppp
dialer idletimeout
180
dialer map ip 192.168.0.2 name Remote 6662000
dialergroup
no fairqueue
ppp authentication chap
!
router rip
network 192.168.0.2
!
no ip classless
ip
route 192.168.10.0 255.255.0.0 192.168.0.2
ip route 192.168.20.0 255.255.0.0 192.168.0.2
!
dialerlist
1 protocol ip permit
Above is the result of the output of show runningconfig command. What is causing the problem when the Barrymore router is unable to make calls to the remote site?
A.The authentication password is missing from thedialer mapcommand.
B.The switchtype must be configured.
C.Routing updates are being blocked by the applied dialerlist.
D.The dialer list only permits one protocol.
E.The name in thedialermapmust
match the name in theusernamecommand.

Answer: E

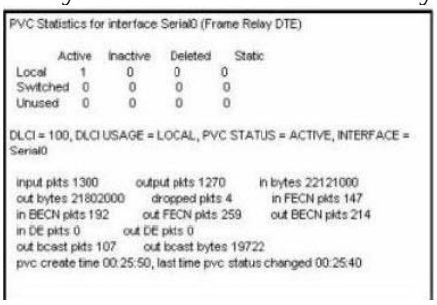
Explanation:
The username in the above exhibit is "Central", while the dialermap name is "Remote". Since the names don't match the
call can't be completed.

QUESTION 413
You are the network technician at Certkiller . Certkiller has a router that is connected to a Frame Relay WAN link using a serial DTE interface. Your newly appointed Certkiller trainee wants to know how the interface clock rate is determined on this router.
What will your reply be?
A.It is determined by the CSU/DSU.
B.It is determined by the far end router.
C.It is specified in theclock ratecommand.
D.It is determined by the Layer 1 bit stream timing.

Answer: A

Explanation: In Framerelay you do not talk about Routers and for in particular not a "farendrouter" (not B). The correct answer, if we talk about Framerelay which is what the question is talking about, is the CSU/DSU, which
determines the clock rate.

QUESTION 414
Study the Exhibit below carefully:



You work as a network administrator at Certkiller , You received complaints from the Certkiller employees that their Frame Relay connection to the corporate site is very slow. You have a suspicion that the link is overloaded. Which output value indicates to the local router that traffic is sent to the corporate site is experiencing congestion taking into account the partial output of the Router# show frame relaypvccommand shown in the exhibit?
A.in DE packets 0
B.last time PVC status changed00:25:40
C.in BECN packets 192
D.DLCI = 100
E.in FECN packets 147

Answer: C

Explanation:
BECN stands for Backward Explicit Congestion Notification.The BECN tells the transmitting device that the Frame
Relay network is congested and that it should "back off" to allow better throughput. BECN and FECN go hand to hand
together, but since the question specifically asks for what's indicating congestion between the local router and corporate
site, BECN is correct.

QUESTION 415
Study the Exhibit below carefully:

Barrymore#showrunningconfig
<some output text omitted>
enable passwordcisco
!
username Central password 0cisco
!
interface BRI0/0
ip address 192.168.0.1 255.255.255.0
encapsulation ppp
dialer idletimeout
180
dialer map ip 192.168.0.2 name Remote 5552000
dialer group
isdn switchtype basicni
no fairqueue
ppp authentication chap
!
ip route 192.168.20.0 255.255.255.0 192.168.0.2
!
router rip
network 192.168.0.0
!
accesslist 129 denytcp192.168.0.0 0.0.0 255 host 192.168.20.5eqwww
accesslist 128 permit ip anyany
dialerlist 1 protocol ip list 128
You decided to keep web traffic from causing the ISDN link to come up by denying WWW traffic to the 192.168.20.5 remote server, in an effort to minimize traffic. However, two minutes after making changes to the configuration as illustrated in the exhibit above, you notice that web traffic is still passing over the link. What is the most probable cause for the traffic still passing over the link?
A.Broadcasts are creating "interesting" traffic.
B.The accesslist is not configured correctly.
C.The commandip accessgroup 128 outis missing from the bri0/0 interface.
D. The dialergroup has not been applied to outbound traffic.

Answer: C

Explanation:
In this case the access list is correctly created using access list number 129.The problem is that ACL 129 has not been
applied anywhere.We wish to apply this access list to the BRI 0/0 interface, in the outbound direction.
Incorrect Answers:
A, D.In this example, the question does not relate to the ISDN call establishment.It is assumed that the link works
correctly and that the interesting traffic is configured correctly.This is simply an access list issue, not an ISDN issue.
B. the access list is indeed conf

QUESTION 416
Which type of NAT will map multiple private IP addresses to a singular registered IP address through making use of different ports?
A.Static NAT
B.Port loading
C.NAT Overloading
D.Dynamic NAT

Answer: C

Explanation:
Port address translation, or NAT overloading, uses transport layer port information to dynamically create NAT entries.
This is also known as one to many network address translation.
Incorrect Answers:
A.Static NAT is known as one to one NAT, and is used to map a single IP address to a single registered IP address.It
is often used for servers that need to be accessed via the Internet.
B, D.This is the incorrect term, and is not used.

QUESTION 417
The Certkiller Central and Remote offices are configured as shown below:
Central# show runningconfigRemote#
show runningconfig
<some output text omitted><some output text omitted>
interface Serial0/0interface Serial0/0
ip address 10.0.8.1 255.255.248.0ip address 10.0.15.2 255.255.248.0
encapsulation framerelayencapsulation framerelay
framerelay map ip 10.0.15.2 200framerelay
map ip 10.0.8.1 100
!!
router riprouter rip
network 10.0.0.0network 10.0.0.0

The remote router can be successfully pinged from the central office but the remote users can't access the server at the central office.
Based on the output above, what do you suspect is the cause of this problem?
A.The Frame Relay PVC is down.
B.The IP addressing on the Central/Remote serial link is incorrect.
C.RIP routing information is not being forwarded.
D.Frame Relay inverseARP
is not properly configured.

Answer: C

Explanation: By looking to he output we can see that there are routes and routing protocol is RIP. The remote server
can be pinged, we know now that there is a physical connection (for that answer A + B can be eliminated.You don't
need the ' InverseARP for taking access not in this connection! and for that the only possible answer will be the C

QUESTION 418
Which one of the following represents the bandwidth capacity of a single ISDN BRI B channel?
A.16kb/s
B.64kb/s
C.128kb/s
D.144kb/s
E.192kb/s
F.256kb/s

Answer: B

Explanation:
A single ISDN BRI B channel only has a maximum bandwidth of 64kbps. You need two of them together just to get
128kbps.A complete ISDN circuit is 2B+1D, with 2 64kbps B channels and one 64 kbps D channel.

QUESTION 419
With regard to ISDN, which of the following are true? (Choose all that apply.)
A.Legacy DDR can use port information to define interesting traffic.
B.Legacy DDR can configure multiple dialer configurations on the same interface.
C.Legacy DDR can useACLsto define interesting traffic.
D.HDLC or PPP can be used to encapsulate ISDN D channel information.
E.The BRI interfaces on ISDN routers with dialer profiles configured cannot belong to multiple dialer pools.
F.Dialer profiles cannot useACLsto define interesting traffic.

Answer: A, B, C

Explanation:

Dialer profiles separate logical configurations from the physical interfaces that receive or make calls. Because of this
separation, interfaces such as ISDN, asynchronous modems, or synchronous serial connections can be shared by multiple dialer profile configurations. Dialer profiles allow logical and physical configurations to be bound together
dynamically on a per call basis, allowing physical interfaces to take on different characteristics based on incoming or
outgoing call requirements. Dialer profiles can define encapsulation, access control lists, minimum or maximum calls, and
toggle features on or off. Dialer profiles are particularly useful where multiple ISDN B channels are to be used to
connect to multiple remote destinations simultaneously. In such a case, one dialer profile can be bound to one set of B
channels while another dialer profile can be bound to another set of B channels, thus allowing the same physical interface
to connect to multiple remote destinations simultaneously.
Interesting traffic can be defined using both standard and extended access lists, meaning that information from layer 3
addresses and layer 4 ports can be utilized.
Incorrect Answers:
D.HDLC is not a valid option for ISDN connections.
E.This statement is incorrect.Dialer profiles can indeed be used with multiple dialer pools.
F.Any type of access list can be used to define the interesting traffic.Interesting traffic can be defined using both standard and extended access lists, meaning that information from layer 3 addresses and layer 4 ports can be configured.

QUESTION 420
You are a technician at Certkiller . You have encapsulated an ISDN link on the Certkiller network with PPP. Your newly appointed Certkiller trainee wants to know why you did not use HDLC to encapsulate the ISDN link.
What will your reply be? (Choose two.)
A.PPP is easier to configure and maintain than HDLC.
B.PPP is consistently implemented among different equipment vendors.
C.PPP will run faster and more efficiently than HDLC on circuitswitched ISDN links.
D.PPP authentication will prevent unauthorized callers from establishing an ISDN circuit.
E.PPP can be routed across public facilities, while HDLC is not routable in circuitswitched networks.
F.PPP supports asynchronous communication.

Answer: B, D

Explanation: PPP has numerous advantages over HDLC.Unlike HDLC which is Cisco proprietary, PPP was designed
for multiprotocol interoperability. Secondly, PPP supports authentication, using either PAP or CHAP.Finally, PPP
supports error correction and the use of bonded multilink circuits.
Incorrect Answers:

A.The default encapsulation is HDLC.PPP must be explicitly configured and there are many more options available with
it, so it is more complicated than HDLC.
C.HDLC is slightly more efficient than PPP.
E.Neither PPP nor HDLC work in public circuit switched environments.
F.Although this is true, it would not be considered an advantage on an ISDN link, as ISDN signaling is not asynchronous.
Reference:CCNA SelfStudy CCNA ICND exam certification Guide (Cisco Press, ISBN 158720083X) Page 308-310

QUESTION 421
Which of the following fields of frame is used by detection schemes to perform its function?
A.ERR
B.Flag
C.FCS
D.MTU
E.MAC
F.PDU

Answer: C

Explanation:
Most datalink protocols include a FCS (frame check sequence) or a CRC (Cyclical redundancy check) field in the
datalink trailer. This field contains a value that is the result of a mathematical formula applied to the data in the frame,
which is applied check for any errors that may have occurred during the transport.
Reference:CCNA SelfStudy CCNA INTRO exam certification Guide (Cisco Press, ISBN 1587200945) Page 51.

QUESTION 422
You are attempting to troubleshoot a frame relay problem you are having within the Certkiller network, but you are unsure where to start.You begin by entering the command:
'Router# show frame relay
Which three options will you be prompted for?(Select three answers choices)
A.dlci
B.clients
C.pvc
D.neighbors
E.lmi
F.map

Answer: C, E, F

Explanation:
The valid options for, 'show framerelay' are: show framerelay map,show framerelaylmi, & show framerelaypvc.

In
the Cisco IOS, if you don't type in a command specific enough, it will prompt you to select an option.
Incorrect Answers:
A, B, D.Show framerelaydlci, show framerelay clients, and show framerelay neighbors are all invalid commands.

QUESTION 423
Which of the following WAN technologies provides small offices and private homes using normal telephone lines with higher speed digital dialup
service?
A.X25
B.Frame Relay
C.ATM
D.ISDN
E. ATX

Answer: D

Explanation:
ISDN stands for Integrated Services Digital Network, precisely because it was designed to be integrated with current
digital telephone services.It was originally designed to bring relatively high speed voice and data services to home users,
as well as corporate users.
Note:This question is obviously a bit dated, as a better choice in today's marketplace would be DSL, which also provides even higher speeds over the existing telephone infrastructure.

QUESTION 424
Which of the following statements correctly describes the characteristics of a Frame Relay pointtopoint subinterface? (Select two answer choices)
A.Needs to use Inverse ARP.
B.Maps a single IP subnet per DLCI.
C.Maps a single IP subnet across multipleDLCIs.
D.Resolves NBMA (non broadcast multi access) split horizon issues.
E.Requires use of theframerelay mapcommand.
F.None of the above

Answer: B, D

Explanation:
B is correct because only one DLCI can be configured per pointtopointsubinterface. The command 'framerelay interfacedlci' associates the selected pointto pointsubinterfacewith only one DLCI.
Subinterfaceswere originally created to take care of splithorizon issues from distance vector routing protocols over
nonbroadcast multiple access networks, because split horizon prevents routing updates received on one interface from

retransmitting out onto the same interface.This is true even if the routing update is received on one frame relay PVC
destined out to another frame relay PVC! By partitioning the frame relay network into numerous point to point networks usingsubinterfaces subnetworkgets their own network number assigned. Therefore,
the routed protocol views eachsubnetworkas if it was located on a separate interface.

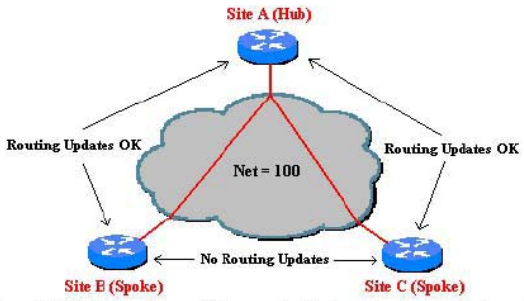


Figure 2: Split-horizon does not allow remote sites to send routing updates to each other.

Reference:
http://www.ciscopress.com/articles/article.asp?p=170741&seqNum=6
Incorrect Answers:
A.Since only one DLCI is assigned per subnet in a logical point to point interface, there is no need for Inverse ARP,
since both the DLCI and IP addresses are already known.
C.The IP subnet is mapped across a single virtual circuit, so only one DLCI is mapped persubinterface.
E.This command would be needed when multiple virtual circuits are being configured on one physical interface.When
logicalsubinterfacesare used, the "framerelay interfacedlci" command is used, not this command.

QUESTION 425
You are in the midst of configuring a router for a Frame Relay network. What could you do to prevent split horizon problems?(Select two)
A.Configure a separate subinterface for each PVC.Assign a unique DLCI and subnet to each subinterface.
B.Configure each Frame Relay circuit as a pointtopoint line to support multicast and broadcast traffic.
C.Configure one subinterface to disperse into multiple PVC connections to multiple remote router interfaces.
D.Configure as many as possible subinterfaces on the same subnet.
E.Use the "no ip splithorizons" command on the physical interface.

Answer: A, E

Explanation:
The best solution is to configuresubinterfacesfor each virtual connection, because the individual virtual circuits can be
maintained and split horizon can remain on.Routing update information that is received through onesubinterfacecan be
propagated to othersubinterfaces, because each subinterface is treated as a completely separate interface. Configuring
Frame Relaysubinterfacesensures that a single physical interface is treated as multiple virtual interfaces. This capability
allows you to overcome split horizon rules so packets received on one virtual interface can be forwarded to

another
virtual interface, even if they are configured on the same physical interface.Another alternative to using sub interfaces is
to simply disable the split horizon mechanism as shown in choice E.
Reference:http://www.cisco.com/warp/public/116/fr_faq.html

QUESTION 426
With regard to ISDN, which of the following are true? (Choose all that apply.)
A.Each ISDN B channel has transmission speeds of up to 64 kbps.
B.The ISDN B channel can carry video, voice or data.
C.The ISDN B channel transmission rate varies depending on the service used.
D.The ISDN D channel transmits control information.
E.The ISDN B channels can be configured with different subnets and encapsulation types when dialer profiles are
configured.

Answer: A, B, D

Explanation:
Each B channel has a maximum throughput of 64 kbps and can carry encoded pulse code modulation digital voice,
video, or data. They are used mainly for circuitswitched data communications such as HighLevel Data Link Control
(HDLC) and PointtoPoint Protocol (PPP). However, they can also carry packetswitched data communications.
The router uses the D channel to dial destination phone numbers. It has a bandwidth of 16 kbps for BRI or 64 kbps for
PRI. Although the D channel is used mainly for signaling, it too can also carry packetswitched data.
Incorrect Answers:
C.The individual B channels can be set at 56 kbps or 64 kbps, but this value is static and can not be changed dynamically based on the service that is being used at the time.
E.Although dialer profiles can be used to place individual B channels into separate logical interfaces with different IP
subnets, the encapsulation type can not be changed.

QUESTION 427
You are the network administrator at Certkiller . Certkiller has its headquarters in New York, and regional offices in Boston, Buffalo, Cleveland,PittsburghandBaltimore. You want to connect the regional offices to headquarters. You are evaluating WAN technologies that could accomplish this. You want each regional office to be connected to the corporate headquarters in a hub and spoke arrangement using a packetswitched technology.
Which of the following WAN technologies should you use?
A.Frame Relay
B.Broadband cable
C.ISDNBRI
D.ADSL

E.Dedicated PPP/HDLC links
F.ISDN

Answer: A

Explanation:
Frame Relay is a dedicated service that would be acceptable for a mission critical WAN application, and multiple
locations can connect to a single router port.The use of frame relay PVC's can connect all the locations together, while
using only one physical port.
Incorrect Answers:
B, D.While DSL and Cable Modem is acceptable for home use, they have not yet achieved the availability and reliability associated with dedicated WAN technologies such as ATM, Frame Relay, and Point to Point links.
C, F.ISDN is usage based, and would it would be cost prohibitive to keep the ISDN links up at all times.
E.Dedicated leased lines would require a separate router port for each link.

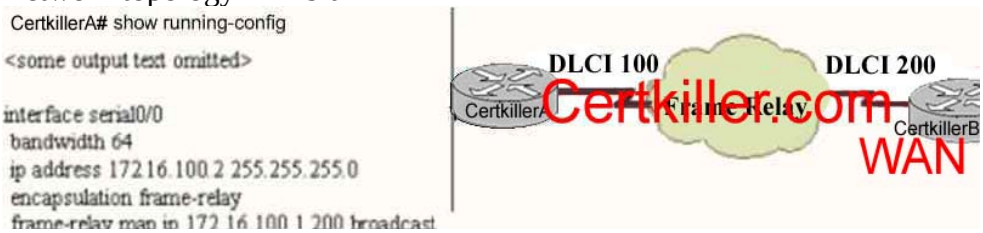
QUESTION 428
You are the network administrator at Certkiller . Your Certkiller trainee is working in a lab that has aFrame Relay network in which Inverse ARP is not operational. She wantsto know which command would provide connectivity in this network.
What will your reply be?
A.framerelayarp
B.framerelay map
C.framerelay interfacedlci
D.framerelaylmitype
E.framerelaypvc

Answer: C

Explanation:
A sample configuration is provided below for reference:
interface serial0
encapsulation framerelay
!
interface serial 0.3 pointtopoint
ip address 140.1.3.4 255.255.255.0
framerelay
interfacedlci51
!
interface Ethernet 0
ip address 140.1.14.4 255.255.255.0
Again, defaults abound in this configuration, but some defaults are different than when you're configuring on the main
interface, as in the preceding example. The LMI type is autosense, and Cisco encapsulation is used, which is just like

the fullymeshed example. However, Inverse ARP is disabled on each pointtopointsubinterfaceby default.Inverse ARP is not needed with pointtopointsubinterfaces.
Two new commands create the configuration required with pointtopointsubinterfaces. First, the interface serial 0.1
pointtopoint command creates logicalsubinterfacenumber 1 under physical interface Serial0. The framerelay interfacedlcis ubinterfacesubcommand then tells the router which single DLCI is associated with thatsubinterface.

QUESTION 429
Network topology Exhibit



You work as a network engineer at Certkiller .com. The topology of the Certkiller .com network is displayed in the exhibit. Router Certkiller A is unable to reach router Certkiller B. Both routes are running IOS version 12.0. After reviewing the command output and the network topology exhibit, what is the most likely cause of the problem?
A.Incorrect bandwidth configuration
B.Incorrect LMI configuration
C.Incorrect map statement
D.Incorrect IP address

Answer: C
Study the exhibit. The routers have been configured with wrong DLCI.

QUESTION 430
You are the network administrator at Certkiller . The routing table on a Certkiller router is shown in the following graphic:

```
Certkiller#show ip route
...
Gateway of last resort is not set
C   192.168.14.0/24 is directly connected, Serial0/1
C   192.168.14.0/24 is directly connected, FastEthernet0/0
C   192.168.15.0/24 is directly connected, Serial0/0.102
C   192.168.20.0/24 is directly connected, Serial0/0.117
R   192.168.16.0/24 [120/1] via 192.168.15.2, 00:00:05, Serial0/0.102
R   192.168.17.0/24 [120/1] via 192.168.15.2, 00:00:05, Serial0/0.102
R   192.168.30.0/24 [120/2] via 192.168.20.2, 00:00:25, Serial0/0.117
R   192.168.19.0/24 [120/1] via 192.168.20.2, 00:00:25, Serial0/0.117
R   192.168.21.0/24 [120/3] via 192.168.20.2, 00:00:25, Serial0/0.117
R   192.168.214.0/24 [120/1] via 192.168.14.2, 00:00:22, FastEthernet0/0
```


The router receives an IP packet with a source IP address of 192.168.214.20 and a destination address of 192.168.22.3.
What will the router do with this packet?
A. It will encapsulate the packet as Frame Relay and forward it out of interface Serial 0/0.117.
B.It will drop the packet and send an ICMP Destination Unreachable message out interfaceFastEthernet0/0.
C.It will forward the packet out of interface Serial 0/1 and send an ICMP Echo Reply message out of interface Serial
0/0.102.

D.It will encapsulate the packet to an APR frame and forward it out ofFastEthernet0/0.

Answer: B

QUESTION 431
You are the network administrator at Certkiller . You are asked to provide an ISDN WAN link for the Certkiller network. A modular Cisco router with 2 serial connections and a BRI/U interface is the only available router. You want to adapt this router for the ISDN connection.
What should you do?
A.Do nothing. The router is already suitable.
B.Purchase and install a BRI WAN interface in the router.
C.Purchase an external NT1 to terminate the local loop.
D.Purchase and install a TA/NT1 device on the router.

Answer: A

Explanation:
company is simply plugged directly into the router's BRI interface.This is true for modern router interfaces.Legacy ISDN
connections required the use of additional hardware, such as an NT1 device in order to provide the correct ISDN
signaling between the router and the carrier's ISDN network.
Reference:
CCNA SelfStudy CCNA ICND exam certification Guide (Cisco Press, ISBN 158720083X) Page 331

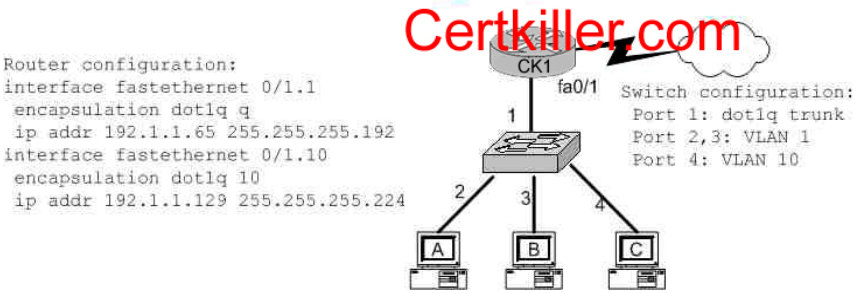
QUESTION 432
Your frame relay network uses DLCI information on each of the PVC's.What is the purpose of them?
A.They determine the encapsulation type employed by the Frame Relay.
B.They identify the logical circuit between a local router and a Frame Relay WAN switch.
C.They represent the physical address of the router.
D.They represent thekeepalivesin the maintenance of PVC.

Answer: B

Explanation:
Routers use the datalink connection identifier (DLCI) as the Frame Replay address, which identifies the VC over which
the frame should travel.
Data Link Connection Identifiers are the "hardware address" on a Frame Relay network. They identify a routers PVC
to the Frame Relay switch.
Reference:
CCNA SelfStudy CCNA ICND exam certification Guide (Cisco Press, ISBN 158720083X) page 377
Incorrect Answers:
A.DLCI information is not used to determine the encapsulation of the frame relay circuit in any way.
C.A DLCI is used at layer two, but it is a separate identifier that is not related to the hardware MAC address of

any
device.
D.The function of akeepaliveis handled by LMI in a frame network, not the DLCI

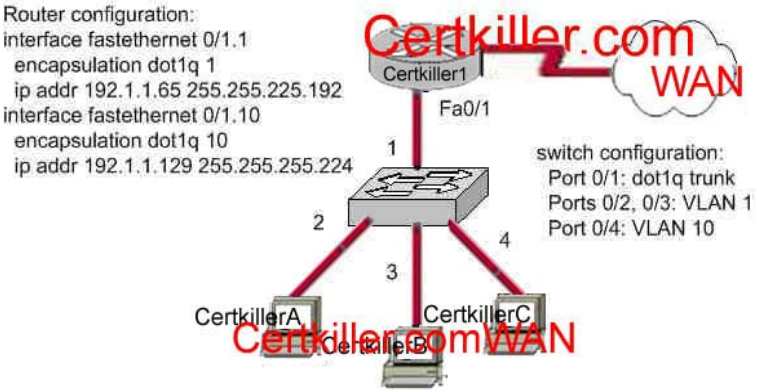
QUESTION 433



Which of the following are valid configuration values for the host shown in the graphic? (Choose three)
A.host A IP address: 192.1.1.65
B.host A subnet mask: 255.255.255.224
C.host B IP address: 192.1.1.125
D.host B default gateway: 192.1.1.65
E. host C IP address: 192.1.1.166
F.host C subnet mask: 255.255.255.224

Answer: C, D, F

QUESTION 434
Network topology Exhibit



You work as a network engineer at Certkiller .com. The topology of the Certkiller .com network is displayed in the exhibit. Which of the following are valid configuration values for the hosts? Select three
A.Host Certkiller 1 IP address: 192.1.1.85
B.Host Certkiller 1 subnet mask: 255.255.255.224
C.Host Certkiller 2 IP address: 192.1.1.125
D.Host Certkiller 2 default gateway: 192.1.1.85
E.Host Certkiller 3 IP address: 192.1.1.166
F.Host Certkiller 3 subnet mask: 255.255.255.224

Answer: A, C, F

Explanation: The answers A and C are right, because the ip address
192.1.1.85 and 192.1.1.125 are in the same subnet192.1.1.64 as the ip address of thesubinterface0/1.1.The answer e
is wrong, because the network address ofthe ip address 192.1.1.166 is 192.1.1.160.