Part 4

QUESTION 301

Certkiller .com is currently running a Frame Relay network in a hub and spoke topology. To ease the WAN bandwidth bottleneck, Certkiller would like to configure compression in an effort to optimize WAN links. Certkiller does use multiple protocols and other applications that require that the layer 2 header remains intact.
Which type of compression should Certkiller use?

A. Link compression
B. Payload compression
C. TCP/IP header compression
D. MPPC

Answer: B

Explanation:
Frame Relay Payload Compression
Layer 2 payload compression involves the compression of the payload of a Layer 2 WAN protocol, such as PPP, Frame Relay, High-Level Data Link Control (HDLC), X.25, and Link Access Procedure, Balanced (LAPB). The Layer 2 header is untouched by the act of compression. However, the entire contents of the payload (that include higher-layer protocol headers) are compressed.

QUESTION 302

You need a strict priority queuing mechanism to support the VOIP used in the Certkiller network. Which two queuing methods allow for strict priority queuing of delay sensitive applications? (Choose two)

A. Flow-based WFQ
B. Class-based WFQ
C. LLQ
D. CQ
E. PQ

Answer: C, E

Explanation:
LLQ:
LLQ is a feature that provides a strict PQ to Class-Based Weighted Fair Queuing (CBWFQ). LLQ enables a single strict PQ within CBWFQ at the class level. With LLQ, delay-sensitive data (in the PQ) is dequeued and sent first. In a VoIP with LLQ implementation, voice traffic is placed in the strict PQ.
Priority Queueing:
Priority Queueing strictly gives priority queues absolute preferential treatment over low

priority queues. Important traffic, given the highest priority, always takes precedence over less important traffic.

QUESTION 303
Certkiller .com's network policy states that voice traffic should be serviced before other non-essential application traffic such as http and ftp. Non-essential traffic starvation is not an issue.
Which quality of service method should Certkiller employ?

A. Random early detect
B. Weighted fair queuing
C. Weighted round robin
D. Priority queuing

Answer: D

Explanation:
Priority Queueing:
PQ allows you to define how traffic is prioritized in the network. You configure four traffic priorities. You can define a series of filters based on packet characteristics to cause the router to place traffic into these four queues; the queue with the highest priority is serviced first until it is empty, then the lower queues are serviced in sequence.
During transmission, PQ strictly gives priority queues absolute preferential treatment over low priority queues; important traffic, given the highest priority, always takes precedence over less important traffic. Packets are classified based on user-specified criteria and placed into one of the four output queues-high, medium, normal, and low-based on the assigned priority.
Priority Queueing
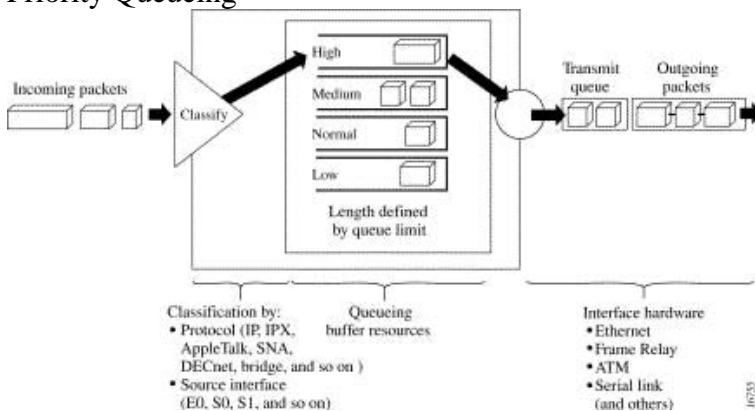
When a packet is to be sent out an interface, the priority queues on that interface are scanned for packets in descending order of priority. The high priority queue is scanned first, then the medium priority queue, and so on. The packet at the head of the highest queue is chosen for transmission. This procedure is repeated every time a packet is to be sent.

QUESTION 304
A Certkiller router was configured as shown below:

```
Router(config)#policy-map policy1
Router(config-pmap)#class class1
Router(config-pmap-c)#bandwidth 3000
Router(config-pmap-c)#queue-limit 30
Router(config-pmap-c)#exit
Router(config-pmap)#class class2
Router(config-pmap-c)#bandwidth 2000
Router(config-pmap-c)#exit
```

Examine the configuration.
When using CBWFQ, what will happen to UDP packets if their destination queue is full?

A. The router will send a BECN message to the host.
B. The packet will be sent to the class-default queue.
C. The host will resend the packet if it does not receive an ACK message.
D. Tail dropping will occur.

Answer: D

Explanation:
In CBWFQ, after a queue has reached its configured queue limit, enqueueing of additional packets to the class causes tail drop or packet drop to take effect, depending on how class policy is configured.
Tail drop is used for CBWFQ classes unless you explicitly configure policy for a class to use WRED to drop packets as a means of avoiding congestion. Note that if you use WRED packet drop instead of tail drop for one or more classes comprising a policy map, you must ensure that WRED is not configured for the interface to which you attach that service policy.

QUESTION 305
You need to configure Custom Queuing on one of the Certkiller routers. Which two items are required when configuring custom queuing? (Choose all that apply)

A. Define the custom queue.
B. Specify the maximum size of the queues.
C. Define the available bandwidth to each queue.
D. Create a default queue.
E. Assign packets to the queue.

Answer: A, B, E

Explanation:
You must follow certain required, basic steps to enable custom queueing for your network. In addition, you can choose to assign packets to custom queues based on protocol type, interface where the packets enter the router, or other criteria you specify. The following sections outline these minimum configuration tasks:
• Define the Custom Queue List
• Specify the Maximum Size of the Custom Queues

• Assign Packets to Custom Queues
Reference:
http://www.cisco.com/en/US/products/sw/iosswrel/ps1828/products_configuration_guide_ch
apter09186a00800ca599.html#4655

QUESTION 306
What is the default queueing method used on Cisco router interfaces running at or
below 2 Mbps?

A. CBWFQ
B. LLQ
C. WFQ
D. FIFO
E. PQ

Answer: C

Explanation:
The default queuing method for all interfaces that are E1/T1 (2 Mbps) or below is Weighted
Fair Queuing. For all interfaces above 2 Mbps, the default queuing mechanism is First In,
First Out, (FIFO).

QUESTION 307
When CBWFQ is being used, what is 25 percent of the total available bandwidth
reserved for?

A. The highest priority class
B. Routing traffic
C. Low volume traffic
D. High volume traffic
E. Delay sensitive traffic
F. None of the above

Answer: B

Explanation:
With CBWFQ, You can configure class policies for as many classes as are defined on the
router, up to the maximum of 64. However, the total amount of bandwidth allocated for all
classes included in a policy map to be attached to a VC must not exceed 75 percent of the
available bandwidth of the VC. The remaining 25 percent of available bandwidth is used for
encapsulation, such the layer 2 encapsulations, routing and best-effort traffic, and other
functions that assume overhead.

QUESTION 308
The Certkiller network needs to implement Quality of Service Traffic Shaping across
their WAN in order to prioritize their important traffic. Which of the following are

QoS Traffic shaping tools provided by Cisco (Choose 2)?

A. BECN
B. RSVP
C. FECN
D. GTS
E. FRTS
F. DE

Answer: D, E

Explanation:
Cisco's QoS software solutions include two traffic shaping tools -- generic traffic shaping (GTS) and Frame Relay traffic shaping (FRTS) -- to manage traffic and congestion on the network. GTS provides a mechanism to control the traffic flow on a particular interface. It reduces outbound traffic flow to avoid congestion by constraining specified traffic to a particular bit rate (also known as the token bucket approach), while queuing bursts of the specified traffic. FRTS provides parameters that are useful for managing network traffic congestion. These include committed information rate (CIR), FECN and BECN, and the DE bit. For some time, Cisco has provided support for FECN for DECnet, BECN for SNA traffic using direct LLC2 encapsulation via RFC 1490, and DE bit support. The FRTS feature builds on this Frame Relay support with additional capabilities that improve the scalability and performance of a Frame Relay network, increasing the density of virtual circuits and improving response time. More information can be found at: this site

---

QUESTION 309
In the Certkiller frame relay network, traffic shaping needs to be configured on one of the routers. Which of the following is the first configuration step necessary to enable frame relay traffic shaping?

A. Specify the FECN for traffic adaptation.
B. Specify a queuing technique to be used on a connection.
C. Specify the BECN for traffic adaptation.
D. Specify and define map class.

Answer: D

Explanation:
The following steps are needed to properly configure Frame Relay Traffic Shaping:
Step 1: Specify a map class to be defined with the map-class frame-relay map classname command.
Step 2: Define the map class. When you define a map class for Frame Relay, you can:
• Define the average and peak rates (in bits per second) allowed on virtual circuits associated with the map class.
• Specify that the router dynamically fluctuate the rate at which it sends packets depending on the BECNs it receives.

• Specify either a custom queue list or a priority queue group to use on virtual circuits associated with the map class.
• Once you have defined a map class with queuing and traffic shaping parameters, enter interface configuration mode and enable Frame Relay encapsulation on an interface with the encapsulation frame relay command, discussed earlier in this chapter.
Step 4: Enable Frame Relay traffic shaping on an interface with the frame-relay trafficshaping command. Enabling Frame Relay traffic shaping on an interface enables both traffic shaping and per-virtual circuit queuing on all the PVCs and SVCs on the interface. Traffic shaping enables the router to control the circuit's output rate and react to congestion notification information if also configured.
Step 5: Map a map class to all virtual circuits on the interface with the frame-relay class map class-name command. The map class-name argument must match the map class-name of the map class you configured.

QUESTION 310
You want to increase the throughput of your slow speed lines through the use of hardware compression. By using Cisco hardware compression adapters, what compression options can be supported? (Choose all that apply)

A. IPX advanced compression
B. IP payload compression V8
C. frame relay FRF.9 stacker compression
D. PPP stacker compression

Answer: C, D

Explanation:
There are no industry-standard compression specifications, but Cisco IOS(r) software supports several third-party compression algorithms, including Hi/fn Stac Limpel Zif Stac (LZS), Predictor, and Microsoft Point-to-Point Compression (MPPC). These compress data on a per-connection basis or at the network trunk level.
Compression can take place on an entire-packet, header-only, or payload-only basis. The success of these solutions are easy to measure via compression ratio and platform latency.
Cisco IOS software supports the following data compression products:
• FRF.9, for Frame Relay compression
• Link Access Procedure, Balanced (LAPB) payload compression using using LZS or Predictor High-Level Data Link Control (HDLC) using LZS
• X.25 payload compression of encapsulated traffic
• Point-to-Point Protocol (PPP) using LZS (Stacker), Predictor, and Microsoft Point-to-Point Compression (MPPC).
Reference:
Understanding Data Compression
http://www.cisco.com/en/US/tech/ CK7 13/ CK8 02/technologies_tech_note09186a00801b3b86.sh tml

---

QUESTION 311
You want to increase the throughput of your slow speed lines through the use of TCP compression on router CK1 . To enable TCP header compression on this router, what command should be used?

A. compress lapd set
B. frame-relay payload-compress
C. ppp compress
D. compress
E. ip tcp header-compression
F. compress all

Answer: E

Explanation:
You can compress the headers of your TCP/IP packets in order to reduce the size of your packets. TCP header compression is supported on serial lines using Frame Relay, HDLC, or PPP encapsulation. You must enable compression on both ends of a serial connection. RFC 1144 specifies the compression process. Compressing the TCP header can speed up Telnet connections dramatically. In general, TCP header compression is advantageous when your traffic consists of many small packets, not for traffic that consists of large packets. Transaction processing (usually using terminals) tends to use small packets and file transfers use large packets. This feature only compresses the TCP header, so it has no effect on UDP packets or other protocol headers.
When compression is enabled, fast switching is disabled. This condition means that fast interfaces like T1 can overload the router. Consider the traffic characteristics of your network before using this command.
To enable TCP header compression, "use the ip tcp header-compression" command in interface configuration mode.

QUESTION 312
You want router CK1 to prioritize low volume traffic over large data transfer session. Which traffic queuing method give a low-volume stream preferential service?

A. FIDO
B. Priority
C. Custom
D. Weighted Fair
E. Low Latency

Answer: D

Explanation:
WFQ is an automated scheduling method that provides fair bandwidth allocation to all network traffic. WFQ applies priority, or weights, to identified traffic to classify traffic into conversations and determine how much bandwidth each conversation is allowed relative to

other conversations. WFQ is a flow-based algorithm that simultaneously schedules interactive traffic to the front of a queue to reduce response time and fairly shares the remaining bandwidth among high-bandwidth flows. In other words, WFQ allows you to give low-volume traffic, such as Telnet sessions, priority over high-volume traffic, such as FTP sessions. WFQ gives concurrent file transfers balanced use of link capacity; that is, when multiple file transfers occur, the transfers are given comparable bandwidth.

QUESTION 313
Payload Compression is being done on the Certkiller network to increase the overall data throughput. What statement is true about payload compression?

A. Payload compression can be used in conjunction with TCP/IP header compression.
B. The payload compression algorithm uses Predictor or STAC to compress traffic into another data link layer such as PPP.
C. Payload compression is appropriate for virtual network services such as Frame Relay and ATM.
D. With payload compression the complete packet is compressed and the switching information in the header is not available.

Answer: C

Explanation:
Layer 2 payload compression involves the compression of the payload of a Layer 2 WAN protocol, such as PPP, Frame Relay, High-Level Data Link Control (HDLC), X.25, and Link Access Procedure, Balanced (LAPB). The Layer 2 header is untouched by the act of compression, making it a good fit for layer 2 virtual network technologies such as frame relay and ATM. However, the entire contents of the payload (that include higher-layer protocol headers) are compressed.
Incorrect Answers:
A: You do not implement both Layer 2 payload compression and TCP/IP header compression concurrently because:
• It is redundant and wasteful.
• Often, the link does not come up or does not pass IP traffic.
Use only Layer 2 payload compression, rather than both Layer 2 payload compression and TCP/IP header compression.
B: Although Payload Compression is compressed by either a form of the "stacker" algorithm (based on the industry standard Lemple Ziv algorithm or the "predictor" algorithm, it is not used to compress traffic into a separate data link layer.
D: The Layer 2 header is untouched by the act of compression.

QUESTION 314
Which policy map configuration command can be used to mitigate the problem of the TCP global synchronization?

A. random-detect
B. queue-limit 10

C. compression header ip tcp
D. priority 24

Answer: A

Explanation:
Weighted Random Early Discard (WRED) avoids the globalization problems that occur when tail drop is used as the congestion avoidance mechanism on the router. Global synchronization occurs as waves of congestion crest only to be followed by troughs during which the transmission link is not fully utilized. Global synchronization of Transmission Control Protocol (TCP) hosts, for example, can occur because packets are dropped all at once. Global synchronization manifests when multiple TCP hosts reduce their transmission rates in response to packet dropping, then increase their transmission rates once again when the congestion is reduced.
RED is used to drop packets before congestion issues occur. To configure WRED, use the "random-detect" configuration command. This can be done in either interface configuration mode or in policy map mode.

QUESTION 315
Which of the following symptoms suggest congestion on a serial line? (Choose three)

A. The connectivity is intermittent.
B. The hardware in the serial link failed
C. The connection fails at a particular time of day.
D. The connection fails as load increases.
E. The connection has never worked.

Answer: A, C, D

Explanation:
With regard to general serial link symptoms, intermittent connectivity can indicate a faulty router interface card or cable, a faulty CSU/DSU, a timing problem, or a congested serial line.
A connection that fails as load increases can indicate a dirty or congested serial line, while a connection that fails at a particular time of day is almost certainly due to an overused/congested serial line.
A connection that fails after some period of normal operation can indicate any of the following:
• a cable running too close to EMI sources
• a hardware failure in the serial link
• incorrect routing tables
• software problems such as buffer misses
If a connection has never worked, it may indicate that the serial facility is not actually provided or has failed.
Symptoms and problems specific to Frame Relay can usually be attributed to either Frame Relay being misconfigured on the router or a misconfigured Frame Relay switch. You should

also check for a faulty interface card or cable.
Incorrect Answers:
B: If there is a hardware problem, the issue would be a physical layer problem most likely causing a hard outage. This is not related to a congestions issue.
C: If the connection has never worked from the beginning, then it means that traffic isn't going through, so there can't be any congestion because there's no traffic congesting the lines.

QUESTION 316
Certkiller A is connected via a Point to Point link to a Juniper router as displayed below:

Router Certkiller A is a Cisco router and it can't ping the Juniper router across the PPP link. You enter this command to Router A:
RTR Certkiller A#show interface s0/0
This is what you notice in the command output:
serial 0/0 is up, line protocol is down
What is the most likely reason for the line protocol being down?

A. The IP addresses are not in the same subnet.
B. The IP address is a non routable private address.
C. There is a bad cable connecting the two routers.
D. The encapsulation type on RTR A Serial0/0 interface is incorrect.

Answer: D

Explanation:
The default encapsulation type on a Cisco serial interface is HDLC, which is Cisco proprietary and only good for a Cisco device. If no other encapsulation command is configured (none is shown in the above information) for the PPP link, it stays on HDLC by default, and the line protocol doesn't work for a non Cisco device. When connecting a private line (point to point) connection to a non-Cisco router, always use PPP encapsulation.

QUESTION 317
What commands would you execute to troubleshoot and verify a PPP session? (Choose two)

A. The show interfaces command
B. The debug PPP session command
C. The show PPP command
D. The debug PPP negotiation command
E. The debug ppp dialer command

Answer: A, D

Explanation:
The command show interfaces will show you detailed statistics for all interfaces configured.
The command debug PPP negotiation will show you real time PPP negotiations.
References: CCNP Remote Access Exam Certification Guide, page 112, Brian Morgan &
Craig Dennis, Cisco Press 2001, ISBN 1-58720-003-1
http://www.cisco.com/univercd/cc/td/doc/product/software/ios120/12cgcr/inter_r/irshowin.ht
m#1017387

QUESTION 318
A Certkiller Cisco router running IOS Version 12.0 is installed. Which debug command
would you use to troubleshoot an unsuccessful CHAP authentication on this router?

A. debug ppp errors
B. debug ppp negotiation
C. debug authentication chap
D. debug ppp tasks

Answer: B

Explanation:
The debug ppp negotiation and debug ppp authentication commands are useful in
enabling the administrator to view the real-time communication between PPP configured
devices. They are mentioned together because they are often implemented simultaneously.
The "debug ppp negotiation" command was added after IOS version 12.0. Prior to that, only
the "debug ppp authentication" command was supported.
Incorrect Answers:
A, C, D: These are all invalid Cisco IOS commands.
Reference: CCNP Remote Access Exam Certification Guide, page 112, Brian Morgan &
Craig Dennis, Cisco Press 2001, ISBN 1-58720-003-1

QUESTION 319
You are setting up link authentication on router CK1 and want to verify that it is
working properly. Which command will enable you to observe the authentication
process of a connection being set up?

A. debug modem
B. show dialer

C. debug ppp chap
D. debug ppp authentication

Answer: D

Explanation:
To determine if the router is performing CHAP or PAP authentication, look for the following lines in the debug ppp negotiation and debug ppp authentication output:
Look for CHAP in the AUTHENTICATING phase.
*Mar 7 21:16:29.468: BR0:1 PPP: Phase is AUTHENTICATING, by this end
*Mar 7 21:16:29.468: BR0:1 CHAP: O CHALLENGE id 5 len 33 from "maui-soho-03" PAP
Look for PAP in the AUTHENTICATING phase.
*Mar 7 21:24:11.980: BR0:1 PPP: Phase is AUTHENTICATING, by both
*Mar 7 21:24:12.084: BR0:1 PAP: I AUTH-REQ id 1 len 23 from "maui-soho-01"
Reference:
http://www.cisco.com/warp/public/471/ppp_authen_ts_fl.html#5

QUESTION 320
While logged into router CK1 , you are curious to see the Dial on Demand Routing (DDR) events that are taking place. Which of the following commands will you use to display these events in real time?

A. show dialer
B. debug dialer events
C. debug ppp dialer
D. debug dialer negotiation

Answer: B

Explanation:
Whenever you're asked a question with the key words 'real-time' then chances are it's a debug command. The debug dialer command is to see in real time what's attempting to cross the ISDN link. The EXEC command: debug dialer events shows real time information about packets as they are received on a dialer interface. When DDR is enabled, information concerning the cause of the call (interface name, source and destination address of packets) is included as well.

QUESTION 321
Drag 3 of the ISDN troubleshooting commands from the left, to their matching descriptions on the right:

Debug isdn q931		Place here	Determine PAP or CHAP authentication
Show dailer	Certkiller.com	Place here	Display layer 2 access procedures on the D channel
Debug isdn q911		Place here	Display call setup and teardown information
Debug isdn q921			

Answer:

Show dailer	Determine PAP or CHAP authentication
Debug isdn q921	Display layer 2 access procedures on the D channel
Debug isdn q911	Certkiller.com
Debug isdn q931	Display call setup and teardown information

Explanation:
Use the debug isdn q921 EXEC command to display data link layer (Layer 2) access procedures that are taking place at the router on the D channel (LAPD) of its Integrated Services Digital Network (ISDN) interface.
debug isdn q931
Use the debug isdn q931 EXEC command to display information about call setup and teardown of ISDN network connections (Layer 3) between the local router (user side) and the network
Reference:
http://www.cisco.com/univercd/cc/td/doc/product/software/ios120/12supdoc/debug_r/dipx.pdf

---

QUESTION 322
Which of the following commands would be the most useful when troubleshooting a Frame Relay network? (Choose two)

A. show frame-relay map
B. show ip route
C. debug neighbors
D. debug frame-relay topology
E. All of the above.

Answer: A, B

Explanation:
Use this command to determine if frame-relay inverse-arp resolved a remote IP address to a local DLCI. This command is not enabled for point-to-point subinterfaces. It is only useful for multipoint interfaces and subinterfaces. Sample output is shown below:

RouterA#show frame-relay map
Serial0 (up): ip 157.147.3.65 dlci 980(0x3D4,0xF440), dynamic,
broadcast,, status defined, active
The "show ip route command can also be a usefull troubleshooting tool in nearly every
topology, since it will display all of the routes known in the routing table, how those routes
were learned, and from which neighbors.
Incorrect Answers:
C, D: These are invalid IOS commands.
http://www.cisco.com/en/US/tech/ CK7 13/ CK2 37/technologies_tech_note09186a008014f8a7.sh
tml#topic20

QUESTION 323
Which show command can you use in a Frame Relay network to verify line
configuration, protocol, and LMI status on the serial interface of a Certkiller router?

A. show interface
B. show frame relay lmi
C. show frame-relay pvc
D. show frame-relay status
E. show frame-relay interface
F. show frame-relay map

Answer: C

Explanation:
To display statistics about permanent virtual circuits (PVCs) for Frame Relay interfaces, use
the show frame-relay pvc command in privileged EXEC mode.
RouterA# show frame-relay pvc
PVC Statistics for interface Serial0 (Frame Relay DTE)
DLCI = 666, DLCI USAGE = UNUSED, PVC STATUS = DELETED, INTERFACE = Serial0
input pkts 0 output pkts 0 in bytes 0
out bytes 0 dropped pkts 0 in FECN pkts 0
in BECN pkts 0 out FECN pkts 0 out BECN pkts 0
in DE pkts 0 out DE pkts 0
pvc create time 0:03:18 last time pvc status changed 0:02:27
Num Pkts Switched 0
DLCI = 980, DLCI USAGE = LOCAL, PVC STATUS = ACTIVE, INTERFACE = Serial0
input pkts 19 output pkts 87 in bytes 2787
out bytes 21005 dropped pkts 0 in FECN pkts 0
in BECN pkts 0 out FECN pkts 0 out BECN pkts 0
in DE pkts 0 out DE pkts 0
pvc create time 1:17:47 last time pvc status changed 0:58:27
The PVC can have four possible states. These are shown by the PVC STATUS field as
follows:
ACTIVE - PVC is up and functioning normally.
INACTIVE - PVC is not up end-to-end. This may be because either there is no mapping (or

incorrect mapping) for the local DLCI in the frame-relay cloud or the remote end of the PVC is deleted.
DELETED - Either the Local Management Interface (LMI) is not exchanged between the router and the local switch, or the switch does not have DLCI configured on the local switch.
STATIC - no keepalive configured on the frame-relay interface of the router.

QUESTION 324
Which one of the following show commands would you use to view a permanent virtual circuit (PVC) associated with the Certkiller network?

A. show ip route
B. show frame-relay lmi
C. show frame-relay pvc
D. show frame-relay map
E. show frame-relay status

Answer: D

Explanation:
The show frame-relay map EXEC will show you current map entries and information about the connections (DLCI mappings created).
Reference:
Page 291 of Cisco Press BCRAN Second Edition


QUESTION 325
Your junior administrator has been trying to connect his Cisco router to the internet via an ISDN BRI. He's receiving ISDN SETUP messages but he isn't getting a CONNECT message, so he asks you for help. What is the most likely cause of his problem? (Choose all that apply.)

A. The ISDN BRI line is not working at Layer 1.
B. The ISDN BRI line is not working at Layer 2.
C. The ISDN BRI line may not be configured correctly to handle the call.
D. The ISDN BRI line is not working at Layer 3.
E. The ISDN BRI line is working at layer 2 but not at layer 1.

Answer: C, D

Explanation:
The setup procedure for ISDN calls is very similar to that of other circuit-switched technologies. It begins with a request, which is acknowledged. The acknowledging switch then forwards the setup request to the next switch in the line, and so on. Once the called party is reached, a connect message is sent, which also must be acknowledged.
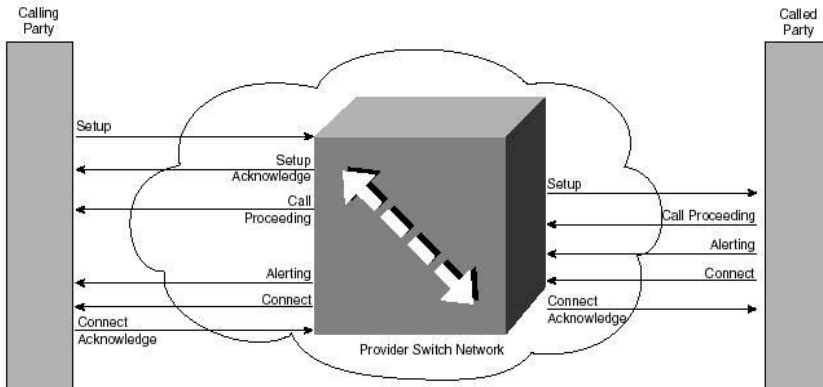
ITU-T Q.931 is specified as the protocol for Layer 3 of the D channel. The protocol messages and their rules for exchange are derived from the DSS1 protocol suite. And if you have the problem mentioned, you have probably configured the BRI settings wrong. Reference:
Cisco Press - BCRAN - 642-821 - Exam Certification Guide 2004 (ISBN 1-58720-084-8) Page 154 & 155

QUESTION 326
You are tasked with troubleshooting a problem with the Frame Relay connection at one of your sites. Upon arrival at a remote location, you start your diagnostics and it comes to your attention that the Frame Relay PVC is in an inactive state on the router. What do you suspect is the cause of this problem?

A. PVC is in DOWN state on the remote router.
B. PVC is not configured on local router.
C. PVC is not configured on the Frame Relay switch.
D. PVC is in a DELETED state on the remote router.

Answer: D

Explanation:
The show frame-relay pvc command displays the status of each configured connection as well as traffic statistics. This command is also useful for viewing the number of backward explicit congestion notification (BECN) and forward explicit congestion notification (FECN) packets received by the router. The PVC STATUS can be active, inactive, or deleted.
• Active state - Indicates that the connection is active and that routers can exchange data.
• Inactive state - Indicates that the local connection to the Frame Relay switch is working, but the remote router's connection to the Frame Relay switch is not working.
• Deleted state - Indicates that no LMI is being received from the Frame Relay switch, or there is no service between the CPE router and Frame Relay switch.
If you enter show frame-relay pvc, you will see the status of all the PVCs configured on the router. If you specify any given PVC, you will only see the status of that PVC. In the figure, the show frame-relay pvc 110 command only displays the status of PVC 110.
Note for Answer A: There is NO DOWN state for a router. In this scenario the remote router

is not functioning properly.
Reference:
Cisco Press - Building Cisco Remote Access Networks Student Guide v1.1 Page 11-7 & 11-12

QUESTION 327
The following output was seen while troubleshooting a frame relay issue:

```
R8#debug frame-relay packet
Frame Relay packet debugging is on
R8#
R8#ping 172.16.81.3

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 172.16.81.3, timeout is 2 seconds:

Serial8/0:Encaps failed--no map entry link 7(IP)
Serial8/0:Encaps failed--no map entry link 7(IP).
Serial8/0:Encaps failed--no map entry link 7(IP).
Serial8/0:Encaps failed--no map entry link 7(IP).
Serial8/0:Encaps failed--no map entry link 7(IP).
Success rate is 0 percent (0/5)
```

Based on the information above, what is the underlying cause of this problem?

A. Missing routing table entry.
B. Frame Relay encapsulation mismatch.
C. Missing MAC address
D. Missing inverse ARP entry.
E. Frame Relay LMI type mismatch.

Answer: D

Explanation:
You are not able to ping your own IP address on a multipoint Frame Relay interface. This is because Frame Relay multipoint (sub)interfaces are non-broadcast, (unlike Ethernet and point-to-point interfaces High-Level Data Link Control [HDLC]), and Frame Relay point-topoint sub-interfaces.
Furthermore, you are not able to ping from one spoke to another spoke in a hub and spoke configuration. This is because there is no mapping for your own IP address (and none were learned via Inverse ARP). But if you configure a static map (using the frame-relay map command) for your own IP address (or one for the remote spoke) to use the local DLCI, you can then ping your devices.
Reference:
http://www.cisco.com/en/US/tech/ CK7 13/ CK2 37/technologies_tech_note09186a008014f8a7.sh tml

QUESTION 328
Study the partial output of the configuration file for router CK1 below
interface BRI0
description connected to ntt 81019998887654
ip address 10.12.15.5 255.255.255.0
encapsulation ppp
dialer idle-timeout 30
dialer load-threshold 40 either

dialer map ip 10.12.15.8 name Certkiller B 81019998888901
dialer map ip 10.12.15.9 name Certkiller C 81019998881234
dialer map ip 10.12.15.4 name Certkiller D 81019998881122
dialer-group 1
ppp authentication pap
ppp multilink
What's true about the type of dial-on demand routing being implemented?

A. By configuring legacy DDR on interface BRI0, calls made to all three sites will use
the same communication parameters.
B. Calls made using BRI0 will attempt to use the authentication configured for the dial
rotary, and if unsuccessful, will use pap authentication.
C. By configuring BRI0 as a member of a dial-group 1, communications parameters
assigned to the group will override those configured on the interface.
D. The dialer profile communication parameters will override those configured directly
on interface BRI0.

Answer: A

Explanation:
dialer map protocol next-hop-address [name hostname] [speed 56|64]
[broadcast]
[dial-string[:isdn-subaddress]
Dialer map - Configures a serial interface or ISDN interface to call one or multiple sites. The
name parameter refers to the name of the remote system. The speed parameter is the line
speed in kilobits per second to use. The broadcast parameter indicates that broadcasts should
be forwarded to this address. The dial-string [:isdn-subaddress] is the number to dial to reach
the destination and the optional ISDN subaddress.
Incorrect Answers:
B: Although PAP authentication has been configured, there is no dialer interface or dialer
rotary to use.
C, D: Dialer profiles and dialer groups are not configured.
Reference:
Cisco Press - Building Cisco Remote Access Networks Student Guide v1.1 Page 7-32

QUESTION 329
Which of the following commands are useful in verifying and troubleshooting PPP
sessions (Choose two)

A. debug PPP negotiation
B. debug PPP session
C. show interfaces
D. show PPP

Answer: A, C

Explanation:
• Use the show interfaces command to display status and counter information about an interface.
• The debug ppp negotiation command is a great tool for troubleshooting the PPP Link Control protocol activities such as authentication, compression, and multilink.
• show PPP and debug PPP session commands do not exist
Reference:
Cisco Press - CiscoPedia v3.0

QUESTION 330
Which of the following debug commands could you use to troubleshoot Layer 3 ISDN information? (Choose two)

A. debug isdn q931
B. debug isdn q921
C. debug isdn network
D. debug isdn event
E. debug isdn layer 3

Answer: A, D

Explanation:
Use the debug isdn q931 EXEC command to display information about call setup and teardown of ISDN network connections (Layer 3) between the local router (user side) and the network. The ISDN network layer interface provided by the access router conforms to the user interface specification defined by ITU-T recommendation Q.931, supplemented by other specifications such as for switch types VN2 and VN3. The router tracks only activities that occur on the user side, not the network side, of the network connection.
The debug isdn q931 command output is limited to commands and responses exchanged during peer-to-peer communication carried over the D channel. This debug information does not include data transmitted over the B channels. The peers (network layers) communicate with each other via an ISDN switch over the D channel.
The debug isdn events command .
Use the debug isdn q921 EXEC command to display data-link layer (Layer 2) access procedures that are taking place at the access router on the D channel (LAPD) of its ISDN interface. This command is useful when you want to observe signaling events between the access router and the ISDN switch. The ISDN data-link layer interface provided by the access router conforms to the user interface specification defined by ITU-T recommendation Q.921.
Reference:
Cisco Press - Building Cisco Remote Access Networks Student Guide v1.1 Page 7-65

QUESTION 331
You're a senior network technician at Test-King and its Friday afternoon and all of your junior administrators have left work early. While inspecting their workstations you realize that one of your junior administrators has left a debug command running.

On inspection of his monitor you see the following command output:
1d16h: %LINK-3-UPDPDOWN: Interface Serial3/0, changed state to up
*Mar 2 16:52:15.297: Se3/0 PPP: Treating connection as a dedicated
line
*Mar 2 16:52:15.441: Se3/0 PPP: Phase is AUTHENTICATING, by this end
*Mar 2 16:52:15.445: Se3/0 CHAP: O CHALLENGE id 7 len 29 from "NAS1"
With reference to the above output, which two statements are true? (Choose all that
apply.)

A. The client is attempting to setup a Serial Line Internet Protocol connection
B. This is a connection attempt to an async port.
C. The connection is established on serial interface 3/0.
D. The user is authenticating with the privileged mode password "NAS1".
E. The user is authenticating using CHAP.

Answer: C E

Explanation:
1. A CHAP challenge packet is built with the following characteristics:
01 = challenge packet type identifier
id = sequential number that identifies the challenge
random = a reasonably random number
3640-1 = the authentication name of the challenger
2. The id and random values are kept on the access server.
3. The challenge packet is sent to the caller. A list of outstanding challenges is maintained.
When using Chap authentication, the access server sends a challenge message to the remote
node after the PPP link is established. The remote node responds with a value calculated by
using a one-way hash function. The access server (NAS1) checks the response against its
own calculation of the expected hash value.
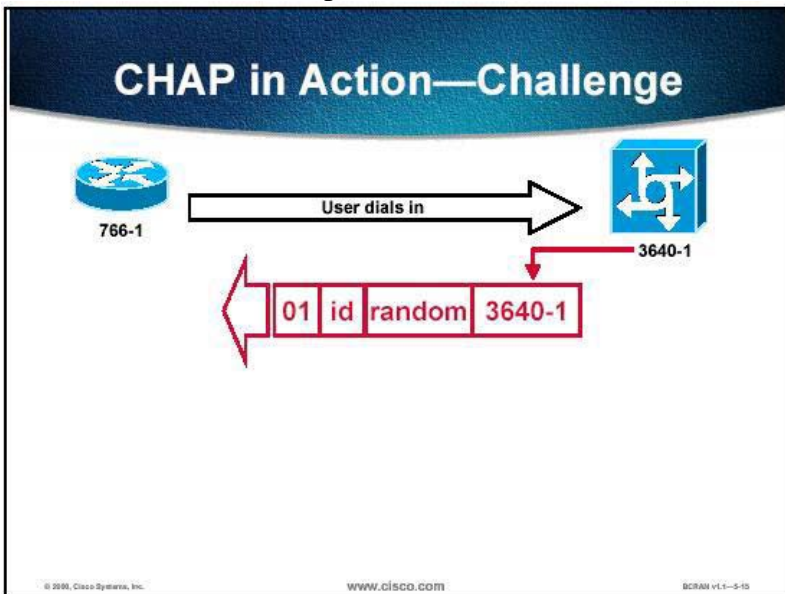
Reference:
Cisco Press - Building Cisco Remote Access Networks Student Guide v1.1 Page 5-17
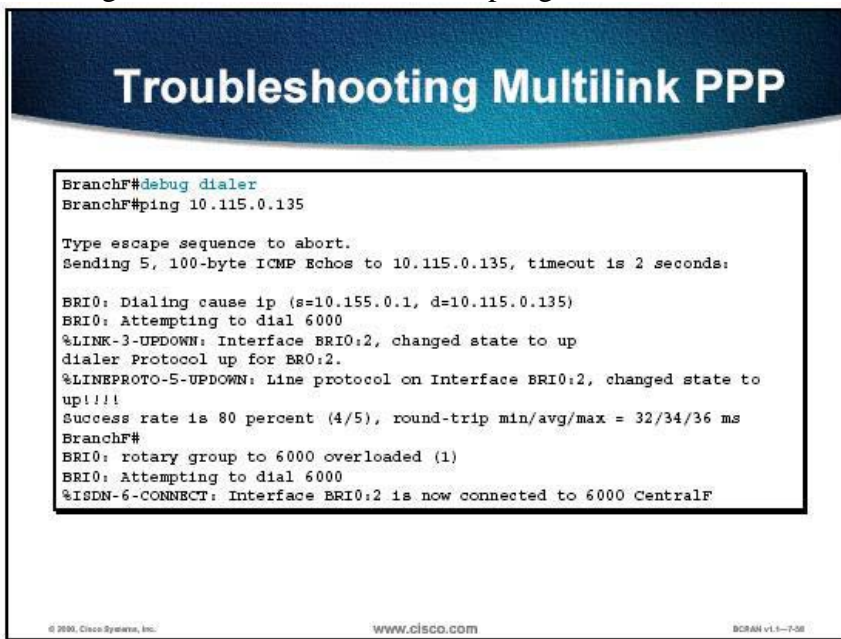

QUESTION 332
What command could a network analyst use if they wanted to analyze DDR events in real time?

A. debug ppp dialer
B. debug dialer
C. show dialer
D. debug dialer negotiation

Answer: B

Explanation:
There are many more commands and command outputs that are useful in troubleshooting the dial process in general. For instance, the debug dialer command is one of the best tools to use to figure out which traffic is attempting to traverse the ISDN link.

Incorrect Answers:
A, D: These are invalid Cisco IOS commands.
C: TO see events in real time, use the debug command, not the show command.
Reference:
Cisco Press - Building Cisco Remote Access Networks Student Guide v1.1 Page 7-63
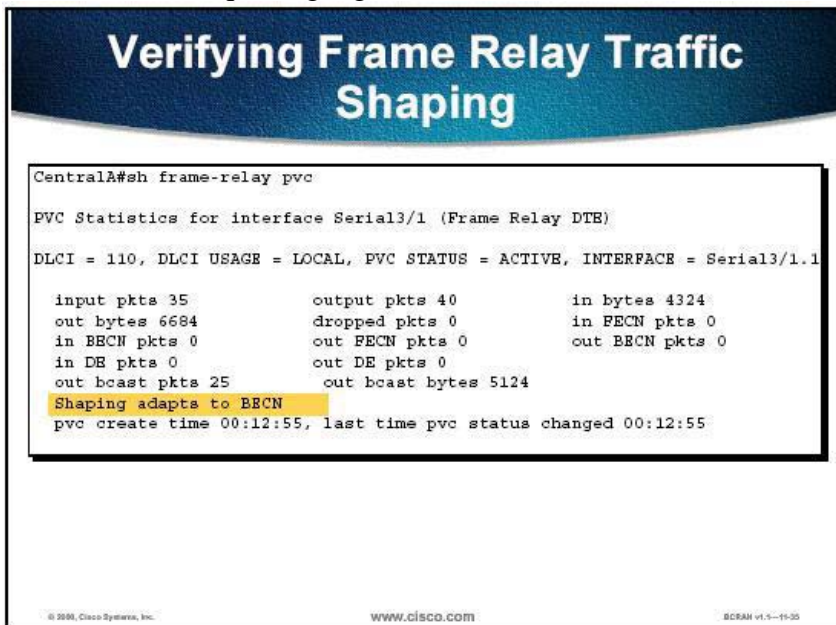

QUESTION 333
You're a specialized frame-relay contractor and you've just finished configuring a network. What command would you use to verify the frame-relay traffic-shaping parameters?

A. show frame-relay pvc
B. show frame-relay interface
C. show frame-relay status
D. show frame-relay map-class
E. None of the above

Answer: A

Explanation:
The show frame-relay pvc command includes the parameters used in traffic shaping, if enabled, and the queuing algorithm in use.

Reference:
Cisco Press - Building Cisco Remote Access Networks Student Guide v1.1 Page 11-39

QUESTION 334
You want to analyze the number of total BECN and FECN packet statistics on the serial interface of Certkiller 's main router. Which of the following commands would you use?

A. show frame-relay map
B. show frame-relay pvc
C. show frame-relay lmi
D. show interfaces

Answer: B

Explanation:
The show frame-relay pvc command displays the status of each configured connection as well as traffic statistics. This command is also useful for viewing the number of backward

explicit congestion notification (BECN) and forward explicit congestion notification (FECN) packets received by the router. The PVC STATUS can be active, inactive, or deleted.
If you enter show frame-relay pvc, you will see the status of all the PVCs configured on the router. If you specify a specific PVC, you will only see the status of that PVC. In the figure, the show frame-relay pvc 110 command only displays the status of PVC 110.

Reference:
Cisco Press - Building Cisco Remote Access Networks Student Guide v1.1 Page 11-12

QUESTION 335
Which of the following commands could a network technician use to view source and destination IP addresses of a DDR connection on an ISDN? (Choose all that apply.)

A. show dialer state
B. debug dialer
C. show spid
D. show dialer interface
E. None of the above

Answer: B, D

Explanation:
The "show dialer interface" command shows status and connection information regarding each B channel and the number to which the channel is connected. It also shows successful and failed calls.
The following examples are used to illustrate this:

```
BranchF#debug dialer
BranchF#ping 10.115.0.135

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 10.115.0.135, timeout is 2 seconds:

BRI0: Dialing cause ip (s=10.155.0.1, d=10.115.0.135)
BRI0: Attempting to dial 6000
%LINK-3-UPDOWN: Interface BRI0:2, changed state to up
dialer Protocol up for BR0:2.
%LINEPROTO-5-UPDOWN: Line protocol on Interface BRI0:2, changed state to
up!!!!
Success rate is 80 percent (4/5), round-trip min/avg/max = 32/34/36 ms
BranchF#
BRI0: rotary group to 6000 overloaded (1)
BRI0: Attempting to dial 6000
%ISDN-6-CONNECT: Interface BRI0:2 is now connected to 6000 CentralF
```

```
NASX#show dialer interface bri0
BRI0 - dialer type = ISDN

Dial String     Successes     Failures     Last called     Last status
5553872            6             0            19 secs         Successful
0 incoming call(s) have been screened.
BRI0: B-Channel 1
Idle timer (120 secs), Fast idle timer (20 secs)
Wait for carrier (30 secs), Re-enable (15 secs)
Dialer state is data link layer up
Dial reason: ip (s=10.1.1.8, d=10.1.1.1)

Interface bound to profile Dialer0

Time until disconnect 102 secs
Current call connected 00:03:19
Connected to 5553872 (system1)


BRI0: B-Channel 2
Idle timer (120 secs), Fast idle timer (20 secs)
Wait for carrier (30 secs), Re-enable (15 secs)
Dialer state is idle
```

Reference:
Cisco Press - Building Cisco Remote Access Networks Student Guide v1.1 Page 7-63
Cisco Press - Building Cisco Remote Access Networks Student Guide v1.1 Page 8-21

QUESTION 336
The Certkiller network is displayed in the following diagramm:
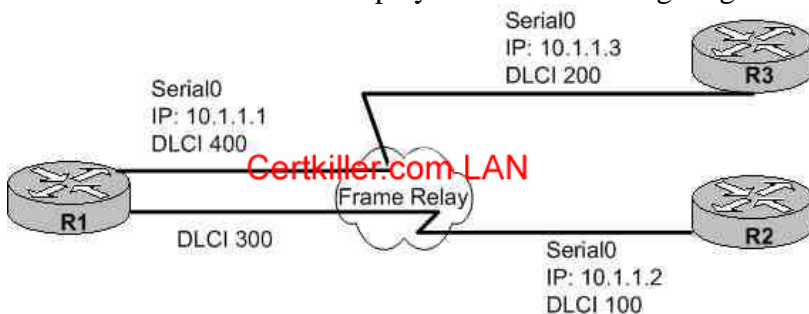
Router R2 is can successfully ping Router R1, but it can't ping Router 3. What is the set of frame-relay map ip commands can you use on router R2 to fix the problem?

A. frame-relay map ip 10.1.1.3 200
frame-relay map ip 10.1.1.1 400
B. frame-relay map ip 10.1.1.3 100
frame-relay map ip 10.1.1.1 100
C. frame-relay map ip 10.1.1.3 100
frame-relay map ip 10.1.1.1 400
D. frame-relay map ip 10.1.1.3 200

frame-relay map ip 10.1.1.1 300

Answer: D

Explanation:
If you take a look at the answer choices you'll see that all of them involve a series of two
frame-relay map ip (address) (DLCI) commands, and that the address sequence (10.1.1.3
& 10.1.1.1) are the same in all 4 answer choices. The only variable are the DLCI values. The
DLCI value used locally for each PVC is 300 for R1 and 200 for R3.

QUESTION 337
You are a network administrator at Certkiller and you've just entered the command
"debug frame-relay lmi." From this, you see the following:
Serial10/0(in): Status, myseq 72
RT IE 1, length 1, type 0
KA IE 3, length 2, yourseq 73, myseq 72
PVC IE 0x7 , length 0x3 , dlci 100, status 0x0
PVC IE 0x7 , length 0x3 , dlci 200, status 0x2
Serial10/0(out): StEng, myseq 73, yourseen 73, DTE up
datagramstart = 0x1346F34, datagramsize = 14
FR encap = 0x00010308
00 75 95 01 01 01 03 02 49 49
Considering the above output; what is the status of DLCI 100?

A. active
B. init
C. inactive
D. down
E. deleted

Answer: C

Explanation:
The possible values of the status field are explained below:
1. 0x0-Added/inactive means that the switch has this DLCI programmed but for some
reason (such as the other end of this PVC is down), it is not usable.
2. 0x2-Added/active means the Frame Relay switch has the DLCI and everything is
operational. You can start sending it traffic with this DLCI in the header.
3. 0x3-0x3 is a combination of an active status (0x2) and the RNR (or r-bit) that is set
(0x1). This means that the switch - or a particular queue on the switch - for this PVC
is backed up, and you stop transmitting in case frames are spilled.
4. 0x4-Deleted means that the Frame Relay switch doesn't have this DLCI programmed
for the router. But it was programmed at some point in the past. This could also be
caused by the DLCIs being reversed on the router, or by the PVC being deleted by the
telco in the Frame Relay cloud. Configuring a DLCI (that the switch doesn't have)
will show up as a 0x4.

Since the status for DLCI 100 is 0x0, the PVC is inactive.
Reference:
http://www.cisco.com/en/US/tech/ CK7 13/ CK2 37/technologies_tech_note09186a008014f8a7.sh
tml#topic20

QUESTION 338
If you wanted to view the state of ISDN interface BRI 0's first B channel on router CK1 ,
which IOS command would you use?

A. show interface BRI 0 1
B. show interface BRI 0 2
C. show dialer interface BRI 0
D. show dialer interface BRI 0.0
E. None of the above

Answer: A

Explanation:
Router# show interfaces bri 0 1
BRI0:1 is down, line protocol is down
Hardware is BRI
MTU 1500 bytes, BW 64 Kbit, DLY 20000 usec, rely 255/255, load 1/255
Encapsulation PPP, loopback not set, keepalive not set
LCP Closed
Closed: IPCP
Last input never, output never, output hang never
Last clearing of "show interface" counters never
Queuing strategy: fifo
Output queue 0/40, 0 drops; input queue 0/75, 0 drops
5 minute input rate 0 bits/sec, 0 packets/sec
5 minute output rate 0 bits/sec, 0 packets/sec
0 packets input, 0 bytes, 0 no buffer
Received 0 broadcasts, 0 runts, 0 giants
0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
0 packets output, 0 bytes, 0 underruns
0 output errors, 0 collisions, 7 interface resets
0 output buffer failures, 0 output buffers swapped out
0 carrier transitions
Reference:
http://www.cisco.com/univercd/cc/td/doc/product/software/ios121/121cgcr/dial_r/drdshoil.pd
f

QUESTION 339
Which one of the following show commands would you use to display what 'interesting
traffic' triggered a DDR call on ISDN BRI 0 of one of the Certkiller routers?

A. show interface bri0
B. show dialer interface bri0
C. show interface dialer
D. show ip route connected

Answer: B

Explanation:
Enter the show dialer interface EXEC command with the interface type and number to
display statistics on the physical interface bound to the dialer interface. Output includes the
configured timers. The "Idle timer (never)" and "Dial reason:" lines indicate that persistent
dialing is configured.
Router# show dialer interface dialer 1
Di1 - dialer type = DIALER PROFILE
Idle timer (never), Fast idle timer (20 secs)
Wait for carrier (30 secs), Re-enable (15 secs)
Dialer state is data link layer up
Number of active calls = 1
Dial String Successes Failures Last DNIS Last status
7135551234 4 0 00:00:06 successful Default
BRI1/0 - dialer type = ISDN
Dial String Successes Failures Last DNIS Last status
0 incoming call(s) have been screened.
0 incoming call(s) rejected for callback.
BRI1/0:2 - dialer type = ISDN
Idle timer (never), Fast idle timer (20 secs)
Wait for carrier (30 secs), Re-enable (15 secs)
Dialer state is data link layer up
Dial reason: Dialing on persistent Dialer Profile
Interface bound to profile Di1
Time until disconnect never
Current call connected 00:00:06
Connected to 7135551234 (7135551234)
Reference:
http://www.cisco.com/univercd/cc/td/doc/product/software/ios122/122newft/122t/122t11/ftd
perst.htm

QUESTION 340
You have an ISDN BRI connection. You need to check the Layer 3 sessions; more
specifically the call-type and B channel utilized. Which of the following commands
would you use?

A. debug dialer
B. show isdn status
C. show dialer-group
D. show dialer interface

Answer: B

Explanation:
Understanding the show isdn status Output
The show isdn status output shown below is an example of a properly functioning BRI
circuit. In the following example, Layer 1 is MULTIPLE_FRAME_ESTABLISHED , the
Terminal Endpoint Identifiers (TEIs) have been successfully negotiated, and ISDN Layer 3
(end-to-end) is ready to make or receive calls. The items you should pay attention to are
linked to each corresponding field in the table shown below.
CK1 # show isdn status
The current ISDN Switchtype
= basic-ni1
ISDN BRI0 interface
Layer 1
Status:
ACTIVE
Layer 2
Status:
TEI = 109, State = MULTIPLE_FRAME_ESTABLISHED
TEI = 110, State = MULTIPLE_FRAME_ESTABLISHED
Spid Status
TEI 109, ces = 1, state = 8(established)
spid1 configured, spid1 sent, spid1 valid
Endpoint ID Info: epsf = 0, usid = 1, tid = 1
TEI 110, ces = 2, state = 8(established)
spid2 configured, spid2 sent, spid2 valid
Endpoint ID Info: epsf = 0, usid = 3, tid = 1
Layer 3 Status
0 Active Layer 3 Call(s)
Activated dsl 0 CCBs = 0
Total Allocated ISDN CCBs = 0
References:
Building Cisco Remote Access Networks page 203 ISBN#1-57870-091-4
http://www.cisco.com/en/US/tech/ CK8 01/ CK3 79/technologies_tech_note09186a0080094b78.sh
tml

QUESTION 341
You have just been hired by Test-King's consulting branch to troubleshoot a clients
Frame Relay network.
You enter the command:
show interface serial0
The output from the command contains the lines:
Serial0 is up, line protocol is down
So you ask the resident administrator what the encapsulation type is, and he answers:
"Serial 0 is configured with frame relay encapsulation."

From the above two facts, what is most likely the source of the problem?

A. IP subnet mismatch
B. No carrier signal
C. No IP address configured
D. LMI type mismatch
E. LAPF state, down

Answer: D

Explanation:
"Serial0 is up, line protocol is down" indicates that the router is getting a carrier signal from the CSU/DSU or modem. Check to make sure the Frame Relay provider has activated their port and that your Local Management Interface (LMI) settings match. Generally, the Frame Relay switch ignores the data terminal equipment (DTE) unless it sees the correct LMI (use Cisco's default "cisco" LMI). Check to make sure the Cisco router is transmitting data. You will most likely need to check the line integrity using loop tests at various locations beginning with the local CSU and working your way out until you get to the provider's Frame Relay switch.
Reference:
http://www.cisco.com/en/US/tech/ CK7 13/ CK2 37/technologies_tech_note09186a008014f8a7.sh tml#serialupdown

---

QUESTION 342
You are a network administrator at T & K bicycle wheel works and by coincidence the network uses a hub and spoke Frame Relay architecture. Sadly, no spoke routers can ping any other spoke routers, yet all the spoke routers are able to ping the hub router. What is most likely the cause of this mishap?

A. Disabled split horizon
B. Spanning-tree loop
C. Inverse ARP issue
D. Poison reverse issue

Answer: C

Explanation:
A star topology, also known as a hub-and-spoke configuration, is the most popular Frame Relay network topology. In this topology, remote sites are connected to a central site that generally provides a service or application. This is the least expensive topology because it requires the least number of PVCs. In this scenario, the central router provides a multipoint connection because it is typically using a single interface to interconnect multiple PVCs. You cannot ping from one spoke to another spoke in a hub and spoke configuration using multipoint interfaces because there is no mapping for the other spokes' IP addresses. Only the hub's address is learned via the Inverse Address Resolution Protocol (IARP). If you configure a static map using the frame-relay map command for the IP address of a remote

spoke to use the local data link connection identifier (DLCI), you can ping the addresses of other spokes.
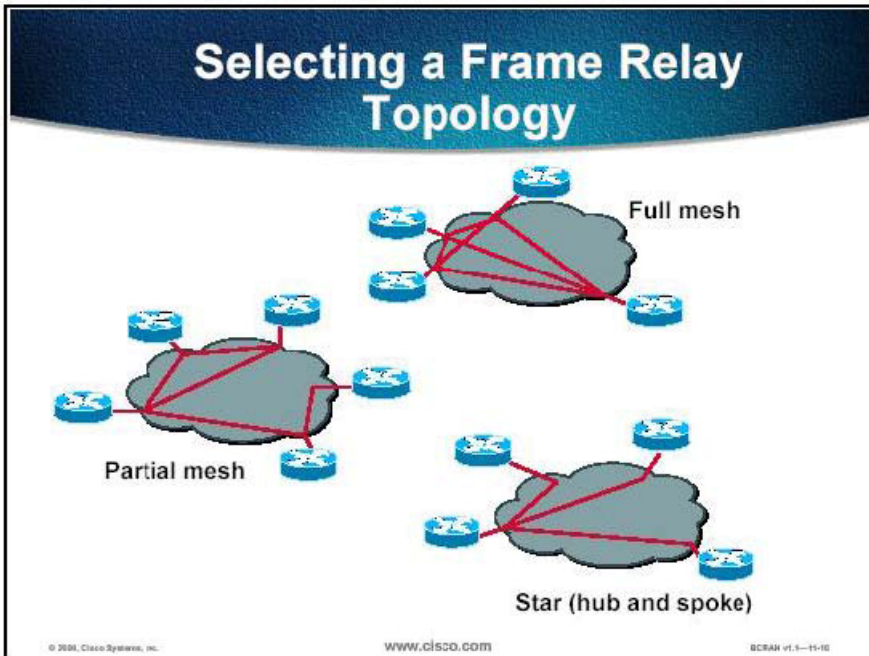
Incorrect Answers:
A: Disabling the split horizon feature would actually fix this issue in many frame relay networks where the hub site is using the main serial interface (not using sub-interfaces).
B: This is a layer 2 bridging/switching mechanism and has no relevance in layer 3 pings being successful on a network.
D: This is not likely at all, since all remote locations are unable to ping each other, but they can ping the main site.
Reference:
http://www.cisco.com/en/US/tech/ CK7 13/ CK2 37/technologies_tech_note09186a008014f8a7.sh tml#topic2

QUESTION 343
What command could you use if you wanted to find out the number of successful and failed calls?

A. show interface
B. show isdn q931
C. show dialer
D. show isdn active call
E. All of the above
F. None of the above

Answer: C

Explanation:

The show dialer command displays: status, connection information, and the number connected to for each B channel; as well as a list of successful and failed calls.

QUESTION 344
The "show isdn status" command was issued on a Certkiller router as displayed below:
Router CK1 #show isdn status
Global ISDN Switchtype = basic-ni
ISDN BRI0 interface dsl 0, interface ISDN
Switchtype = basic-ni
Layer 1 Status:
ACTIVE
Layer2 Status:
TEI = 73, Ces = 2, SAPI = 0, State = TEI_ASSIGNED
TEI = 74, Ces = 1, SAPI = 0, State = TEI_ASSIGNED
Layer 3 Status :
0 Active Layer 3 Call(s)
What is true about the router in the command output above?

A. Layer 1, 2, and 3 status is active.
B. Layer 1 status is active but Layer 2 status indicates lost connectivity.
C. TEI values assigned are not a valid numbers.
D. Layers 1 and 2 status is active but Layer 3 status indicates lost connectivity.

Answer: B

Explanation:
The show isdn status output shown below is an example of a properly functioning BRI circuit. In the following example, Layer 1 is MULTIPLE_FRAME_ESTABLISHED , the Terminal Endpoint Identifiers (TEIs) have been successfully negotiated, and ISDN Layer 3 (end-to-end) is ready to make or receive calls. The items you should pay attention to are linked to each corresponding field in the table shown below.
maui-nas-01# show isdn status
ISDN Switchtype
= basic-ni1
ISDN BRI0 interface
Layer 1
Status:
ACTIVE
Layer 2
Status:
TEI = 109, State = MULTIPLE_FRAME_ESTABLISHED
TEI = 110, State = MULTIPLE_FRAME_ESTABLISHED
Spid Status
:
Endpoint ID Info: epsf = 0, usid = 3, tid = 1
TEI 109, ces = 1, state = 8(established)

spid1 configured, spid1 sent, spid1 valid
Endpoint ID Info: epsf = 0, usid = 1, tid = 1
TEI 110, ces = 2, state = 8(established)
spid2 configured, spid2 sent, spid2 valid
Layer 3 Status
:
0 Active Layer 3 Call(s)
Activated dsl 0 CCBs = 0
Total Allocated ISDN CCBs = 0

QUESTION 345

The "show line" command was issued on the Certkiller terminal server as displayed
below:

```
Certkiller TermsSrv#show line
 Tty Typ   Tx/Rx      A Modem Roty AccO Accl Uses  Noise  Overruns
   0 CTY      -         -    -    -    -    -   0     0      0/0
   1 TTY  9600/9600  -    -    -    -    -   0    136     0/0
   2 TTY  9600/9600  -    -    -    -    -   0     73     0/0
   3 TTY  9600/9600  -    -    -    -    -   0     69     0/0
   4 TTY  9600/9600  -    -    -    -    -   0     82     0/0
   5 TTY  9600/9600  -    -    -    -    -   0     26     0/0
   6 TTY  9600/9600  -    -    -    -    -   0      0     0/0
   7 TTY  9600/9600  -    -    -    -    -   0     21     0/0
   8 TTY  9600/9600  -    -    -    -    -   0     21     0/0
   9 AUX  9600/9600  -    -    -    -    -   0      0     0/0
 *10 VTY      -         -    -    -    -    -   2      0     0/0
  11 VTY      -         -    -    -    -    -   0      0     0/0
  12 VTY      -         -    -    -    -    -   0      0     0/0
  13 VTY      -         -    -    -    -    -   0      0     0/0
  14 VTY      -         -    -    -    -    -   0      0     0/0
  15 VTY      -         -    -    -    -    -   0      0     0/0
  16 VTY      -         -    -    -    -    -   0      0     0/0
  17 VTY      -         -    -    -    -    -   0      0     0/0
  18 VTY      -         -    -    -    -    -   0      0     0/0
  19 VTY      -         -    -    -    -    -   0      0     0/0
```

Based on the information above, how is the router being accessed?

A. console port 0
B. asyncrhonous port 0
C. asynchronous port 7
D. auxiliary port 0
E. virtual terminal port 0
F. virtrual terminal port 10

Answer: F

Explanation:
If you look carefully at the command output, and pay attention to the left column you should
notice an asterisk right before the phrase '10 VTY'; this shows that virtual terminal number
10 is being accessed. The asterisk shows the means by which the local session is being used
when accessing the device.

QUESTION 346
Which of the following statements best describes the term spoofing in the following
output?

Router Certkiller 1#show interface dialer1
Dialer1 is up, line protocol is up (spoofing)

A. The router is allowed to act as a proxy Domain Name System (DNS) server.
B. The router is protected from accepting traffic from outside the network which is
pretending to be from inside the network.
C. The dialer is allowed to masquerade as "up" so that upper level protocols will
continue to operate as expected.
D. Prevents full periodic routing updates from being passed on the line and only allows
routing updates on network changes.

Answer: C

Explanation:
Interfaces - up/up (spoofing)
In order for packets to be routed to and through an interface, that interface must be up/up as
seen in a show interfaces output:
Montecito# show interfaces ethernet 0
Ethernet0 is up, line protocol is up
Hardware is Lance, address is . . .
What happens to a dialer interface that is not connected? If protocol is not up and running on
the interface, the implication is that the interface itself will not be up. Routes which rely on
that interface will be flushed from the routing table, and traffic will not be routed
to that interface. The result is that no calls would be initiated by the interface.
The solution to counter this possibility is to allow the state up/up (spoofing) for dialer
interfaces. Any interface can be configured as a dialer interface. For example, a Serial or
Async interface could be made into a dialer by adding the command dialer in-band or dialer
dtr to the interface's configuration. These lines are unnecessary for interfaces
that are by nature a dialer interface (BRIs and PRIs). The output for a show interface will
look like this:
Montecito# show interfaces bri 0
BRI0 is up, line protocol is up (spoofing)
Hardware is BRI
Internet address is . . .
In other words, the interface "pretends" to be up/up so that associated routes will remain in
force and so that packets can be routed to the interface.

QUESTION 347
Study the command output below:
kickin load 60% kickout load 40%
Which of the following commands is capable of producing the above output?

A. show load
B. show primary
C. show dialer-profile
D. show interface

E. show backup

Answer: D

Explanation:
Use the show interfaces command to display status and counter information about an interface. The following example illustrates this:
--------------------------->
CK1 # show interfaces s0/1
Serial0/1 is up, line protocol is up
Hardware is PowerQUICC Serial
Description: connects to X.25 switch
Internet address is 10.10.0.30/24
Backup interface Serial0/0, failure delay 0 sec, secondary
disable delay 0 sec,
kickin load not set, kickout load not set
MTU 1500 bytes, BW 1544 Kbit, DLY 20000 usec,
reliability 255/255, txload 1/255, rxload 1/255
Encapsulation X25, loopback not set
X.25 DCE, address 3034, state R1, modulo 8, timer 0
--------------------------->
Reference:
http://www.cisco.com/en/US/products/sw/iosswrel/ps1839/products_feature_guide09186a00
80110d07.html

QUESTION 348
An 806 router E1 interface is connected to a cable modem. The end-user PC is connected to the 806 router E0 interface. The end-user PC is having Internet connectivity issues but the 806 router is able to ping the different Internet sites. Which two errors could be causing the problem? (Choose two)

A. The 806 is configured as the DHCP server, but the end-user PC is not setup for DHCP.
B. The static default route is not configured correctly on the 806 router.
C. Port Address Translation (PAT) is not configured correctly on the 806 router.
D. The 806 router is not properly configured to act as the PPPoE client.
E. The 806 router is not properly configured for PPP CHAP authentication.

Answer: A, C

Explanation:
If the Cisco is configured as the DHCP server but the PC is configured with a static IP address, the PC will not obtain an IP address dynamically from the server. This could explain why the PC is having Internet connectivity issues.
Another explanation is that the Cisco is not correctly configured for PAT. Port address translation is used to allow multiple inside hosts to share a single IP address so that the hosts

can appear to the Internet to have a registered IP address.
All of the other answer choices are incorrect. If they were true, then the Cisco router itself
would not be able to access the Internet.

QUESTION 349
While logged into one of the Certkiller ISDN routers, you wish to see the active calls.
What command will display the number of active calls? (Type in answer below)

Answer: show isdn status

Explanation:
The "show isdn status" command ensures that the router is properly communicating with the
ISDN switch. In the output, verify that Layer 1 Status is ACTIVE, and that the Layer 2 Status
state = MULTIPLE_FRAME_ESTABLISHED appears. This command also displays the
number of active calls.

QUESTION 350
Within the Certkiller network, you have multiple ISDN user devices physically attached
to one circuit. Which of the following can happen as a result of this? (Choose all that
apply)

A. Compression
B. Collisions
C. Encryption
D. Contention
E. None of the above

Answer: B, D

Explanation:
Multiple ISDN user devices can be physically attached to one circuit. In this configuration,
collisions can result if two terminals transmit simultaneously. ISDN therefore provides
features to determine link contention. When an NT receives a D bit from the TE, it echoes
back the bit in the next E-bit position. The TE expects the next E bit to be the same as its last
transmitted D bit.

QUESTION 351
While troubleshooting a router issue, you suspect that the CPU may be becoming overutilized.
What command do you use to check the CPU utilization of the router? (Type
in answer below)

Answer: show process cpu

Explanation:
Software compression is available in all router platforms. Software compression is performed
by the main processor in the router. Compression is performed in software and might

significantly affect system performance. We recommend that you disable compression if the router CPU load exceeds 65 percent. To display the CPU load, use the "show process cpu" EXEC command.

QUESTION 352
You are a Cisco Certified Engineer and have been assigned the task of configuring a DDR remote access solution. What command may be used to show the general diagnostic information for interfaces configured? (Type in answer below)

Answer: show dialer

Explanation:
The show dialer [interface type number] command displays general diagnostic information for interfaces configured for DDR. If the dialer came up properly, the Dialer state is data link layer up message should appear. If physical layer up appears, then the line protocol came up, but the Network Control Protocol (NCP) did not. The source and destination addresses of the packet that initiated the dialing are shown in the Dial reason line. This show command also displays the timer's configuration and the time before the connection times out.

QUESTION 353
Router CK1 is configured as an access server. The following command was issued on router CK1 :
ip host corpX 1098 157.11.11.96
From this command, which of the following is true?

A. 157.11.11.96 is NOT a valid IANA approved IP address.
B. 157.11.11.96 is the IP address of the remote host.
C. The command allows a reverse telnet connection.
D. The configuration applies in 1098 seconds.
E. 1098 is the dialer group ID.

Answer: B

Explanation:
The access server maintains a table of host names and their corresponding addresses, also called host name-to-address mapping. Higher-layer protocols such as Telnet use host names to identify network devices (hosts). The access server and other network devices must be able to associate host names with IP addresses to communicate with other IP devices. Host names and IP addresses can be associated with one another through static or dynamic means. Manually assigning host names to addresses is useful when dynamic mapping is not available.
To assign host names to addresses, perform the following task in global configuration mode:

Task	Command
Statically associate host names with IP	**ip host** *hostname*[*tcp-port-number*]

addresses.	*address1* [*address2...ad dress8*]

In this example, the name corpX is being statically mapped to 157.11.11.96 using TCP port 1098.

QUESTION 354
Router CK1 is configured as shown below:
interface serial 1
ip address 128.10.200.65 255.255.255.192
dialer in-band
!
ip route 0.0.0.0 0.0.0.0 128.10.200.66
Which of the following is true?

A. This configuration is for an outgoing call only configuration
B. This configuration is for an answer and outgoing call configuration
C. This configuration is for an answer only configuration
D. This configuration is not valid

Answer: C

Explanation:
The dialer in-band command specifies that chat scripts will be used on asynchronous interfaces and V.25bis will be used on synchronous interfaces. The parity keywords do not apply to asynchronous interfaces.
The parity setting applies to the dialer string that is sent out to the modem. If you do not specify a parity, or if you specify no parity, no parity is applied to the output number. If odd parity is configured, the dialed number will have odd parity (7-bit ASCII characters with the eighth bit as the parity bit.)
If an interface only accepts calls and does not place calls, the dialer in-band interface configuration command is the only command needed to configure it. If an interface is configured in this manner, with no dialer rotary groups, the idle timer never disconnects the line. It is up to the remote end (the end that placed the call) to disconnect the line based on idle time.

QUESTION 355
Study the exhibit regarding RouterA in the Certkiller network below:

```
RouterA# show crypto isakmp policy
Protection suite priority 15
        encryption algorithm:  DES - Data Encryption Standard (56 bit keys)
        hash algorithm:       Message Digest 5
        authentication method:  Rivest-Shamir-Adleman Signature
        Diffie-Hellman Group:  #2 (1024 bit)
        lifetime:             5000 seconds, no volume limit
Protection suite priority 20
        encryption algorithm:  DES - Data Encryption Standard (56 bit keys)
        hash algorithm:       Secure Hash Standard
        authentication method:  preshared Key
        Diffie-Hellman Group:  #1 (768 bit)
        lifetime:             10000 seconds, no volume limit
Protection suite of priority 110
        encryption algorithm:  DES - Data Encryption Standard (56 bit keys).
        hash algorithm:       Message Digest 5
        authentication method:  Rivest-Shamir-Adleman Encryption
        Diffie-Hellman group:  #1 (768 bit)
        lifetime:             86400 seconds, no volume limit
Default protection suite
        encryption algorithm:  DES - Data Encryption Standard (56 bit keys).
        hash algorithm:       Secure Hash Standard
        authentication method:  Rivest-Shamir-Adleman Signature
```

How many IKE policies were administratively defined above?

A. 0
B. 1
C. 2
D. 3
E. 4

Answer: D

Explanation:
There are three policies in the exhibit (using priority 15, 20 and 110, respectively) which were manually configured on this router. The default policy is not explicitly defined, and is included as the default IKE parameters on Cisco IP Sec routers.

QUESTION 356
Two Certkiller locations are trying to connect to each other over a VPN, but the connection is failing. Which common problem causes an IPSEC VPN to fail?

A. ACLs configured in the IPSEC traffic path blocking ISAKMP, ESP, and AH traffic.
B. Multiple transform sets configured but only one transform set is specified in the crypto map entry.
C. Crypto ACL configuration errors where permit is used to specify that matching packets must be encrypted.
D. Multiple interfaces sharing the same crypto map set.

Answer: A

Explanation:
By default, IPSec and all packets that traverse the PIX Firewall are subjected to blocking as specified by inbound conduit, outbound list or interface access-list. To enable IPSec packets

to traverse the PIX Firewall, ensure that you have statements in conduits, outbound lists or interface access-lists that permit the packets. The same holds true for IPSec routers that have access lists configured.

IKE uses UDP port 500. The IPSec ESP and AH protocols use protocol numbers 50 and 51. Ensure your access lists are configured so that protocol 50, 51 and UDP port 500 traffic is not blocked at interfaces used by IPSec. In some cases you may be required to add a statement to your access lists to explicitly permit this traffic.

QUESTION 357
An IPSec tunnel has just been created on the Certkiller network, and you wish to verify it. Which command will display the configured IKE policies?

A. show crypto isakmp policy
B. show crypto ipsec
C. show crypto isakmp
D. show crypto map

Answer: A

Explanation:
To display the parameters for each Internet Key Exchange (IKE) policy, use the show crypto isakmp policy command in EXEC mode.
The following is sample output from the show crypto isakmp policy command after two IKE policies have been configured (with priorities 15 and 20, respectively):
CK1 # show crypto isakmp policy
Protection suite priority 15
encryption algorithm: DES - Data Encryption Standard (56 bit keys)
hash algorithm: Message Digest 5
authentication method: Rivest-Shamir-Adleman Signature
Diffie-Hellman Group: #2 (1024 bit)
lifetime: 5000 seconds, no volume limit
Protection suite priority 20
encryption algorithm: DES - Data Encryption Standard (56 bit keys)
hash algorithm: Secure Hash Standard
authentication method: preshared Key
Diffie-Hellman Group: #1 (768 bit)
lifetime: 10000 seconds, no volume limit
Default protection suite
encryption algorithm: DES - Data Encryption Standard (56 bit keys)
hash algorithm: Secure Hash Standard
authentication method: Rivest-Shamir-Adleman Signature
Diffie-Hellman Group: #1 (768 bit)
lifetime: 86400 seconds, no volume limit

QUESTION 358
You've come to a job site to check the traffic flow on a Frame Relay connection.

A hub router has its DE set to 1 when receiving frames. Meanwhile a remote router is receiving frames with the DE bit set to 0 is. What does this indicate about traffic?

A. CIR exceeded in both directions.
B. CIR exceeded from remote route to hub router.
C. CIR exceeded from hub router to remote router.
D. CIR exceeded in neither direction.

Answer: B

Explanation:
Frame Relay service provider's use a parameter called committed information rate (CIR) to provision network resources to a Frame Relay user and regulate usage according to the assigned parameters. A mechanism written for the Frame Relay protocol exists for letting Frame Relay users know that congestion has been encountered within the Frame Relay network. This mechanism relies on the FECN/BECN bits in the Q.922 header of the frame. The network or the user can selectively set the discard eligible (DE) bit in the frames and drop these frames when congestion is encountered. When the DE bit is set to 1, this means that the frame is Discard Eligible, and that it has exceeded the CIR.

	The number of frames transmitted to the attached equipment which have one of the following conditions:
Frames transmitted in excess of CIR	• Were determined at ingress to exceed the configured Committed Information Rate (CIR) for the PVC, or, • Were received at ingress with DE = 1 and the Discard Eligible (DE) feature is enabled, or, • Were received at ingress when the virtual circuit (VC) queue exceeded the configured DE threshold and the DE feature is enabled.

Reference:
Cisco Press - BCRAN - 642-821 - Exam Certification Guide 2004 (ISBN 1-58720-084-8)
Page 302

QUESTION 359
You're a Frame Relay specialist, and you've been called in to assist in a troubleshooting job. The local administrator is tells you that the router is receiving frames with the BECN bit set (at 60 second intervals) but it IS NOT receiving frames with the FECN bit set. From the information he's just given, you're certain that there's too much traffic congestion on the Frame Relay switch. In which direction is there too much traffic?

A. Too much traffic in both directions.
B. Too much traffic within the local network.
C. Too much traffic from remote router to local router.
D. Too much traffic from local router to remote router.

Answer: D

Explanation:
In a frame relay network, FECN (forward explicit congestion notification) is a header bit transmitted by the source (sending) terminal requesting that the destination (receiving) terminal slow down its requests for data. BECN (backward explicit congestion notification) is a header bit transmitted by the destination terminal requesting that the source terminal send data more slowly. FECN and BECN are intended to minimize the possibility that packets will be discarded (and thus have to be resent) when more packets arrive than can be handled.
If the source terminal in a communications circuit generates frequent FECN bits, it indicates that the available network bandwidth (at that time) is not as great as can be supported by the destination terminal. Likewise, if the destination generates frequent BECN bits, it means the available network bandwidth (at that time) is not as great as can be supported by the source.
In either case, the root cause is lack of available bandwidth at the times during which FECN or BECN bits are generated. This can occur because of outdated or inadequate network infrastructure, heavy network traffic, high levels of line noise, or portions of the system going down. Identifying and resolving these issues can improve overall network performance, especially when the system is called upon to carry a large volume of traffic.
Reference: http://searchnetworking.techtarget.com/sDefinition/0,,sid7_gci787381,00.html

---

QUESTION 360
On RTA, the "show compress" command was issued as shown below:

Given the above output, which two statements are true concerning PPP compression? (Choose two)

A. The interface is configured with TCP header compression.
B. The interface is configured with STAC compression.
C. The interface is configured with predictor compression.
D. The overall data compression ratio is 2:1.
E. The total amount of data to be transmitted before applying compression is 120,000.
F. The total amount of data to be transmitted after applying compression is 40,000.

Answer: B, D

Explanation:
Compression is a link efficiency mechanism, which can be used to reduce the size of the payload and packet headers. This creates more bandwidth on a given link. You can perform compression either in software, or through hardware compression modules.
Cisco IOS supports Stacker, Predictor and MPPC algorithms at link layer for payload

compression. Each algorithm differs in the utilization of router resources required, and in their compression efficiency.
Sample Output:
Here is a sample output of the show compress command:
router1#show compress
Serial2
Software compression enabled
uncompressed bytes xmt/rcv 81951/85500
compressed bytes xmt/rcv 0/0
1 min avg ratio xmt/rcv 0.789/0.837
5 min avg ratio xmt/rcv 0.789/0.837
10 min avg ratio xmt/rcv 0.789/0.837
no bufs xmt 0 no bufs rcv 0
restarts 0
Additional Stacker Stats:
Transmit bytes: Uncompressed = 28049 Compressed = 65745
Received bytes: Compressed = 74738 Uncompressed =0
These sections explain this sample output.
Software Compression
After the serial number, the first line in the output displays "Software compression enabled".
This line indicates that compression is configured.
Note: Software compression makes heavy demands on the processor of the router. The maximum compressed serial line rate depends on the type of Cisco router you use, and the compression algorithm you specify.
Uncompressed Bytes
uncompressed bytes xmt/rcv 81951/85500
This line in the output provides a count of uncompressed bytes of the compressed data. It does not include packets that cannot be compressed.
Compressed Bytes
compressed bytes xmt/rcv 0/0
This line gives the total number of already compressed bytes that are sent or received.
Throughput Ratio
The next section of output indicates a ratio of the data throughput gained or lost in the compression routine. Any number less than one indicates that the compression actually slows down data throughput. It does not reflect how compressible the data is.
1 min avg ratio xmt/rcv 0.789/0.837
5 min avg ratio xmt/rcv 0.789/0.837
10 min avg ratio xmt/rcv 0.789/0.837
Here are the common causes of poor compression ratios:
• High CPU utilization.
• A high percentage of small packets.
• Data that is not very redundant (for instance, if it has already been compressed).
Buffer Allocation
no bufs xmt 0 no bufs rcv 0
This line indicates the number of times the compression routine was not able to allocate a buffer to compress or decompress a packet.

Restarts
restarts 0
This represents the number of times the compression routine detected that the dictionaries were out of sync and restarted to build a dictionary. Line errors are a common cause of restarts.
Bytes Transmitted
Transmit bytes: Uncompressed = 28049 Compressed= 65745
Here:
• The uncompressed value is the amount of data that cannot be compressed, and has been sent in uncompressed format.
• The compressed value represents the byte-count of the data after it is compressed.
The sum of these two values represents the actual number bytes transmitted on the interface, minus the layer two encapsulation overhead.
Bytes Received
Received bytes: Compressed = 74738 Uncompressed= 0
Here:
• The compressed value is the byte-count of the compressed data received.
• The uncompressed value is the amount of data that was received in uncompressed format.
The sum of these two values represents the actual byte count received on the interface, minus the layer two encapsulation overhead.
Interpret the show compress Output:
From this output, you can calculate:
• The total amount of data to be transmitted before you apply the compression routine:
81951 + 28049 = 110000
• The total amount of data to be transmitted after you compress it:
28049 + 65745 = 93794
• The overall data compression:
110000 / 93794 = 1.17
• The compression ratio of the compressed packets:
81951 / 65745 = 1.24
In the example for our question here:
• The total amount of data to be transmitted before you apply the compression routine:
120000 + 40000 = 160000
• The total amount of data to be transmitted after you compress it:
40000 + 40000 = 80000
• The compression ratio of the compressed packets:
160000/80000 = 2 to 1, making choice D correct.
Reference:
http://www.cisco.com/en/US/tech/ CK7 13/ CK8 02/technologies_tech_note09186a008035b8c5.sh tml#topic1d

---

QUESTION 361
The following command was issued on router CK1 :
CK1 # show frame-relay pvc
PVC Statistics for interface Serial1 (Frame Relay DTE)

DLCI = 100M DLCI USAGE = LOCAL
PVC STATUS = INACTIVE INTERFACE = Serial1
input pkts 0 output pkts 0 in bytes 0
out bytes 0 dropped pkts 0 in FECN pkts 0
in BECN pkts 0 out FECN pkts 0 out BECN pkts 0
in DE pkts 0 out DE pkts 0
outcast pkts 0 outcast bytes 0
Given the above output, which statement is true?

A. An LMI is not being received from the Frame Relay switch.
B. The DLCI has been removed from the Frame Relay switch.
C. The remote router connection to the Frame Relay switch is not functioning.
D. The router is configured to be a Frame Relay switch

Answer: C

Explanation:
The PVC can have four possible states. These are shown by the PVC STATUS field as
follows:
ACTIVE - PVC is up and functioning normally.
INACTIVE - PVC is not up end-to-end. This may be because either there is no mapping (or
incorrect mapping) for the local DLCI in the frame-relay cloud or the remote end of the PVC
is deleted.
DELETED - Either the Local Management Interface (LMI) is not exchanged between the
router and the local switch, or the switch does not have DLCI configured on the local switch.
STATIC - no keepalive configured on the frame-relay interface of the router.
Since this PVC is inactive and appears to have a local DLCI usage assigned, the remote
router's connection to the frame relay network must not be functioning correctly.

QUESTION 362
A Frame Relay PVC status is reported as "Deleted" on the local router.
Which statement is true about the PVC configuration?

A. The PVC is not configured on the CSU/DSU.
B. The PVC is not configured on the local router.
C. The PVC is not configured on the remote router.
D. The PVC is not configured on the Frame Relay switch.

Answer: D

Explanation:
A frame relay PVC can have four possible states. These are shown by the PVC STATUS
field as follows:
ACTIVE - PVC is up and functioning normally.
INACTIVE - PVC is not up end-to-end. This may be because either there is no mapping (or
incorrect mapping) for the local DLCI in the frame-relay cloud or the remote end of the PVC

is deleted.
DELETED - Either the Local Management Interface (LMI) is not exchanged between the router and the local switch, or the switch does not have the DLCI configured on the local frame relay switch.
STATIC - no keepalive configured on the frame-relay interface of the router.

QUESTION 363
A Frame Relay switch informs a router that there are five PVCs available. The DLCIs assigned to these PVCs are 17, 18, 19, 20, and 21.
Router CK1 is configured with 5 point to point subinterfaces for these DLCI's. How does the router know which DLCI to use with each subinterface?

A. Each subinterface must manually be associated with the correct DLCI.
B. Each subinterface learns the correct DLCI from the Frame Relay switch.
C. Each subinterface learns the correct DLCI from the routing protocol.
D. Each subinterface automatically accepts the first available DLCI.
E. Each subinterface is dynamically associated with the correct DLCI via Inverse ARP.

Answer: A

Explanation:
For point-to-point subinterfaces, the destination is presumed to be known and is identified or implied in the frame-relay interface-dlci command. For multipoint subinterfaces, the destinations can be dynamically resolved through the use of Frame Relay Inverse ARP or can be statically mapped through the use of the frame-relay map command.
If you specified a point-to-point subinterface in the configuration, you must perform the following task in interface configuration mode:

Task	Command
Associate the selected point-to-point subinterface with a DLCI.	**frame-relay interface-dlci** *dlci* [*option*]

This statically maps the interface to a DLCI.
If you define a subinterface for point-to-point communication, you cannot reassign the same subinterface number to be used for multipoint communication without first rebooting the router. Instead, you can simply avoid using that subinterface number and use a different subinterface number instead.
Reference:
http://www.cisco.com/en/US/products/sw/iosswrel/ps1818/products_configuration_guide_chapter09186a00800873e0.html#xtocid337013

QUESTION 364
While troubleshooting a frame relay issue with the Certkiller network, the following command was issued:

```
Router1= debug frame-relay lmi
Serial0(in): Status, myseq 18
RT IE 1, length 1, type 0
KA IE 3, length 2, yourseq 20, myseq 18
PVC IE 0x7, length 0x6, dlci 101, status 0x2, bw 0
Serial0(out): StEnq, myseq 20, yourseen 18, DTE up
datagramstart = 0x4000530, datagramize = 13
FR encap = 0xFCF10309  Certkiller.com
00 75 01 01 00 03 02 19 17
```

Given the above output, which statement is true?

A. DLCI 101 is currently added/inactive.
B. DLCI 101 is currently added/active.
C. DLCI 101 is currently deleted.
D. DLCI 101 is not yet established.

Answer: B

Explanation:
The possible values of the status field are explained below:
0x0-Added/inactive means that the switch has this DLCI programmed but for some reason
(such as the other end of this PVC is down), it is not usable.
0x2-Added/active means the Frame Relay switch has the DLCI and everything is operational.
You can start sending it traffic with this DLCI in the header.
0x3-0x3 is a combination of an active status (0x2) and the RNR (or r-bit) that is set (0x1).
This means that the switch - or a particular queue on the switch - for this PVC is backed up,
and you stop transmitting in case frames are spilled.
0x4-Deleted means that the Frame Relay switch doesn't have this DLCI programmed for the
router. But it was programmed at some point in the past. This could also be caused by the
DLCIs being reversed on the router, or by the PVC being deleted by the telco in the Frame
Relay cloud. Configuring a DLCI (that the switch doesn't have) will show up as a 0x4.
In this example, the status field of DLCI 101 is 0x2, so it is added/active.

QUESTION 365
Which command displays the remote network address associated with each PVC?

A. show ip route
B. show frame-relay lmi
C. show frame-relay map
D. show frame-relay pvc
E. show frame-relay status

Answer: C

Explanation:
To display the current map entries and information about the connections, use the show

frame-relay map EXEC command.
The following is sample output from the show frame-relay map command:
CK1 # show frame-relay map
Serial 1 (administratively down): ip 10.108.177.177
dlci 177 (0xB1,0x2C10), static,
broadcast,
CISCO
TCP/IP Header Compression (inherited), passive (inherited)

Table of "show frame-relay map" Field Descriptions	
Field	Description
Serial 1 (administratively down)	Identifies a Frame Relay interface and its status (up or down).
ip 131.108.177.177	Destination IP address (Remote Network Address)
dlci 177 (0xB1,0x2C10)	DLCI that identifies the logical connection being used to reach this interface. This value is displayed in three ways: its decimal value (177), its hexadecimal value (0xB1), and its value as it would appear on the wire (0x2C10).
static	Indicates whether this is a static or dynamic entry.
CISCO	Indicates the encapsulation type for this map; either CISCO or IETF.

Reference:
http://www.cisco.com/en/US/products/sw/iosswrel/ps1835/products_command_reference_ch
apter09186a00800ca7ea.html#wp1029343

QUESTION 366
Exhibit

```
Certkiller3 # show dsl interface atm 0
```

```
                      ATU-R (DS)                    ATU-C(US)
Modem Status:         Showtime (DMTDSL_SHOWTIME)
DSL Mode:             ITU G.992.1 (G.DMT)
ITU STD NUM:          0x01                           0x1
Vendor ID:            'ALCB'                         'GSPN'
Vendor Specific:      0x0000                         0x0002
Vendor Country:       0x00                           0x00
Capacity Used:        97%                            100%
Noise Margin:         5.0 dB                         5.0 dB
Output Power:         9.5 dBm                        12.0 dBm
<output omitted>

                      Interleave      Fast    Interleave      Fast
Speed (kbps):         7616            0       896             0
<output omitted>
```

You work as a network engineer at Certkiller .com. You are troubleshooting a DSL connectivity issue. You have issued the show dsl interface command and received the above output. Given this information, what could be the problem?

A. An incorrect power supply is being used.
B. The service provider is not providing DSL service to this wall jack.
C. Incorrect VPI/VCI values are configured on the router.
D. The service provider is using a DSLAM that does not support the Alcatel DSL chipset.

Answer: C

Explanation:
If you experience trouble with the ADSL connection, make sure to verify the following:
• That the ADSL line is connected and is using pins 3 and 4. For more information on the ADSL connection, see the hardware guide for your router.
• That the ADSL CD LED is on. If it is not on, the router may not be connected to the digital subscriber line access multiplexer (DSLAM). For more information on the ADSL LEDs, see the hardware installation guide specific to your router.
• That you are using the correct Asynchronous Transfer Mode (ATM) variable path indentifier/variable circuit identifier (VPI/VCI).
• That the DSLAM supports discrete multi-tone (DMT) Issue 2.
Incorrect Answers:
A: The power outputs shown are normal
B: This is incorrect, due to the operational status of the modem as displayed by the "showtime" keyword.
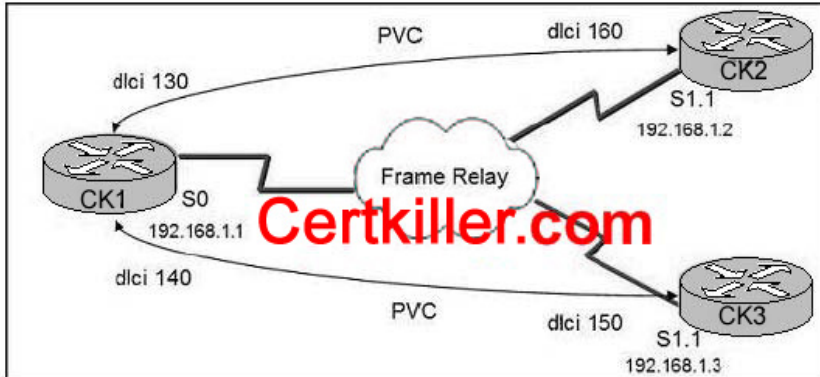D: In this example, the Alcatel chipset is configured, with the Globespan chipset configured as the secondary chipset. If this was not supported, the modem status would not read "showtime."

QUESTION 367
Exhibit

Refer to the exhibit. An administrator is not able to ping from CK2 to CK3 in the Frame Relay network. A show running-config command partial output displays the following:

CK2 # show running-config
!
interface Serial1
no ip address
encapsulation frame-relay
!
interface Serial1.1
ip address 192.168.1.2 255.255.255.0
frame-relay map ip 192.168.1.1 160

What command could be used on the CK2 multipoint serial 1.1 subinterface to complete a successful ping tp CK3 ?

7. CK2 (config-if)# frame-relay map ip 192.168.1.1 160
8. CK2 (config-if)#frame-relay map ip 192.168.1.3 150
9. CK3 (config-if)#frame-relay map ip 192.168.1.3 160
10. CK2 (config-if)#frame-relay map ip 192.168.1.1 30
11. CK2 (config-if)#frame-relay map ip 192.168.1.2 160
12. CK2 (config-if)#frame-relay map ip 192.168.1.2 150

Answer: C

QUESTION 368

Drag the correct ISDN reference point to the appropriate description.

Answer:

	Defines the two-wire interface between the NT-1 and the ISDN cloud	U
TA	Defines the inteface between the TA and the attached non ISDN device	R
	Defines the four-wire interface between the TE1 or terminal adapter (TA) and an NT	S/T

Q

QUESTION 369
Which two commands assign multiple ISDN BRI interfaces to a single hunt group?
(Choose two)

A. dialer-group
B. multilink ppp
C. interface dialer
D. dialer hunt-group
E. dialer rotary-group

Answer: C, E

QUESTION 370
Which dial feature provides reliable connectivity, does not rely on defined interesting
traffic to trigger outgoing calls to the remote router, and is triggered by a lost route?

A. dialer backup
B. floating static routes
C. dialer watch
D. dialer route

Answer: C

QUESTION 371
In Frame Relay traffic shaping, what does the term committed burst (Bc) refer to?

A. The rate, in bits per second, at which the Frame Relay switch agrees to transfer data.
B. The maximum number of bits that the switch agrees to transfer during any Tc.
C. The maximum number of uncommitted bits that the Frame Relay switch attempts to
transfer beyond the CIR for the first time interval only.
D. The number of bits, during any Tc, over the CIR that can be transmitted but will be
marked DE.

Answer: B

QUESTION 372
Which two commands will verify an ISDN circuit from end to end? (Choose two)

A. show isdn status
B. debug isdn q931
C. debug dialer
D. debug isdn q921
E. debug serial interface

Answer: A, B

QUESTION 373
Which four features are usually required for an 827 ADSL router to support a home
ADSL broadband Internet connection with multiple end-user PCs? (Choose four?

A. IPSec
B. Bridging (IRB or RBE)
C. PPPoE client
D. PAT
E. DHCP server
F. Static default route

Answer: C, D, E, F

QUESTION 374
Router CK1 (config-controller)# pri-group 1-8, 24
Observe the exhibited command. What does the number 24 represent in the T1 PRI
configuration?

A. The number of B channel time slots available.
B. The number of B channel time slots used.
C. The starting point of the B channel time slots.
D. The D channel time slot.

Answer: D

QUESTION 375
Exhibit:

```
R1#debug crypto isakmp
00:02:58: ISAKMP: received ke message (1/1)
00:02:58: ISAKMP (0:0): SA request profile is (NULL)
00:02:58: ISAKMP: local port 500, remote port 500
00:02:58: ISAKMP: set new node 0 to QM_IDLE
00:02:58: ISAKMP: insert sa successfully sa = 82AF88B8
00:02:58: ISAKMP (0:1): Can not start Aggressive mode, trying Main mode.
00:02:58: ISAKMP (0:1): Looking for a matching key for 10.1.1.1 in default : success
00:02:58: ISAKMP (0:1): found peer pre-shared key matching 10.1.1.1
00:02:58: ISAKMP (0:1): constructed NAT-T vendor-07 ID
00:02:58: ISAKMP (0:1): constructed NAT-T vendor-03 ID
00:02:58: ISAKMP (0:1): constructed NAT-T vendor-02 ID
00:02:58: ISAKMP (0:1): Input = IKE_MESG_FROM_IPSEC, IKE_SA_REQ_MM
00:02:58: ISAKMP (0:1): Old State = IKE_READY  New State = IKE_I_MM1

00:02:58: ISAKMP (0:1): beginning Main Mode exchange
00:02:58: ISAKMP (0:1): sending packet to 10.1.1.1 my_port 500 peer_port 500 (I) MM_NO_STATE
00:02:58: ISAKMP (0:1): received packet from 10.1.1.1 dport 500 sport 500 Global (I) MM_NO_STATE
00:02:58: ISAKMP (0:1): Input = IKE_MESG_FROM_PEER, IKE_MM_EXCH
00:02:58: ISAKMP (0:1): Old State = IKE_I_MM1  New State = IKE_I_MM2

00:02:58: ISAKMP (0:1): processing SA payload. message ID = 0
00:02:58: ISAKMP (0:1): processing vendor id payload
00:02:58: ISAKMP (0:1): vendor ID seems Unity/DPD but major 245 mismatch
00:02:58: ISAKMP (0:1): vendor ID is NAT-T v7
00:02:58: ISAKMP: Looking for a matching key for 10.1.1.1 in default : success
00:02:58: ISAKMP (0:1): found peer pre-shared key matching 10.1.1.1
00:02:58: ISAKMP (0:1) local preshared key found
00:02:58: ISAKMP : Scanning profiles for xauth ...
00:02:58: ISAKMP (0:1): Checking ISAKMP transform 1 against priority 100 policy
```

Refer to the graphic. Which configuration statements match the debug output shown above?

A. crypto isakmp policy 100
encr aes
authentication rsa-encr
group 5
B. crypto isakmp policy 100
encr 3des
authentication pre-share
group 2
C. crypto isakmp policy 100
hash md5
authentication rsa-sig
D. crypto isakmp policu 100
encr des
lifetime 7200
E. crypto isakmp policy 100
hash md5
group 1
lifetime 7200

Answer: B

QUESTION 376
Which command will allow an administrator to observe signaling events between the

router and the ISDN switch?

A. debug isdn q921
B. debug isdn q931
C. show isdn status
D. show interface bri #

Answer: A

QUESTION 377
Exhibit:

Refer to the exhibit. A network administrator is verifying a site-to-site IPSec VPN
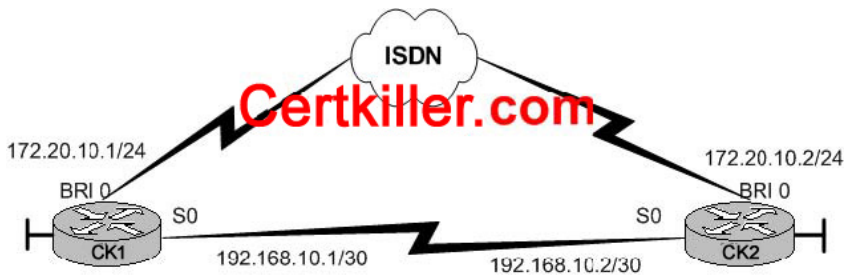configuration. Based on the output shown, what must be true about CK1 and CK2 ?

A. CK1 and CK2 have not completed IKE Phase 1.
B. CK1 and CK2 have not completed IKE Phase 2.
C. CK1 and CK2 are authenticated IKE peers.
D. CK1 and CK2 maintain unidirectional IPSec SAs with each other.
E. CK1 and CK2 have timed out their IPSec SAs.

Answer: C

QUESTION 378
Exhibit

```
CK1#show running-config
!
isdn switch-type basic-ni
!
interface Serial0
backup delay 10 30
backup interface BRI0
ip address 192.168.10.1 255.255.255.252
encapsulation ppp
!
interface BRI0
ip address 172.20.10.1 255.255.255.0
encapsulation ppp
dialer map ip 172.20.10.2 name R2 broadcast 5551111
dialer map ip 172.20.10.2 name R2 broadcast 5551112
isdn spid1 51299699380101 9969938
isdn spid2 51299699460101 9969946
dialer-group 1
!
router ospf 1
network 192.168.10.0 0.0.0.3 area 0
!
access-list 101 permit ip any any
!
dialer-list 1 protocol ip list 101
```

Refer to the exhibit. Examine the show running-config output taken on CK1 . The BRI 0 interface on CK1 is configured as a backup interface for the serial connection. The ISDN backup link was tested and was able to connect to the remote site CK2 . However, when CK1 loses the connectivity over the serial link, the backup link does not come up. What could the problem be?

A. The OSPF hello packets are not considered as interesting traffic to dial the backup link.
B. The ISDN backup interface network is not included in the OSPF routing protocol.
C. The PPP authentication is not included in then backup interface configuration.
D. The enable-timer, specified by the backup delay command, has expired before the backup interface comes up.

Answer: B

QUESTION 379
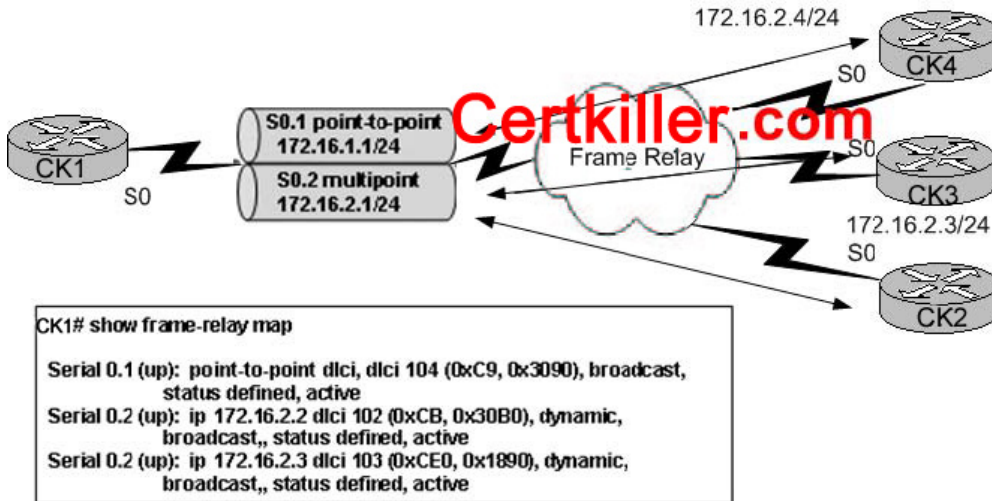What is the correct syntax to configure software compression for LAPB, PPP, and HDLC for a link?

A. Router(config-if)#frame-relay payload-compress
B. Router(config-if)#ip rtp header-compression [passive]
C. Router(config-if)#ip tcp header-compression [passive]
D. Router(config-if)#compress [predictor|stac|mppc]

Answer: D

QUESTION 380
Exhibit:

In the exhibit, the hub router CK1 Serial0 is configured with one point-to-point and one multipoint subinterface to connect to the spoke routers. The show frame-relay map command on CK1 depicts the active status of all Frame Relay PVCs. However, the ping from CK1 to CK4 failed. What should be done to fix the problem?

A. The CK1 subinterface and the serial interfaces all spoke routers must be on the same subnet.
B. The CK1 subinterface must have a designated subnet for each spoke router.
C. The CK1 point-to-point subinterface and the CK4 serial interface must be on the same subnet.
D. All spoke routers must be on their own subnet.

Answer: C

QUESTION 381
An administrator wants to run OSPF over the point-to-multipoint Frame Relay network. What configuration command would specify the Frame Relay network type that will not require additional configuration for OSPF neighbors?

A. frame-relay map ip 192.168.1.1 110
B. frame-relay map ip 192.168.1.1 110 broadcast
C. frame-relay map ip 192.168.1.1 110 ietf
D. frame-relay map ip.192.168.1.1 110 cisco

Answer: B

QUESTION 382
LCP is responsible for the negotiation of which function?

A. IP address
B. Modulo size
C. Error correction
D. Frequency on the link

Answer: C

QUESTION 383
Exhibit

```
CK1# show isdn status
Global ISDN Switchtype = basic-ni
ISDN BRI0 interface
dsl 0, interface ISDN Switchtype = basic-ni
Layer 1 Status:
ACTIVE
Layer 2 Status
Layer 2 NOT Activated
TEI Not Assigned, ces = 1, state = 3(await establishment)
spid1 configured, spid1 NOT sent, spid1 NOT valid
TEI Not Assigned, ces = 2, state = 1(terminal down)
spid2 configured, spid2 NOT sent, spid2 NOT valid
Layer 3 Status:
TWAIT timer active
0 Active Layer 3 Call(s)
Activated dsl 0 CCBs = 0
The Free Channel Mask: 0x80000003
Total Allocated ISDN CCBs = 0
```

Based on the command output shown, which statement must be true?

A. The wring spids were configured-
B. The wrong ISDN switch was configured.
C. The BRI 0 interface is administratively down.
D. The IP address on the interface was incorrectly configured.
E. There is nothing wrong with the ISDN configuration.

Answer: A

QUESTION 384
Exhibit:

```
<partial running configuration>
!
hostname CK1
!
username CK2 password 0 cisco
!
isdn switch-type basic-ni
!
interface Ethernet0
 ip address 172.16.1.1 255.255.255.0
!
interface Serial0
 ip address 192.168.10.2 255.255.255.252
 encapsulation ppp
 ppp authentication chap
!
interface BRI0
 ip address 172.20.10.2 255.255.255.0
 encapsulation ppp
 dialer idle-timeout 30
 dialer map ip 172.20.10.1 name CK2 broadcast 5551111
 dialer watch-group 8
 dialer-group 1
 isdn switch-type basic-ni
 isdn spid1 51255522220101 5552222
 isdn spid2 51255522230101 5552223
 ppp authentication chap
!
router ospf 5
 log-adjacency-changes
 network 172.16.1.0 0.0.0.255 area 0
 network 172.17.1.0 0.0.0.255 area 0
 network 172.20.10.0 0.0.0.255 area 0
 network 192.168.10.0 0.0.0.3 area 0
!
dialer watch-list 8 ip 172.22.53.0 255.255.255.0
!
access-list 101 deny   ospf any any
access-list 101 permit ip any any
!
dialer-list 1 protocol ip list 101
!
end
```

Refer to the exhibit. What is required to make this a valid "dialer watch" configuration?

A. The CK1 backup interface must be configured with the dialer watch-disable 30 command.
B. The CK1 dialer watch must be configured for group 1, not group 8.
C. The CK1 OSPF configuration must have a network statement for 172.22.53.0.
D. The BRI of CK1 must be configured with an additional dialer map statement referencing the "watched" network.

Answer: D

QUESTION 385
Which Cisco IOS command displays active Layer 3 sessions on an ISDN PRI connection, showing the call-type and B channel used?

A. debug dialer
B. show isdn status
C. show dialer-group
D. show dialer interface

Answer: B

QUESTION 386

A hub router is connecting four sites using Frame Relay point-to-point subinterfaces.
An administrator troubleshooting the issue enters the command show frame-relay pvc
on the hub router. Given the above output, which statement is correct?

A. The router is configured for a DLCI that is not detected on the other end of the PVC.
B. The router has dynamically found a DLCI that is not intended for its network.
C. The router is configured for Inverse ARP on the subinterfaces.
D. The router is configured for a DLCI that the switch does not recognize.

Answer: D

QUESTION 387
How are routing updates and hellos processed when using custom queuing?
They do not need to be queued.
They are automatically palced in queue 0.
They must manually be placed in a high priority queue.
They myst be part of a pplicy map to ensure that they have guaranteed
bandwidth.

Answer: B

QUESTION 388
Exhibit:

```
CK1#show policy-map
 Policy Map POLICY-1
  Class VoIP
   Bandwidth 64 (kbps)
    exponential weight 9
    class   min-threshold   max-threshold   mark-probablity
    ------------------------------------------------------------

    0        -              -               1/10
    1        -              -               1/10
    2        -              -               1/10
    3        -              -               1/10
    5                                       1/10
    6        -              -               1/10
    7        -              -               1/10
    rsvp     -              -               1/10


 Policy Map POLICY-2
  Class VoIP
   Bandwidth 48 (kbps) Max Threshold 256 (packets)

 Policy Map POLICY-4
  Class VOICE-TRAFFIC
   Bandwidth 64 (kbps) Max Threshold 64 (packets)
  Class VOICE-SIGNALING
   Bandwidth 64 (kbps) Max Threshold 64 (packets)
CK1#
```

Refer to the exhibit. Which policy-map configuration will best ensure that packets classified as voice are not dropped in favor of other network traffic?
POLICY-1
POLICY-2
POLICY-3
POLICY-4

Answer: B

QUESTION 389
Exhibit:

```
ISDN Serial1:23 interface
        dsl 1, interface ISDN Switchtype = primary-5ess
    Layer 1 Status:
        Active
    Layer 2 Status:
        TEI = 0, Ces = 1, SAPI = 0, State = TEI_ASSIGNED
    Layer 3 Status:
        0 Active Layer 3 Call(s)
    Activated dsl 1 CCBs = 0
    The Free Channel Mask:   0x807FFFFF
    Total Allocated ISDN CCBs = 5
```

Observe the exhibited output from a show isdn status command. Which statement is true?

A. There were five attempts to make calls.
B. Layer 1 is not operational.
C. Layer 2 is operational.
D. The router is not exchanging frames with the ISDN switch.

Answer: D

QUESTION 390
Exhibit:


```
hostname ck1
!
username ck2 password O certkiller
!
interface BRI0/0
ip address 20.1.1.1 255.255.255.0
no ip directed-broadcast
encapsulation ppp
dialer map ip 20.1.1.2 name ck2 broadcast 5772222
dialer-group 1
isdn switch-type basic-5ess
ppp authentication chap callin
ppp chap hostname alias-ck1
!
access-list 101 permit ip any any
dialer-list 1 protocol ip list 101
!
```

```
hostname ck2
!
username alias-ck1 password O certkiller
!
interface BRI0/0
ip address 20.1.1.2 255.255.255.0
no ip directed-broadcast
encapsulation ppp
dialer map ip 20.1.1.1 name alias-    broadcast 5771111
dialer-group 1
isdn switch-type basic-5ess
ppp authentication chap
!
access-list 101 permit ip any any
dialer-list 1 protocol ip list 101
!
```

Which two things will occur when CK1 initiates a call to CK2 and attempts to make a connection? (Choose two)

A. Both routers will send a challenge.
B. Only CK2 will send a challenge.
C. Only CK1 will send a challenge.
D. The CK2 router will generate a hash value and send it to CK1 .
E. The PPP connection establishment will succeed.
F. The PPP connection establishment will fail.

Answer: B, E

QUESTION 391
Which two debugs should you use to find the cause of an unsuccessful PAP negotiation?
(Choose two)

A. debug ppp pap
B. debug ppp negotiation
C. debug authentication chap
D. debug ppp authentication

Answer: B, D

QUESTION 392
When radius authentication is being configured on a router, which commands will allow a user to telnet successfully into the router?
Router(config)# radius-server host 192.168.1.23
Router(config)# radius-server key Certkiller
Router(config)# aaa new-model

A. Router(config)# aaa authentication login AAA group radius local none
Router(config)# line vty 0 4
Router(config-line)# login authentication AAA
B. Router(config)# aaa authentication login AAA group radius local none
Router(config)# line vty 0 4
Router(config-line)# login authentication Certkiller
C. Router(config)# aaa authentication login default group radius local none
Router(config) line vty 0 4
Router(config-line) login authentication AAA
D. Router(config)# aaa authentication login AAA group radius local none
Router(config)# line vty 0 4
Router(config-line)# login authentication default

Answer: A

QUESTION 393
Which additional field differentiates the PPP frame from an HDLC frame format?

A. protocol
B. control and address-family identifier (AFI) fields
C. LCP and control fields
D. Next hop address and address-family identifier (AFI) fields
E. Flag and next-hop address fields

Answer: A

QUESTION 394
To verify that the ISN line is working correctly, an administrator performs a show isdn status on the router. Which state will Layer 2 display if the line is up and active?

A. TEI_ASSIGNED
B. ASSIGN_AWAITING_TEI
C. MULTIPLE_FRAME_ESTABLISHED
D. TEI_UNASSIGNED

Answer: C

QUESTION 395
Which statement is true concerning compression?

A. MNP-5 and V.42bis modem compression specifications are compatible.
B. MNP-5 modem compression can be used in conjunction with payload compression.
C. Layer 3 encryption can be used in conjunction with link compression.
D. Payload compression uses more memoery than link compression.

Answer: D

QUESTION 396
What are thee drawbacks to using RFC 1482/2684 bridging with ADSL? (Choose three)

A. Bridging is inherently insecure and requires a trusted environment.
B. Bridging depends heavily on broadcasts in order to establish connectivity.
C. Bridging requires expensive routing equipment because of the extensive Layer 3 overhead.
D. Bridging architecture may allow IP addres hijacking.
E. Bridging, becayse of its ATM WAN configuration, can require considerable effort during initial troubleshooting.
F. Bridging architecture can be complex to install and maintain.

Answer: A, B, D

QUESTION 397
You are a Cisco Certified Engineer. You are configuring a remote access solution.
Which of the following are the necessary interface configuration tasks for ISDN BRI (Choose all that apply)?

A. Assign the interface type as BRI.
B. Specify static routes to remote ISDN locations.
C. Specify the ISDN provider's switch type.
D. Assign the interface to a dialer group.
E. Specify routing protocol used
F. Specify dynamic routes to remote ISDN locations.

Answer: C, D

Explanation:
According to Cisco: To configure the dialer interface that will be used as an intermediary between a physical interface that will function as backup interface and the interfaces that will use the backup, use the following commands beginning in global configuration mode: Step Command Purpose
1 interface dialer number Create a dialer interface.
2 ip unnumbered loopback0 Specify IP unnumbered loopback.
3 encapsulation ppp Specify PPP encapsulation.
4 dialer remote-name username Specify the remote router's CHAP authentication name.
5 dialer string dial-string Specify the remote destination to call.
6 dialer pool number Specify the dialing pool to use for calls to this destination.
7 dialer-group group-number Assign the dialer interface to a dialer group.

QUESTION 398
ISDN PRI in Australia provides _____ B channels plus _____ D channels.

A. 15,1

B. 24, 1
C. 32, 1
D. 30, 1
E. 24, 2

Answer: D

Explanation:
According to the technical documentation at CCO:
ISDN Primary Rate Interface (PRI) service offers 23 B channels and 1 D channel in North America and Japan, yielding a total bit rate of 1.544 Mbps (the PRI D channel runs at 64 kbps). ISDN PRI in Europe, Australia, and other parts of the world provides 30 B channels plus one 64-kbps D channel and a total interface rate of 2.048 Mbps. The PRI physical layer specification is ITU-T I.431.

QUESTION 399
You are a Cisco Certified Engineer. You are configuring a remote access solution. You may configure PPP on which of the following types of physical interfaces (Choose all that apply):

A. Synchronous serial
B. HSSI
C. Asynchronous serial
D. ISDN

Answer: A, B, C, D

Explanation:
According to Cisco: PPP, described in RFC 1661, encapsulates network layer protocol information over point-to-point links. You can configure PPP on the following types of physical interfaces:
Asynchronous serial
HSSI
ISDN
Synchronous serial
By enabling PPP encapsulation on physical interfaces, PPP can also be in effect on calls placed by the dialer interfaces that use the physical interfaces.

QUESTION 400
You want your router to be able to dynamically fluctuate at the rate at which it sends packets, depending on the BECNs it receives. What command will you use for this?

A. frame-relay shaping becn
B. frame-relay adaptive becn
C. frame-relay adaptive-shaping becn
D. frame-relay becn adaptive-shaping

Answer: C

Explanation:
According to Cisco: This command replaces the frame-relay becn-response-enable command, which will be removed in a future Cisco IOS release.