

Part 6

QUESTION 513

Match the WAN protocols on the bottom to their proper descriptions:

Description	Place WAN protocols here
point-to-point serial IP connections	place here
ITU-T standard protocol with error corrections	place here
standard-based, host to network over aynch/sync connections	place here
proprietary router-to-router corrections	place here
international standard cell switching protocol	place here
high performance, packet switched protocol	place here

Select from these	
X25	Point-to-Point Protocol (PPP)
High Level Data Link (HDLC)	Serial Link Internet Protocol (SLIP)
Frame Relay	Asynchronous Transfer Mode

Answer:

Explanation:

Description	Place WAN protocols here
point-to-point serial IP connections	Serial Link Internet Protocol (SLIP)
ITU-T standard protocol with error-correction	X25
standard-based, host to network over aynch/sync connections	Point-to-Point Protocol (PPP)
proprietary router-to-router corrections	High Level Data Link (HDLC)
international standard cell switching protocol	Asynchronous Transfer Mode
high performance, packet switched protocol	Frame Relay

Select from these

Reference:

Cisco Press Building Cisco Remote Access Networks Student Guide v1.1 Page 212 & 213

QUESTION 514

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

Answer:

Explanation:

TA	Defines the two-wire interface between the NT-1 and the ISDN cloud	U
	Defines the interface 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 515

Drag the queuing mechanisms on the left to its matching feature on the right hand side:

Flow-Based WFQ	Place here	Four queues; packet starvation possible
Priority Queuing	Place here	Designed to prioritize VoIP traffic; priority and weighted classes
Custom Queuing	Place here	Up to 64 classes; no priority queue(s)
Class-Based WFQ	Place here	Round robin service; user defined bandwidth allocation
Low Latency Queuing	Place here	Interactive traffic gets priority; no classes

Answer:

Explanation:

Priority Queuing	Four queues; packet starvation possible
Low Latency Queuing	Designed to prioritize VoIP traffic; priority and weighted classes
Class-Based WFQ	Up to 64 classes; no priority queue(s)
Custom Queuing	Round robin service; user defined bandwidth allocation
Flow-Based WFQ	Interactive traffic gets priority; no classes

QUESTION 516

You are tasked with determining the best queuing method to use in the Certkiller network. In regards to traffic control; which queuing method gives preferential service to low-volume traffic streams?

- A. FIFO Queuing
- B. Priority Queuing
- C. Custom Queuing
- D. Weighted Fair Queuing
- E. Low Latency Queuing
- F. None of the above

Answer: D

Explanation:

In WFQ, traffic is sorted by high and low volume conversations. The traffic in a session is kept within one conversation

(session), and the records are handled FIFO within a particular conversation. The lower volume interactive traffic is

given a priority and flows first. The necessary bandwidth is allocated to the interactive traffic, and the high volume

conversations equally share whatever band width is left over.

Reference:CCNP Remote Access Exam Certification Guide, page 298, Brian Morgan & Craig Dennis, Cisco Press

2001, ISBN 1587200031

QUESTION 517

How are routing updates and hellos processed when using custom queuing?

- A.They do not need to be queued.
- B.They are automatically placed in queue 0.
- C.They must manually be placed in a high priority queue.
- D.They must be part of a policy map to ensure that they have guaranteedbandwidth.

Answer: B

QUESTION 518

Drag the PPP authentication process action to its descriptions.

disconnect	
Determine authentication method	
Local database	
Incoming PPP negotiation	
Continue with PPP negotiation	
Security server database	
Start of PPP authentication process	Place here
Second step if authentication is configured	Place here
Checks using username and password	Place here
Queries this with TACAS+ or RADIUS	Place here
Does this if authentication fails	Place here
Does this if authentication passes	Place here

Answer:

Explanation:

Start of PPP authentication process	Incoming PPP negotiation
Second step if authentication is configured	Determine authentication method
Checks using username and password	Local database
Queries this with TACAS+ or RADIUS	Security server database
Does this if authentication fails	disconnect
Does this if authentication passes	Continue with PPP negotiation

QUESTION 519

IPSec is being used for the Certkiller VPN. In the IPSec protocol, what are the responsibilities of the Internet Key Exchange (IKE)? (Choose all that apply)

- A. Negotiating protocol parameters
- B. Integrity checking user hashes
- C. Authenticating both sides of a connection
- D. Implementing tunnel mode
- E. Exchanging public keys
- F. Packet encryption

Answer: A, C, E

Explanation:

Internet Key Exchange (IKE) is used to establish all the information needed for a VPN tunnel. Within IKE, you negotiate your security policies, establish your SAs, and create and exchange your keys that will be used by other

algorithms such as DES. IKE is broken down into two phases, described next.

Phase One of IKE

Phase one is used to negotiate policy sets, authenticate peers, and create a secure channel between peers. IKE phase

one can happen in one of two modes, main mode or aggressive mode. The major difference is that in main mode, three

different and distinct exchanges take place to add to the security of the tunnel, whereas in aggressive mode everything is

sent in a single exchange.

Phase Two of IKE

IKE phase two is used to negotiate the IPSec security parameters (such as the IPSec transform sets), establish SAs,

and optionally perform additional DiffieHellman

exchanges. IKE phase two has only one mode, called quick mode,

which happens only after IKE phase one has completed.

Reference:

Cisco Press BCRA 642821 Exam Certification Guide 2004 (ISBN 1587200848) Page 438 to 439

QUESTION 520

Match the IPSec terms on the left with their corresponding descriptions on the right.

authentication	The receiver can verify that the data was not altered during transit.	Place here
data integrity	Only entities permitted to see the data will have the capability to view the data.	Place here
data confidentiality	The receiver can determine the source of the packet, guaranteeing and certifying the source.	Place here
replay protection	The receiver can verify the correct sequence of packets as they arrive.	Place here

Answer:

Explanation:

The receiver can verify that the data was not altered during transit.	data integrity
Only entities permitted to see the data will have the capability to view the data.	data confidentiality
The receiver can determine the source of the packet, guaranteeing and certifying the source.	authentication
The receiver can verify the correct sequence of packets as they arrive.	replay protection

QUESTION 521

The Certkiller ISDN configuration of Router A is displayed below:



Assuming that there are only two BRI interfaces on Router A, how many B channels will end up forming the multilink PPP bundle between routers A & B when the total load threshold continuously remains greater than 50%?

- A.1
 - B.2
 - C.3
 - D.4
 - E.5
 - F.6
- 131

Answer: D

Explanation:

When the cumulative load of all UP links (a number) exceeds the load threshold the dialer adds an extra link and when the cumulative load of all UP links minus one (n - 1) is at or below load threshold then the dialer can bring down that one link. The dialer will make additional calls or drop links as necessary but will never interrupt an existing call to another destination.

The load argument is the calculated weighted average load value of

The load is calculated by the system dynamically, based on bandwidth. You can set the bandwidth for an interface in kilobits per second, using the bandwidth command.

The load calculation determines how much of the total bandwidth you are using. A load value of 255 means that you are using one hundred percent of the bandwidth. The load number is required. In this example, since the load is set to only 1 (either incoming or outgoing) the maximum number of BRI links will be bonded in the bundle. Since there are 2 data channels per BRI interface, all 4 of them will be utilized.

QUESTION 522

Exhibit:

```
<partial running configuration>
!
hostname CK1
!
username TK2 password 0 cisco
!
isdn switch-type basic-ni
!
interface Ethernet0/0
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 TK2 broadcast 5551111
dialer watch-group 8
dialer-group 1
isdn switch-type basic-ni
isdn spid1 5125552220101 5552222
isdn spid2 5125552230101 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
```

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 523

You are a senior network administrator and your junior administrator didn't arrive to work because he claimed he was sick. So you give him an assignment to do from home via Telnet. So from his home; he logged onto the companies router and entered the following command:

Router(config)#aaa newmodel

Before entering anything else, the lazy junior administrator (with the intention of being cautious) thought it would be safe to save the configuration to NVRAM, log off from telnet and take a break for a few hours. Assuming that no local username or password exists on the router database, what will happen when the administrator tries to immediately establish another telnet session? (Choose two)

- A. The session asks for a username that may not exist.
- B. The router requires a reboot so the administrator can login.

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- C.The administrator must access the router through the console port to login.
- D.The administrator can log in without using a password.

Answer: A, C

Explanation:

Once AAA has been enabled on the router, the administrator must declare the methods by which authentication can

take place. The key issue is to ensure that the administrator has a way to gain access to the router if the AAA server is

down. Failure to provide a backdoor interface can result in lost communications to the router and the necessity to break

in through the console port. Care should be taken to always configure a local access method during any implementation

of AAA.

References:

Cisco Press BCRAN 642821 Exam Certification Guide 2004 (ISBN 1587200848) Page 408

CCNP Remote Access Exam Certification Guide, page 374, Brian Morgan & Craig Dennis, Cisco Press 2001, ISBN

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QUESTION 524

Select from these

Place here

LA	<input type="checkbox"/>	Alarm indicating loss of signal, loss of frame, or unavailability because of excessive errors.
CD	<input type="checkbox"/>	Controller local loopback.
LP	<input type="checkbox"/>	Carrier received on telco link.
AL	<input type="checkbox"/>	Local alarm at remote end of connection
RA	<input type="checkbox"/>	Loss of signal, loss of frame, or unavailability because of excessive errors.

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Answer:

Explanation:

Select from these

Place here

AL	Alarm indicating loss of signal, loss of frame, or unavailability because of excessive errors.
LP	Controller local loopback.
CD	Carrier received on telco link.
RA	Local alarm at remote end of connection
LA	Loss of signal, loss of frame, or unavailability because of excessive errors.

QUESTION 525

If you wanted to cache the routes learned by distance vector dynamic routing protocols so you can use them over a DDR connection and keep line usage costs down; what strategy would you use?

- A.Route redistribution
- B.DDR route maps
- C.Snapshot routing
- D.Passive interfaces
- E.Dynamic static routes

Answer: C

Explanation:

In ISDN dialondemand routing (DDR) environments, distance vector routing protocol periodic updates can unnecessarily keep an idle DDR link up, resulting in high usage bills.Snapshot Routing can be implemented to overcome this limitation. Distance vector protocols such as IP Routing Information Protocol (RIP), Internetwork Packet Exchange (IPX) RIP, and Interior Gateway Routing Protocol (IGRP) send a full routing table at a fixed interval of time as described below:

- 1.The IP RIP routing protocol sends an update, by default, every 30 seconds.
- 2.The IPX RIP routing protocol sends an update every 60 seconds, per its default interval.
- 3.The IGRP routing protocol sends a routing table update, by default, every 90 seconds.

If you dialed the central site for each of these updates, this periodic traffic would keep an ISDN line up indefinitely and

result in a high usage bill. If you do not dial the central site for these updates, dynamic routes (learned from the routing

protocol) would be removed from the routing table. Snapshot routing forces the router to keep the routing table intact

when the DDR link is down and controls when to dial for periodic routing protocol updates.

Snapshot routing provides the remedy for the constant periodic updates generated by the distance vector routing protocols. Snapshot routing operates by defining a routing protocol updateactive periodandquiet period. The

router may exchange a snapshot of the routing table during the active period. After the active period expires, a quiet period is maintained where routing updates are suppressed and the snapshot of the routing table is kept intact. Snapshot routing can be applied to IPX/RIP and AppleTalk Routing Table Maintenance Protocol (RTMP) as well.

QUESTION 526

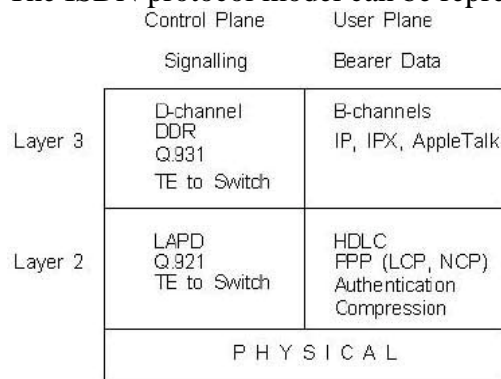
According to ISDN standards, the ITUT Q.931 is the protocol that works for:

- A. Layer3; D channel
- B. Layer1, D channel
- C. Layer5; B channel
- D. Layer2; B channel
- E. Layer4; B channel
- F. Layer2; D channel

Answer: A

Explanation:

The ISDN protocol model can be represented in the following diagram:



Everything that is important occurs in the Control Plane on the D-Channel.

Additional Info:

Layer 3 ISDN signalling is specified in Q.930 (ITUT I.450) and Q.931 (ITUT

I.451) and operate locally between the

router and the switch. Different switch vendors have different bit interpretations hence why the switch type is important.

Like Q.921, Q.931 is only concerned with the terminal to local switch, and it deals with making and tearing down the

call via the D channel. Within the ISDN network itself SS7 Internal Signalling Utility Protocol (ISUP) is used.

The

fields for Q.931 are shown below:

Bits 8 4 4 1 7 1 7 8

Protocol Discriminator	0's	Call Reference Length	Flag	Call Reference	0	Message Type	Information Elements
------------------------	-----	-----------------------	------	----------------	---	--------------	----------------------

Reference: <http://www.rhyshaden.com/isdn.htm>

QUESTION 527

The Certkiller WAN consists of a hub and spoke frame relay network. In a multipoint Frame Relay architecture, what is true about reachability issues? (Choose all that apply.)

- A. Split horizon can cause problems in NBMA environments.
- B. Subinterfaces can resolve split horizon issues.
- C. Split horizon is not an issue with multipoint subinterfaces.
- D. Subinterfaces do not apply in Frame Relay networks.
- E. Split horizon is an issue with point-to-point subinterfaces.
- F. A single physical interface can be configured to simulate multiple logical interfaces.
- G. All of the above.

Answer: A, B, F

Explanation:

The concept of sub interfaces was originally created in order to better handle issues caused by split-horizon over Non Broadcast Multiple Access (NBMA) networks (e.g. frame relay, X.25) and distance vector based routing protocols (e.g. IPX RIP/SAP, AppleTalk). Split horizon dictates that a routing update received on an interface cannot

be retransmitted out onto the same interface.

Multipoint interfaces/subinterfaces are still subject to the split horizon limitations as discussed above. All nodes attached

to a multipoint subinterface belong to the same network number. Typically, multipoint subinterfaces are used in conjunction with point-to-point interfaces in cases where an existing multipoint frame relay cloud is migrating to a

subinterfaced point-to-point network design. A multipoint subinterface is used to keep remote sites on a single network

number while slowly migrating remote sites to their own point-to-point subinterface network.

Configuring Frame Relay subinterfaces ensures that a single physical interface is treated as multiple virtual interfaces.

This capability allows you to overcome split horizon rules so packets received on one virtual interface can be forwarded

to another virtual interface, even if they are configured on the same physical interface.

References:

http://www.alliancedatacom.com/manufacturers/ciscosystems/framerelay_design/subinterfaces.asp

http://www.cisco.com/warp/public/116/fr_faq.html#21

QUESTION 528

You are a network design consultant and you've just been contracted by a human resource company to explain to them the benefits of a remote access server; more specifically, what kind of workers could benefit the most from them. How would you respond?

- A. Mobile sales force requiring dial-in access.
- B. Corporate staff requiring access to web-based applications.
- C. Mobile sales force requiring dedicated connection.
- D. Corporate staff requiring access to applications on corporate systems.
- E. None of the above

Answer: A

Explanation:

A router acts as an access server, which is a concentration point for dialin and dialout calls. Mobile users, for example, can call into an access server at a central site to access their email messages. The biggest users of remote

access servers are mobile employees that need occasional, temporary connections into the network.

Reference:

Cisco Press Building Cisco Remote Access Networks Student Guide v1.1 Page 2-8

QUESTION 529

Exhibit



Refer to the exhibit. Examine the show running config output taken on CK1. The BRI 0 interface on CK1 is connected 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 the backup interface configuration.
- D. The enable timer, specified by the backup delay command, has expired before the backup interface comes up.

Answer: B

QUESTION 530

You are a Cisco Certified Engineer. You are configuring a remote access solution. ITUT Q.931 is the protocol that works for:

- A. Layer3; D channel
- B. Layer1, D channel
- C. Layer5; B channel
- D. Layer2; B channel
- E. Layer4; B channel
- F. Layer2; D channel

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Answer: A

Explanation:

According to Cisco: Cisco platforms support Q.931 user and network side switch types for ISDN call processing.

User side PRI enables the Cisco platform to provide a standard ISDN PRI user side interface to the Public Switched

Telephone Network (PSTN). Network side PRI enables the Cisco platform to provide a standard Digital T1/E1 Packet Voice Trunk Network Modules on Cisco 2600 series and Cisco 3600 series routers. More inform can be found at: [this site](#)