



**Vendor: Cisco**

**Exam Code: 350-029**

**Exam Name: CCIE SP Written Exam**

**Version: Demo**

### QUESTION 1

Which three modes are the operating of HDLC? (Choose three)

- A. asynchronous balanced mode (ABM)
- B. normal response mode (NRM)
- C. normal peer mode (NPM)
- D. asynchronous client mode (ACM)
- E. asynchronous response mode (ARM)

**Correct Answer:** ABE

**Explanation:**

Normal response mode allows operation over half-duplex communication links, as long as the primary is aware that it may not transmit when it has given permission to a secondary. Asynchronous response mode is an HDLC addition[1] for use over full-duplex links. While retaining the primary/secondary distinction, it allows the secondary to transmit at any time. Asynchronous balanced mode added the concept of a combined terminal which can act as both a primary and a secondary. There are some subtleties about this mode of operation; while many features of the protocol do not care whether they are in a command or response frame, some do, and the address field of a received frame must be examined to determine whether it contains a command (the address received is ours) or a response (the address received is that of the other terminal).

### QUESTION 2

IP over DWDM management models (Choose two.)

- A. Segmented Management
- B. Integrated Management
- C. Virtual Transponder
- D. Traffic Management

**Correct Answer:** AB

**Explanation:**

1.2. IP over DWDM IPoDWDM supports 2 network management models:

1. Segmented Management:

Retain existing operational model for certain SPs.  
Respect boundaries between IP/Transport groups.

2. Integrated Management:

End to end provisioning.  
Better troubleshooting.  
1 Management system, 1 database.  
Unified look & feel.  
Lower OPEX.

Lay the Foundation for Network Convergence

IP over dense wavelength-division multiplexing (IPoDWDM) is a technology pioneered by Cisco that delivers superior service flexibility, scalability, and resiliency. It allows carriers to capitalize on increasingly bandwidth intensive and complex applications for next-generation Internet innovations and collaborative business services.

### Enhance Your IP Transport Through Innovation

IPoDWDM collapses network layers by tightly integrating DWDM interfaces with the routing platform. This increases efficiency, simplifies management, and accelerates service delivery. Combined with industry-leading omnidirectional and colorless reconfigurable optical add/drop multiplexer (ROADM) technology, IPoDWDM reduces service truck rolls, power consumption, and space and cooling requirements. Numerous providers now use the power of IPoDWDM to distribute video content rapidly and efficiently over an all-IP network. They can provision additional network capacity instantly as demand increases for any-play consumer and managed business services. The Cisco IPoDWDM solution reduces transport elements, while supporting advanced multilayer features such as proactive protection and control plane interaction, dramatically reducing operating expenses and capital costs.

Benefit from Valuable Product Enhancements

The Cisco IPoDWDM solution features:

Ultra long haul 100 Gb IPoDWDM capability, using the Cisco CRS 1-Port 100 Gigabit Ethernet Coherent

DWDM Interface Module

100 Gb coherent regeneration using the single-slot, 100 Gb trunk card on the ONS 15454

Multiservice

Transport Platform (MSTP), fully compatible with proactive protection. Proactive protection on the Cisco ASR 9000 Series 2-Port and 1-Port 100 Gigabit Ethernet LineCards

Industry-leading 10 Gb IPoDWDM density on the ASR 9000 Series 36-Port and 24-Port 10 Gigabit Ethernet

Line Cards

Complete Generalized Multiprotocol Label Switching (GMPLS) interoperability between the CRS-3, ASR 9000, and ONS 15454 MSTP

### QUESTION 3

Which three of these are optical channel data unit (ODU) overhead fields? (Choose three)

- A. general communication channel 0 (GCC0)
- B. section monitoring
- C. reserved (RES)
- D. general communication channels 1 and 2 (GCC1 GCC2)
- E. tandem connection monitoring activation deactivation (TCM ACT)

**Correct Answer:** CDE

#### **Explanation:**

Optical Data Unit (ODU)

The ODU overhead is broken into several fields: RES, PM, TCM<sub>i</sub>, TCM ACT, FTFL, EXP, GCC1/GCC2 and APS/PCC. The reserved (RES) bytes are undefined and are set aside for future applications.

The path monitoring (PM) field is similar to the SM field described above. It contains the TTI, BIP-8, BEI, BDI and Status (STAT) sub-fields.

There are six tandem connection monitoring (TCM<sub>i</sub>) fields that define the ODU TCM sub-layer, each containing TTI, BIP-8, BEI/BIAE, BDI and STAT sub-fields associated to each TCM level (i=1 to 6). The STAT sub-field is used in the PM and TCM<sub>i</sub> fields to provide an indication of the presence or absence of maintenance signals.

The tandem connection monitoring activation/deactivation (TCM ACT) field is currently undefined in the standards. The fault type and fault location reporting communication channel (FTFL) field is used to create a message spread over a 256-byte multiframe. It provides the ability to send

forward and backward path-level fault indications.

The experimental (EXP) field is a field that is not subject to standards and is available for network operator applications.

General communication channels 1 and 2 (GCC1/GCC2) fields are very similar to the GCC0 field except that each channel is available in the ODU.

The automatic protection switching and protection communication channel (APS/PCC) supports up to eight levels of nested APS/PCC signals, which are associated to a dedicated-connection monitoring level depending on the value of the multiframe.

#### QUESTION 4

What is one of the primary overhead fields associated with the Optical Payload Unit (OPU)?

- A. path monitoring
- B. tandem connection monitoring activation deactivation (TCM ACT)
- C. Payload Structure Identifier (PSI)
- D. multiframe alignment signal (MFAS)
- E. section monitoring

**Correct Answer:** C

**Explanation:**

Optical Payload Unit (OPU)

In order to begin describing the OTN as defined by the ITU G.709 standard, we must first enumerate its critical elements, their termination points, and the way they relate to one another in terms of hierarchy and function.

The primary overhead field associated with the OPU is the payload structure identifier (PSI). This is a 256-byte multiframe whose first byte is defined as the payload type (PT). The remaining 255 bytes are currently reserved. The other fields in the OPU overhead are dependent on the mapping capabilities associated to the OPU. For an asynchronous mapping (the client signal and OPU clock are different) justification control (JC) bytes are available to Application Note 153 Telecom Test and Measurement compensate for clock rate differences. For a purely synchronous mapping (client source and OPU clock are the same), the JC bytes become reserved. Further details on mapping are available in ITU G.709.

#### QUESTION 5

In optical channel transport unit overhead (OTU OH), what are general communication channels 1 and 2 (GCC1/GCC2) used for?

- A. for trail trace identification
- B. as the backward defect indicator
- C. to transmit information between OTU termination points
- D. to extend command and management functions over several frames
- E. General communication channels 1 and 2 (GCC1/GCC2) do not belong to OTU OH.

**Correct Answer:** E

**Explanation:**

OTU overhead:

The OTU overhead consists of three bytes for section monitoring (SM), a two-byte general communications channel (GCC0), and two bytes reserved for future international standardization.

### QUESTION 6

What is the minimum hardware configuration of the multishelf Cisco CRS-1 system?

- A. One route processor (RP) card and one modular services card (MSC)
- B. One distributed route processor (DRP) and one S13 fabric card (SFC)
- C. One line card chassis (LCC) and one fabric card chassis (FCC)
- D. One route processor (RP) and one fabric card chassis (FCC)
- E. One line card chassis (LCC) and one S13 fabric card (SFC)

**Correct Answer: C**

**Explanation:**

1.4. SP high end product

A minimum of one LCC and one FCC are required to configure a multishelf system.

### QUESTION 7

Cisco IOS XR software is partitioned into three planes: control, data, and management. Which three of these belong to the data plane? (Choose three.)

- A. XML
- B. RIB
- C. FIB
- D. QoS
- E. PFI

**Correct Answer: CDE**

**Explanation:**

(FIB, QoS, PFI). RIB is part of control plane

1.4. SP high end product

Cisco IOS XR Software is partitioned into three planes:

Control: Distributes routing tasks and management of the routing information base (RIB) to participating RPs; different routing processes can be running on different physical units. Data: Maintains the forwarding information base (FIB) changes across the participating nodes, letting the router perform as a single forwarding entity.

Management: Controls the operation of the router as a single networking element.

### QUESTION 8

Which statement about Software Maintenance Upgrade is true?

- A. CRS-1 SMU can be applied to a different platform, and vice versa.
- B. SMU is an executable code for running a process or libraries that are shared between the different processes.
- C. SMUs for each release are individually downloadable from Cisco.com and come in the form of a tar ball.
- D. SMUs provide software fixes for critical network down and qualification blocking issues. Therefore, every software defect has a corresponding SMU.
- E. SMUs are release-specific. If an issue affects multiple platforms or releases, an SMU is built separately for each release and each platform.

**Correct Answer: E**

**Explanation:**

1.4. SP high end product

SMUs for each release are individually downloadable from Cisco.com, whereas the bootable files

and optional PIEs come in the form of a tarball. SMUs are release specific. If an issue affects multiple platforms or releases, an SMU will be separately built for each release and each platform depending on the mission-critical need. A CRS-1 SMU cannot be applied to a different platform, and vice versa. SMUs provide software fixes for critical network-down and qualification-blocking issues. Therefore, every software defect will not have a corresponding SMU.

#### QUESTION 9

Cisco IOS XR has implemented a nonstop routing feature so that when RP failover occurs, the routing information can be recovered locally. Which protocol does not support the NSR feature?

- A. OSPF
- B. LDP
- C. BGP
- D. IS-IS
- E. RSVP

**Correct Answer:** E

#### QUESTION 10

Which three components are included in the Cisco IOS XR infrastructure? (Choose three.)

- A. modular line cards
- B. shelf controllers
- C. route processors
- D. service processors
- E. distributed service cards

**Correct Answer:** BCD

#### Explanation:

1.4. SP high end product

1.4.01. IOS-XR structure

Distributed Infrastructure

The kernel is replicated across the router infrastructure. The services and client applications can be distributed across the router infrastructure. The infrastructure includes route processors (RPs), distributed route processors (DRPs), service processors (SPs), shelf controllers (SCs), modular service cards (MSCs), and line cards (LCs).

#### QUESTION 11

All secure domain routers (SDRs) have shared attribute and resources. Which three resources are shared all SDRs? (Choose three.)

- A. privilege-level configuration
- B. fabric cards
- C. SNMP traps
- D. admin-level configuration
- E. exec-level configuration

**Correct Answer:** BCD

#### Explanation:

1.4. SP high end product

There are shared attributes and resources common to all SDRs. It is important to note that the shared resources are critical to the system's overall operation. Some examples of shared resources that are common to SDR are:

Environmental resources.  
Power supplies.  
Fan trays.  
Fan controllers.  
Fabric cards.

Software related:

- \* Exec-level configuration. Configuration in admin mode can affect all SDRs.
- \* Admin-level configuration. Admin-level command can impact owner SDR and non-owner SDRs.
- \* Process instances. A few processes are shared, systemwide processes such as LRd (SDR Daemon).

Management:

- \* SNMP traps. For example, shared power, fans, and fabric-related traps.
- \* SNMP polling. Shared for power, fans, and fabric-related MIBS.
- \* Syslogs. Some non-owner SDRs are logged to the owner SDR.
- \* Shared environment variables.

#### QUESTION 12

Which three statements about the secure domain router are true?(Choose three.)

- A. The logical router can span across chassis.
- B. The fabric and system controller module are shared by all logical routers.
- C. Each logical router has a distinct fabric and system controller module
- D. The logical router can share a routeprocessor
- E. The logical router cannot share a route processor.

**Correct Answer:** ABE

**Explanation:**

- 1.4. SP high end product
- 1.4.04. Secure domain router (SDR)

#### QUESTION 13

There are two cabling schemes to choose from when implementing a Cisco CRS-1 multi shelf system:single module cabling and multi module cabling. What is the maximum capacity of the LCCs that are supported in multi module cabling?

- A. 9 LCCs
- B. 7 LCCs
- C. 10 LCCs
- D. 6 LCCs
- E. 8 LCCs

**Correct Answer:** A

**Explanation:**

- 1.4. SP high end product
- A single card or multiple cards can be grouped as a fabric plane. Single-module cabling requires eight S2 cards in the fabric card chassis. In this mode, each S2 is dedicated to a plane number

and cabled to the appropriate line card chassis plane. If your network requires more than three LCC in the multi shelf system, this is achieved using the multi module configuration. Multi module configuration provides capacity to add up to nine LCCs.

#### QUESTION 14

Process-level redundancy is implemented by a system manager process that creates the standby process. What two functions are provided by the system-level process called Qnet Symlink Manager (QSM)? (Choose two.)

- A. backing up the information for the broken connections
- B. provides common information for connecting processes and services
- C. detection of a failed connection
- D. provides an abstract name for a process or service
- E. distribution of symbolic link information

**Correct Answer:** DE

#### **Explanation:**

1.4. SP high end product

1.4.01. IOS-XR structure

Process-Level Redundancy

Process-level redundancy is implemented by a system manager process creating the standby process.

Because the active process created the standby process, the active process has all the information that it needs to communicate with the standby process. The active process uses a checkpoint database to share running state with the standby process. Symbolic links and abstract names are used to identify the processes. Clients do not see the standby process until the active goes away. If a process fails and it has created a standby process, a system-level process called QNet Symlink Manager (QSM) and a library called Event Connection Manager (ECM) are used to re-establish links from the clients to the processes.

QSM provides:

Distribution of symbolic link information

Abstract name for a process or service

ECM provides:

Common information for connecting processes and services

Detection of broken connections

Only processes considered essential by development engineers are designated to support process-level redundancy. This is not a user-configurable option. Clients have to reconnect to the "new" active process (the "original" standby process) when they detect that the active process has failed. Clients can connect to it using the symbolic links and abstract names. The new active process creates a new standby process.

The general steps in process redundancy are:

The active process dies.

The standby process becomes the active process.

A new standby process starts.

The new active process begins sending updates to the new standby process. Clients begin using the new active process through the symbolic links and abstract names.

#### QUESTION 15

When will the primary processor core dump run in case of a switchover?

- A. never takes place
- B. periodically



- C. during switchover
- D. after switchover
- E. before switchover

**Correct Answer:** D

**Explanation:**

In networking devices with redundant processors, the Post-Switchover Core Dump feature uses better software communication techniques between redundant processors to allow the switchover to occur before dumping core information. Not having to wait for dump operations effectively decreases the switchover time between processors. The newly active primary processor runs the core dump operation after switchover.

Reference

[http://www.cisco.com/en/US/docs/ios/12\\_0st/12\\_0st18/feature/guide/coredump.html](http://www.cisco.com/en/US/docs/ios/12_0st/12_0st18/feature/guide/coredump.html)

**QUESTION 16**

DRAG DROP

**Perform an IOS-XR Upgrade. Select the correct order**

<div style="border: 1px solid black; background-color: #c6e0b4; padding: 5px; margin-bottom: 10px;">deactivate</div> <div style="border: 1px solid black; background-color: #c6e0b4; padding: 5px; margin-bottom: 10px;">remove</div> <div style="border: 1px solid black; background-color: #c6e0b4; padding: 5px; margin-bottom: 10px;">add</div> <div style="border: 1px solid black; background-color: #c6e0b4; padding: 5px; margin-bottom: 10px;">commit</div> <div style="border: 1px solid black; background-color: #c6e0b4; padding: 5px;">activate</div>	<div style="border: 1px solid black; background-color: #ffffcc; padding: 5px; margin-bottom: 10px;">install</div> <div style="border: 1px solid black; background-color: #ffffcc; padding: 5px; margin-bottom: 10px;">install</div> <div style="border: 1px solid black; background-color: #ffffcc; padding: 5px; margin-bottom: 10px;">install</div> <div style="border: 1px solid black; background-color: #ffffcc; padding: 5px; margin-bottom: 10px;">install</div> <div style="border: 1px solid black; background-color: #ffffcc; padding: 5px;">install</div>
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**Correct Answer:**

Perform an IOS-XR Upgrade. Select the correct order

deactivate

remove

add

commit

activate

deactivate

remove

add

activate

commit

**QUESTION 17**

CRS-1 single shelf maximum capacities?

- A. 320 Gbit/s
- B. 640 Gbit/s
- C. 1.2 Tbit/s
- D. 92 Tbit/s

**Correct Answer: C**

**Explanation:**

- 1.4. SP highend product
- 1.4.05. CRS-1/3 structure

**QUESTION 18**

Which of the following processes in IOS XR run exclusively on the Route Processor? (Choose two.)

- A. wdsysmon
- B. mpls\_idp
- C. sysmgr
- D. gsp
- E. bgp

**Correct Answer: BE**

**QUESTION 19**

Refer to the exhibit. Which router is the DIS?

```
Router-44# show isis database router-11.00-00 detail
IS-IS Level-1 LSP router-11.00-00
LSPID                LSP Seq Num  LSP Checksum  LSP Holdtime  ATT/P/OL
router-11.00-00      0x000000079  0xBAB5        822           0/0/0
  Area Address: 49.0001
  NLPID:          0xCC
  Code:          137 Length: 8
  IP Address:    172.16.1.1
  Metric: 10 IP 172.16.126.0 255.255.255.0
  Metric: 10 IP 172.16.1.0 255.255.255.0
  Metric: 10 IS router-33.01
  Metric: 10 IS router-44.00
```

```
Router-44# show isis database router-22.00-00 detail
IS-IS Level-1 LSP router-22.00-00
LSPID                LSP Seq Num  LSP Checksum  LSP Holdtime  ATT/P/OL
router-22.00-00      0x000000072  0x4FE3        791           0/0/0
  Area Address: 49.0001
  NLPID:          0xCC
  Code:          137 Length: 8
  IP Address:    172.16.126.2
  Metric: 10 IP 172.16.126.0 255.255.255.0
  Metric: 10 IS router-33.01
```

```
Router-44# show isis database router-33.01-00 detail
IS-IS Level-1 LSP router-33.01-00
LSPID                LSP Seq Num  LSP Checksum  LSP Holdtime  ATT/P/OL
router-33.01-00      0x00000006D  0x65CF        759           0/0/0
  Metric: 0 IS router-33.00
  Metric: 0 IS router-22.00
  Metric: 0 IS router-11.00
```

```
Router-44# show isis database router-44.00-00 detail
IS-IS Level-1 LSP router-44.00-00
LSPID                LSP Seq Num  LSP Checksum  LSP Holdtime  ATT/P/OL
router-44.00-00*     0x000000072  0xF71E        554           0/0/0
  Area Address: 49.0001
  NLPID:          0xCC
  IP Address:    172.16.1.8
  Metric: 10 IP 172.16.1.0 255.255.255.0
  Metric: 10 IS router-11.00
  Metric: 0 ES router-88
```

- A. router-22
- B. router-44
- C. router-33 and router-44
- D. router-11
- E. router-33

**Correct Answer: E**

### QUESTION 20

What three major tasks are performed by a Designated Intermediate System in an ISIS pseudonode environment? (Choose three.)

- A. updating the pseudonode LSP
- B. maintaining pseudonode link-state information
- C. creating the pseudonode LSP
- D. flooding LSPs over the LAN
- E. election of the pseudonode

**Correct Answer:** ACD

**Explanation:**

Two major tasks are performed by the DIS:

Creating and updating pseudonode LSP for reporting links to all systems on the broadcast subnetwork. See the Pseudonode LSP section for more information.

Flooding LSPs over the LAN.

Flooding over the LAN means that the DIS sends periodic complete sequence number protocol data units (CSNPs) (default setting of 10 seconds) summarizing the following information:

LSP ID  
Sequence Number  
Checksum  
Remaining Lifetime

The DIS is responsible for flooding. It creates and floods a new pseudonode LSP for each routing level in which it is participating (Level 1 or Level 2) and for each LAN to which it is connected. A router can be the DIS for all connected LANs or a subset of connected LANs, depending on the IS-IS priority or the Layer 2 address.

The DIS will also create and flood a new pseudonode LSP when a neighbor adjacency is established, torn down, or the refresh interval timer expires. The DIS mechanism reduces the amount of flooding on LANs.

### QUESTION 21

What bit should be set in the link state PDUs in an IS-IS level-1-2 router to indicate that they are a potential exit point out of the area?

- A. ATT (Attached) bit
- B. ABR (Area Border Router) bit
- C. PN (Pseudonode) bit
- D. P (Partition) bit
- E. Down bit
- F. IS-Type bit

**Correct Answer:** A

### QUESTION 22

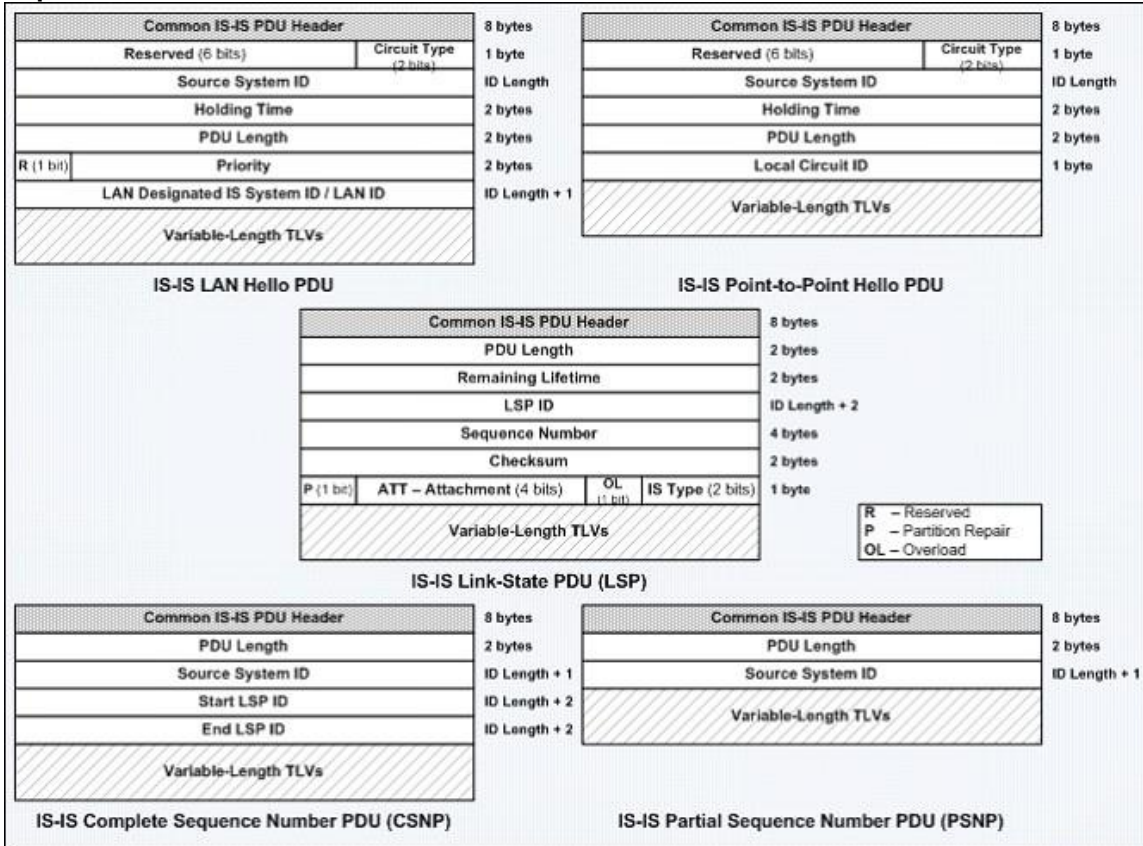
The Attribute field within the IS-IS LSP header contains which of the following flags? (Choose four)

- A. IS-Type

- B. Overload (LSPDBOL)
- C. Pseudonode (PN)
- D. Attached (ATT)
- E. Fragment (Frag-Nr)
- F. Partition (P)

**Correct Answer:** ABDF

**Explanation:**



**Partition Repair (P):** Although this bit exists in both L1 and L2 LSPs, it is relevant only in L2 LSPs. When this bit is set to 1, it indicates that the originating router supports the automatic repair of area partitions. Cisco IOS does not support this feature; it always originates LSPs with the P bit set to 0.

**Attachment (ATT):** A 4-bit field indicating whether the originating router is attached to one or more areas.

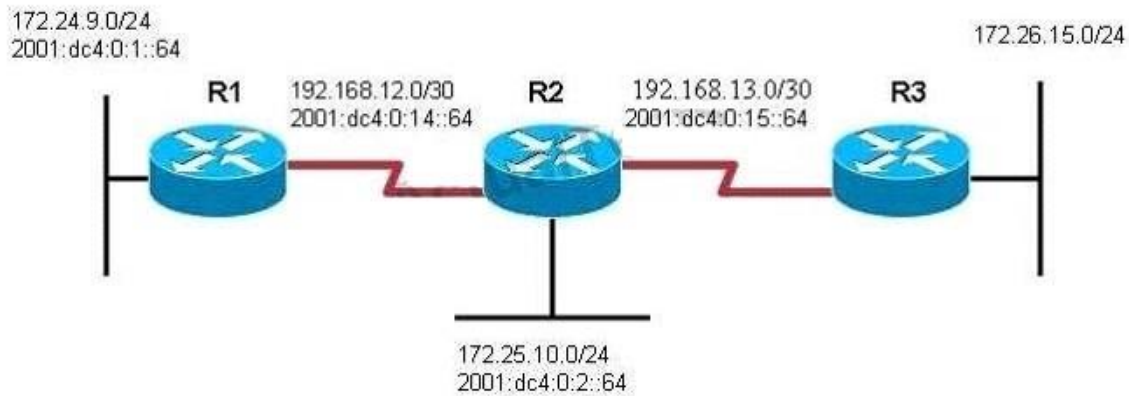
Although this bit exists in both L1 and L2 LSPs, it is relevant only in L1 LSPs originated by L1/L2 routers to indicate that it is also a L2 router, which is a potential exit to reach other areas. Reading from left to right (bits 7 - 4), the bits indicate the Error metric, the Expense metric, the Delay metric, and the Default metric. Cisco IOS supports only the default metric, so bits 5 - 7 are always 0.

**Overload (OL):** The Link-State Database Overload bit. This bit is often set to 0. A router sets this bit on its LSPs when unable to store the entire LSDB. Routers receiving an LSP with the OL bit set will not use the originating router as a transit router as its routing table is incomplete, which may result in suboptimal routing and even routing loops; but they will still forward packets.

destined to the directly connected networks or interfaces of the originating router.  
 IS Type A 2-bitfield indicating whether the originating router is an L1 or L2 IS.  
 01 - L1; 11 - L2; 00 and 10 are unused values.  
 An L1/L2 router sets the bits accordingly upon its L1 and L2 LSPs.

**QUESTION 23**

Refer to the exhibit. Your customer has enabled IPv6 and IPv4 on routers R1 and R2, both running ISIS routing protocol, and they can no longer reach R3 network 172.26.15.0/24 (R3 does not enable IPv6, enables IPv4 only). Which two steps should be taken to restore reach ability to R3? (Choose two.)



- A. Enable OSPFv3 to support IPv4 and IPv6 simultaneously.
- B. Configure static routes to all unreachable networks and redistribute to IS-IS.
- C. Create an IPv6 tunnel from R2 to R3.
- D. Transition to IS-IS Multiple Topology Mode on R3.
- E. Enable wide metrics.
- F. Transition to IS-IS Multiple Topology Mode on R1 and R2.

**Correct Answer:** EF

**QUESTION 24**

What ISIS TLVs are used to support MPLS Traffic Engineering? (Choose three).

- A. Extended IS neighbor TLV #22
- B. Extended IS name TLV #137
- C. Extended IS resource TLV#138
- D. Extended IS reachability TLV #135
- E. Router ID TLV #134

**Correct Answer:** ADE

**Explanation:**

TLV Name Description

- 1 Area Address Includes the Area Addresses to which the Intermediate System is connected.
- 2 IIS Neighbors Includes all the IS-ISs running interfaces to which the router is connected.
- 8 Padding Primarily used in the IS-IS Hello (IIH) packets to detect the maximum transmission unit (MTU) inconsistencies. By default, IIH packets are padded to the fullest MTU of the interface.
- 10 Authentication The information that is used to authenticate the PDU, 22 TE IIS Neighbors

Increases the maximum metric to three bytes (24 bits). Known as the Extended IS Reachability TLV, this TLV addresses a TLV 2 metric limitation. TLV 2 has a maximum metric of 63, but only six out of eight bits are used.

128 IP Int. Reachability Provides all the known IP addresses that the given router knows about via one or more internally-originated interfaces. This information may appear multiple times.

129 Protocols Supported Carries the Network Layer Protocol Identifiers (NLPID) for Network Layer protocols that the IS (Intermediate System) is capable. It refers to the Data Protocols that are supported. For example, IPv4 NLPID value 0xCC, CLNS NLPID value 0x81, and/or IPv6 NLPID value 0x8E will be advertised in this NLPID TLV.

130 IP Ext. Address Provides all the known IP addresses that the given router knows about via one or more externally-originated interfaces. This information may appear multiple times.

132 IP Int. Address The IP interface address that is used to reach the next-hop address.

134 TE Router ID This is the Multi-Protocol Label Switching (MPLS) traffic engineering router ID.

135 TE IP Reachability Provides a 32 bit metric and adds a bit for the "up/down" resulting from the route leaking of L2->L1. Known as the Extended IP Reachability TLV, this TLV addresses the issues with both TLV 128 and TLV 130.

137 Dynamic Hostname Identifies the symbolic name of the router originating the link-state packet (LSP).

10 and 133 TLV 10 should be used for Authentication; not the TLV 133. If TLV 133 is received, it is ignored on receipt, like any other unknown TLVs. TLV 10 should be accepted for authentication only.

#### QUESTION 25

How do routers in an IS-IS Level-1 domain exit to reach other Level-1 domains? (Choose two.)

- A. Level-1 routers use default routes announced by Level-2 routers in Level-1 domain
- B. Level-1 routers use default routes installed based on ATT bit (Attach Bit) in announcements from Level-1-2 router
- C. Level-1 routers use specific routes, for other Level-1 domain, announced by Level-1-2 router by route leaking feature of Cisco IOS
- D. Level-1 routers use specific routes, for other Level-1 domain, announced by Level-2 router by route-leaking feature of Cisco IOS

**Correct Answer:** BC

#### QUESTION 26

In the IS-IS Designated Intermediate System (DIS) election process, which criteria is used for DIS selection?

- A. highest router ID first, then highest priority
- B. highest MAC address first, then highest priority
- C. highest router ID first, then highest MAC address
- D. highest priority first, then highest router ID
- E. highest priority first, then highest MAC address

**Correct Answer:** E

**QUESTION 27**

What is periodically multicasted (every 10 seconds) by the DIS on a LAN to ensure IS-IS Link State Database accuracy?

- A. IIH
- B. LSP
- C. CSNP
- D. ISH
- E. PSNP

**Correct Answer: C**

**Explanation:**

On broadcast networks, designated routers send complete sequence number PDU (CSNP) packets to maintain database synchronization. The CSNP interval timer is the number of seconds between transmissions of CSNP packets from this interface.

**QUESTION 28**

Which two statements regarding the IS-IS DIS election process are true? (Choose two.)

- A. L1 routers on a broadcast network only establish adjacencies with the DIS.
- B. If the DIS becomes unavailable the backup DIS is promoted to DIS.
- C. Adding a router with a higher priority than the current DIS will result in the new router becoming DIS.
- D. Separate L1 and L2 election processes are held on a broadcast network.
- E. A priority of 0 will prevent a router from becoming a DIS.
- F. If there is a tie based on priority, the router whose attached interface has the lowest MAC address becomes the DIS.

**Correct Answer: CD**

**Explanation:**

Election of the DIS

On a LAN, one of the routers elects itself the DIS, based on interface priority (the default is 64). If all interface priorities are the same, the router with the highest subnetwork point of attachment (SNPA) is selected. The SNPA is the MAC address on a LAN, and the local data link connection identifier (DLCI) on a Frame Relay network. If the SNPA is a DLCI and is the same at both sides of a link, the router with the higher system ID becomes the DIS. Every IS-IS router interface is assigned both a L1 priority and a L2 priority in the range from 0 to 127.

The DIS election is preemptive (unlike OSPF). If a new router boots on the LAN with a higher interface priority, the new router becomes the DIS. It purges the old pseudonode LSP and floods a new set of LSPs.



**QUESTION 29**

DRAG DROP

Drag the ISIS packet types to correct type definition.

Discover neighbors to establish the adjacency with them.	IIH
Link state packet, four types.	PSNP
Contains a list of all LSPs from the current database.	CSNP
Used to request an LSP and acknowledge receipt of an LSP.	LSP

**Correct Answer:**

Discover neighbors to establish the adjacency with them.	Discover neighbors to establish the adjacency with them.
Link state packet, four types.	Used to request an LSP and acknowledge receipt of an LSP.
Contains a list of all LSPs from the current database.	Contains a list of all LSPs from the current database.
Used to request an LSP and acknowledge receipt of an LSP.	Link state packet, four types.

**QUESTION 30**

What is the importance of using Virtual Output Queues on ingress Line Cards in a high-end router?

- A. Increases forwarding performance
- B. Simplifies configuration
- C. Prevents head-of-line blocking
- D. Uses less memory

**Correct Answer: C**

**QUESTION 31**

What is the default SPF throttle timer in OSPF?

- A. 5s
- B. 10ms
- C. 0ms
- D. 30s
- E. 1s

F. 500ms

**Correct Answer:** A

**QUESTION 32**

Which OSPF LSA is used to support MPLS Traffic-Engineering?

- A. NSSA LSA (Type 7)
- B. Opaque LSA (Type 11)
- C. Opaque LSA (Type 9)
- D. Opaque LSA (Type 10)
- E. External LSA (Type 5)

**Correct Answer:** D

**Explanation:**

Type 10 - an area-local "opaque" LSA as defined by RFC2370. Opaque LSAs contain information which should be flooded by other routers even if the router is not able to understand the extended information itself.

Typically type 10 LSAs are used for traffic engineering extensions to OSPF, flooding extra information about links beyond just their metric, such as link bandwidth and color.

**QUESTION 33**

If two routers, both reachable from one another, originate functionally equivalent type 2 external LSAs (i.e. same destination, cost and non-zero forwarding address). Which of the following statements would apply?

- A. Only the LSA generated by the lowest RID ASBR will exist in the network
- B. Two LSAs will exist in the network for this destination, but only the one generated by the highest RID ASBR will be used
- C. Two LSAs will exist in the network for this destination, and both will be used
- D. Only the LSA generated by the highest RID ASBR will exist in the network

**Correct Answer:** D

**QUESTION 34**

The show ip ospf database external command displays information about which OSPF LSA type?

- A. LSA type 1
- B. LSA type 2
- C. LSA type 7
- D. LSA type 3
- E. LSA type 9
- F. LSA type 5

**Correct Answer:** F

**QUESTION 35**

Routes redistributed into an OSPF ASBR are which LSA type?

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

**Correct Answer:** D

**QUESTION 36**

When the Cisco IOS OSPF command ip ospf dead-interval minimal hello-multiplier 5 is configured, which two statements are true? (Choose two.)

- A. OSPF hello interval is 5 seconds
- B. OSPF hello interval is 1 second
- C. OSPF dead interval is 1 second
- D. OSPF dead interval is 5 seconds
- E. OSPF dead interval is 20 seconds
- F. OSPF hello interval is 0.2 second

**Correct Answer:** CF

**QUESTION 37**

Which three statements about OSPF partial SPF are true? (Choose three)

- A. If it is triggered by Type 4, all Type 4 LSAs that announce a certain ASBR and all Type 5 and 7 LSAs are processed
- B. If it is triggered by Types 5 and 7, all Type 5 and 7 LSAs that contribute to a certain destination are processed.
- C. If it is triggered by Type 2, all Type 2 LSAs that contribute to a certain destination are processed.
- D. It is triggered by the change of Type 3, 4, 5, and 7 LSAs.
- E. It is triggered by the change of Type 2, 3, 5, and 7 LSAs

**Correct Answer:** ABD

**Explanation:**

Executed on a change in a type-3/4/5/7 LSA (as per sections 16.5 and 16.6 of RFC2328)

If there is a change in a type-1 or type-2 LSA, it affects the topology of the area and so a full SPF must be run.

**QUESTION 38**

Which statement about OSPF ASBR summary LSA is true?

- A. It is generated by an ASBR and indicates the reachability to an ABR located in another area.
- B. It is generated by ABR and indicates the reachability to an ASBR located in another AS.
- C. It is generated by ABR and indicates reachability to itself.
- D. It is generated by ABR and indicates the reachability to an ASBR located in another area.

E. It is generated by an ASBR and indicates the reachability to an ABR.

**Correct Answer:** D

**QUESTION 39**

Which two statements about OSPF IPv6 routing are true? (Choose two)

- A. It requires OSPF version 3.
- B. automatically detects neighbors over NHMA interfaces
- C. It supports encryption using
- D. It uses LSA type 9
- E. It uses LSA type 8

**Correct Answer:** AE

**QUESTION 40**

Which statement about OSPF authentication is true?

- A. To enable OSPF authentication in a network, OSPF area 0 authentication must be enabled first.
- B. The payload of OSPFv3 packets contains no authentication information.
- C. OSPFv3 supports Advanced Encryption Standard
- D. OSPFv3 uses router ID as a key to encrypt OSPF hello packets.
- E. OSPF MD5 authentication uses TCP, and Plain Text authentication uses UDP.

**Correct Answer:** B

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<a href="#">352-001</a>	<a href="#">642-813</a>	<a href="#">JK0-010</a>	<a href="#">SY0-401</a>	<a href="#">1Z0-485</a>		<a href="#">EX300</a>
<a href="#">400-101</a>	<a href="#">642-832</a>	<a href="#">JK0-801</a>	<a href="#">PK0-003</a>	<a href="#">1Z0-580</a>		
<a href="#">640-461</a>	<a href="#">642-902</a>			<a href="#">1Z0-820</a>		



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