350-029

CCIE SP Written Exam

DEMO

Topic 1, I&O&T Core IP Technologies

QUESTION NO: 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)

Answer: A,B,E

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 NO: 2

IP over DWDM management models (Choose two.)

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

Answer: A,B

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.

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- 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 educes 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 Line Cards

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 NO: 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)

Answer: C,D,E

Explanation: Optical Data Unit (ODU)

The ODU overhead is broken into several fields: RES, PM, TCMi, 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 (TCMi) 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 TCMi 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 NO: 4