Practice Exam Questions

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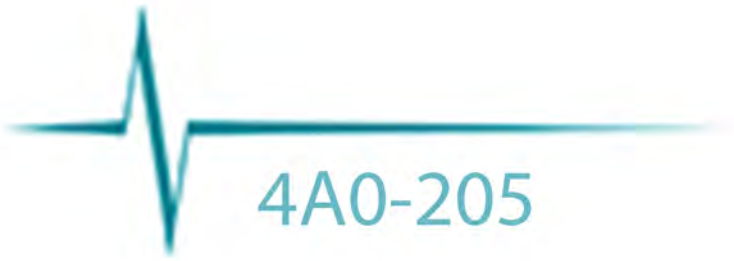

Nokia Optical Networking Fundamentals

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Nokia

Exam 4A0-205

Nokia Optical Networking Fundamentals

Version: 3.0

[Total Questions: 40]

Question No : 1

How does a Raman pump work in the 1830 specific implementation?

A. The amplification is done simultaneously for all channels as they enter the board.
B. As the incoming signal power increase, the gain of the amplifier is reduced.
C. The pump light travels in the same direction of the signal, amplifying it while it flows in the fiber towards the following node.
D. The pump light travels in the opposite direction of the signal to be amplified, amplifying it while it arrives from the adjacent node.

Answer: D

Explanation: In Raman amplification, a pump laser is used to excite the Raman-active molecules in the fiber, which then amplifies the signal light as it travels in the opposite direction. In the 1830 specific implementation, the pump laser is typically a high-power laser that is launched into the fiber in the opposite direction to the signal. The pump light interacts with the Raman-active molecules in the fiber, which then amplifies the signal light as it travels in the opposite direction. This allows the Raman pump to provide a gain that increases with distance, which can be used to compensate for the loss of signal power as it travels through the fiber.

Question No : 2

Which of the following sentences about FlexGrid is false?

A. FlexGrid allows a more efficient channel spacing.
B. Channels in FlexGrid systems are allocated with a granularity of 27.5GHz.
C. FlexGrid systems use specific sets of boards. Old generation WDM systems need to be upgraded to support FlexGrid.
D. The FlexGrid is currently standardized by ITU-T.

Answer: C

Explanation: FlexGrid is a flexible grid technology that allows for variable channel spacing and bandwidth allocation. It uses the same sets of boards as the traditional fixed grid systems and it does not require upgrading the old generation WDM systems.
References:

- "Flexible Grid Optical Networks: From Concepts to Realizations" by Diomidis S. Michalopoulos and George K. Karagiannidis
- "Flexible Grid and Flexible Spectrum Optical Networks" by Diomidis S. Michalopoulos and George K. Karagiannidis
- "Flexible Grid Optical Networks" by Diomidis S. Michalopoulos and George K. Karagiannidis

Question No : 3

Which of the following statements is true about chromatic dispersion (CD)?

A. Different channels have different bandwidth and this causes different CD performances.
B. The fiber attenuation changes along the fiber, and when the light crosses these differences the CD takes place.
C. Different wavelengths propagate at different speeds within the same media and therefore different colors travel in the fiber with different speed.
D. The fiber attenuation introduces inter-channel interference.

Answer: C

Explanation: Different wavelengths propagate at different speeds within the same media and therefore different colors travel in the fiber with different speed. This phenomenon is known as chromatic dispersion and causes light to spread out as it travels through the fiber over distance, leading to signal attenuation and distortion. The fiber attenuation does not introduce inter-channel interference, but it can cause attenuation of the signal. Different channels have different bandwidths, but this does not affect CD performance.

Question No : 4

Which of the following applications is related to Wavelength Tracker tool?

A. Collecting logs related to possible issue affecting a wavelength path
B. Tracking the protection path for a specific wavelength
C. Tracing the end-to-end wavelength optical power
D. Correcting errors related to wavelength inconsistencies

Answer: B

Explanation: Tracking the protection path for a specific wavelength. The Wavelength Tracker tool is used to track the protection path of a specific wavelength, allowing the user to quickly identify any issues that may arise and take corrective action.
Wavelength Tracker tool is a feature used to monitor and track the protection path for a specific wavelength in an optical network. It can also be used to monitor and verify the working state of the protection path, and to detect and troubleshoot protection switch events. The Wavelength Tracker tool can be used to monitor the protection path for a specific wavelength, and it can also be used to trace the end-to-end path of a wavelength through the network. This tool is typically used by network operators to monitor and

troubleshoot wavelength-level issues in the network, such as protection switch events or wavelength-level performance issues.

Question No : 5

What is the purpose of the validate step in the EPT design process?

A. During this step, the configuration available on the involved network elements is compared with the design provided byEPT.
B. This step is used to measure optical power performances over an existing network before making changes.
C. This step is optional and is useful to verify the network element layout before going through the commission step.
D. During this step, the run design action is triggered for network design consistency check and errors fixing.

Answer: D

Explanation: The validate step in the EPT design process is used to trigger the run design action, which is responsible for verifying the consistency of the network design and fixing any errors that may exist. During the validation process, the system will compare the configuration available on the involved network elements and the design provided by EPT, and any discrepancies will be flagged for further investigation or correction.

Question No : 6

What is a degree-1 node?

A. A node with only one direction and therefore a terminal node
B. A node with only one express channel and therefore made of two sides
C. A node with only east and west sides without directions towards north and south
D. A node with one direction only and therefore used as In-Line-Amplifier (ILA)

Answer: A

Explanation: A degree-1 node is a node that only has one direction, and it is therefore a terminal node. This means that the node only has one input and one output port. It does not have any other ports to connect to other nodes or fibers. This is a common feature of some optical transport networks, such as ring networks, where a degree-1 node serves as the endpoint of the ring.

Question No : 7

What is the function of a pre-amplifier in an optical network?

A. Through the pre-amplifier, the optical signal is amplified at the receiver side after it travels along the fiber from another node.
B. Through the pre-amplifier, the optical signal is amplified at the transmitter side before it is sent to the line span.
C. Through the pre-amplifier, the optical signal is amplified both the receiver side and at the transmitter side.
D. Through the pre-amplifier, the optical signal is amplified within the node internally to recover internal losses due, for instance, to cascaded filters.

Answer: B

Explanation: A pre-amplifier is an optical amplifier that is used to boost the power of the received optical signal before it is detected by the receiver in an optical communication system. This is done to overcome the loss of power that occurs as the signal travels through the optical fiber and to ensure that the receiver can detect the signal. The pre-amplification stage is typically located close to the receiver in order to minimize the distance that the signal has to travel between the amplifier and the receiver, which helps to reduce the noise and distortion in the signal.

Question No : 8

What does it take to get connected to the NSP platform?

A. A browser and the NSP IP address; and from the landing page, the NSP application should be downloaded and launched.
B. A browser and the NSP IP address. Then, a browser plugin needs to be installed and the laptop rebooted before the NSP can be correctly reached.
C. A browser, the NSP IP address, and the credentials to access the web-based interface (WebUI).
D. The NSP package should be downloaded from the Nokia website and properly licensed for thespecific workstation to be used.

Answer: C

Explanation: To get connected to the Nokia Service Platform (NSP) platform, you need a browser and the NSP IP address. Then, you need the credentials to access the web-based interface (WebUI) for the NSP platform. Once you have these, you can access the NSP platform from a web browser.

Question No : 9

Is it possible to mix PSS-24x and PSS-8x shelves In an SWDM configuration?

A. Yes, as both can be equipped within the same node
B. No, as they are not compatible and cannot be used within the same node
C. Yes, but the PSS-24X shelf must be configured as a master
D. Yes, but the PSS-8X shelf must be configured as a master

Answer: B

Explanation: No, it is not possible to mix PSS-24x and PSS-8x shelves in an SWDM (Short Wavelength Division Multiplexing) configuration. The two shelves are not compatible, and cannot be used within the same node.

Question No : 10

What is the metro area network?

A. The metro area network is that portion of network that passes through a city to provide connections to several customers.
B. The metro area network is located between access and core domains.
C. The metro area network is made of OCS/SWDM nodes only, as no pure photonic nodes are used here.
D. The metro area network is located in between two access area networks and made of photonic nodes only (no OCS/SWDM nodes are used there).

Answer: A

Explanation: The Metro Area Network (MAN) is a telecommunications network that spans a metropolitan area and connects multiple local area networks (LANs) or business networks together. It typically covers an area that is larger than a LAN but smaller than a wide area network (WAN). The purpose of a MAN is to provide a high-bandwidth, low-latency communication infrastructure for businesses and other organizations in a metropolitan area.
Reference:

Cisco, "Metro Ethernet Services,"https://www.cisco.com/c/en/us/solutions/service-provider/metro-ethernet-services/index.html

Techopedia, "Metro Area Network (MAN),"https://www.techopedia.com/definition/26896/metro-area-network-man

Question No : 11

Which sentence about NFM-T is correct?

A. NFM-T fully supports LO, LI, L2 and GMPLS applications and it is mainly focused on 1830 PSS, as well as other older product families
B. NFM-T fully supports optical and IP nodes
C. NFM-T is used to design and manage optical network
D. NFM-T is used to provision optical services havingIP nodes as extremities

Answer: D

Explanation: NFM-T is a network management system designed to manage optical networks in a unified manner. It is used to design, manage, and provision optical services having IP nodes as extremities. It supports a variety of technologies, including optical and IP, and fully supports LO, LI, L2, and GMPLS applications. It is mainly focused on the Nokia 1830 PSS product family, as well as other older product families.

Question No : 12

With reference to trails and services, which of the following sentences is correct?

A. Trails are transported over services; that is, trails are clients with respect to services.
B. A trail can interconnect three ports, while a service always two.
C. Services are transported over trails; that is, services are clients with respect to trails.
D. A service is always associated to a single wavelength, while a trail can involve multiple wavelengths.

Answer: C

Explanation: Services are transported over trails; that is, services are clients with respect to trails. A service is a logical connection that is used to transport data from one point to another. It is created over a trail, which is a physical connection that is established by using multiple wavelengths. As such, services are clients with respect to trails, as they are transported over them.

Question No : 13

Which of the following are the main reasons for fiber attenuation?