

Nokia Optical Networking Fundamentals (exam number: 4A0-205)

The following questions will test your knowledge and prepare you for the Nokia Optical Networking Fundamentals written exam. Compare your responses with the Answer Key at the end of the document.

1. Which component characterizes a ROADM block?
 - A. A static filter
 - B. Two static filters and an interleaver
 - C. At least two amplifiers
 - D. A WR tunable circuit pack
2. Which of the following statements about a digital wrapper (DW) specified by the OTN is TRUE?
 - A. It is used to gauge the network performances in terms of 15-min and 1-day Ethernet data PMs.
 - B. It is used to encapsulate legacy types of traffic, such as ATM, FR and SDH/SONET.
 - C. It is used to encapsulate frames of data, create optical data units (ODUs), and establish one flow (wrapper) per each native protocol.
 - D. It is used to encapsulate frames of data and create optical data units (ODUs) regardless of the native protocol.
3. Is it possible to modify the FEC (Forward Error Correction) settings during a trail creation?
 - A. No, as the transponders configure a FEC type by default. Anyway, it is possible to change the FEC type afterwards
 - B. Yes, but only if coherent transponders are used for the service being created
 - C. Yes, and it can be different for each trail
 - D. Yes, but it must be the same for each trail flowing into the same line span

4. Which of the following is true about WDM amplification?
 - A. Only CWDM systems can be amplified
 - B. Only DWDM systems can be amplified, in both C and L bands
 - C. Both CWDM and DWDM systems can be amplified, in all transmission bands
 - D. Only DWDM systems can be amplified, but only in C band
5. In an optical fiber communication system, what is the DCM?
 - A. A dedicated network used for in-band node management through a Network Management System
 - B. A specific unit used to compensate the cumulative chromatic dispersion
 - C. A customer shelf with several interfaces used to interconnect several local nodes
 - D. A device used to compensate the nonlinear effects originated by long-haul spans
6. In an optical system, what is referred to as "3R" function?
 - A. 3R means Reamplification, Reshaping and Retiming
 - B. 3R means Reamplification, Retiming and Reversion
 - C. 3R means Reamplification, Retuning and Recovering
 - D. 3R means Retuning, Recalculating and Recovering
7. What is the "BoM" report available in WS-P?
 - A. A file used as input for WS-NOC Commissioning and Power Balance (CPB) application
 - B. A report that contains a list of all the inconsistent cards after a design has been validated
 - C. A file reporting all the errors and warnings discovered by WS-P during the validation phase
 - D. A report to provide the information about all the part numbers involved in the validated design
8. Where is the star network topology used the most?
 - A. Star topology is frequently used in the network core to terminate the services of multiple servers.
 - B. Star topology is frequently used in access networks.
 - C. Star topology is mostly used in metro and core networks, depending on the needs.
 - D. The metro segment collects traffic from several access sites; thus, the star topology is frequently used here.
9. Which of the following statements is correct about an ASON network?
 - A. ASON protection is based on OPS cards
 - B. ASON protection is based on SNCP switches
 - C. ASON protection is based on OPS cards and SNCP switches combined
 - D. ASON protection is based on GMPLS technology

10. How is it possible to check the reachability status of GMRE on a node?
- A. The GMRE reachability can be tested via a ping request from WS-NOC.
 - B. The Communication States tab of the node's 360° view displays the GMRE reachability status for the selected node.
 - C. The GMRE reachability status is reported in the supervision state column on the node list.
 - D. The GMRE reachability status is reflected on the color of the icon representing the node.
11. Which of the following is the most important source of optical signal attenuation in WDM systems?
- A. Fiber length
 - B. Fiber impairments, such as slight variations of the refractive index of core and cladding
 - C. High signal bit rate
 - D. High power used for transmission
12. What are the two main graphical components constituting the 1830 PSS landing page after logging in?
- A. "Equipment tree" and "Display panel"
 - B. "Wavelength Tracker" and "Alarm History"
 - C. "Performance Monitoring" and "Test Analysis"
 - D. "Fault Manager" and "Cross Connections"
13. What is the purpose of the Fault tab in the 1830 node WebUI?
- A. Generating a controlled network fault for testing purposes
 - B. Retrieving active alarms for a specific, selected item
 - C. Collecting links/interfaces affected by a fault occurred in the network (alarm correlation)
 - D. Retrieving historical alarms for a specific entity (card/interface/shelf)
14. In an 1830 PSS system, which of the following is not related to PM measurement?
- A. Optical Transmission Section (OTS)
 - B. Optical Transponder line and client interfaces
 - C. Optical Supervisory Channel (OSC)
 - D. Optical Protection System (OPS)
15. What is a Wave Keys pair in an 1830 PSS system?
- A. A unique pair of numbers encoded onto each wavelength (per direction "A to Z" or "Z to A")
 - B. A pair of wavelengths associated to each service in the network
 - C. A shared password used to extend service cryptography in a WDM network
 - D. A pair of numbers used to encrypt the end-to-end transmission

16. Which of the following WS-P "Run Design" options should be selected in order to allow incremental design, preserving the existing configuration?
- A. "Do not remove any designed element" option
 - B. "Remove all auto-designed elements" option
 - C. "Remove all user-designed and auto-designed elements" option
 - D. "Design only new components" option
17. Which of the following statements describes the difference between a FOADM and a ROADM/TOADM system?
- A. In FOADM systems, the filters can be configured through software to add and drop any lambda at any node
 - B. In FOADM systems, the filters are configured to add/drop a specific number of predetermined wavelengths
 - C. In ROADM/TOADM systems, the filters are configured to add/drop a specific number of predetermined wavelengths
 - D. In ROADM/TOADM systems, the filters can be configured through software to add and drop only coherent signals at any node
18. In the OTN hierarchy, at which level does the mapping of a client signal take place?
- A. At the Optical Transport Unit (OTU) level
 - B. At the Optical Data Unit (ODU) level
 - C. At the Optical Payload Unit (OPU) level
 - D. Depending on the bit rate of the client signals, payload mapping process takes place at OTU or ODU level
19. Which of the following statements refer to the "DDOA" functionality?
- A. DDOA is a tool used to certify the performance of new fiber optics links and detect problems with existing fiber links
 - B. DDOA is referring to the OTN hierarchy structure flow, from payload mapping to the physical layer
 - C. DDOA is the network architecture protection used to mitigate Denial of Service (DoS) attacks
 - D. DDOA is the operations flow implemented in the WS-NOC platform, consisting of several phases from design to administration tasks
20. What is the input file used by the WS-NOC CPB application for network configuration?
- A. The Commissioning file generated through the Equipment Manager (EQM) application
 - B. The Bill of Material (BoM) file generated through the WaveSuite-Planner (WS-P)
 - C. The Installation Report file generated during the design process using the WaveSuite-Planner (WS-P)
 - D. The Commissioning file generated through the WaveSuite-Planner (WS-P)

Answer Key

1. D	6. A	11. A	16. A
2. D	7. D	12. A	17. B
3. C	8. B	13. B	18. C
4. B	9. D	14. D	19. D
5. B	10. B	15. A	20. D

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Document code:SR1911039726EN (July) CID 207218