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| Exam | Huawei H31-311 Exam |
| Title | HCNA-Transmission |
| Version | 9.0 |
| Product Type | 175 Q&A with explanations |

Three CertKingdom product boxes are shown in the bottom right corner. The boxes are green and blue, with the CertKingdom logo and text. The text on the boxes includes 'Unlimited life time access pack' and '175 Q&A with explanations'.

QUESTION 1

The receive end performs BIP-8 check for the unscrambled STM-16 frame. If the BIP-8 check result XOR the value of the B1 byte contained in the following STM-16 frame is 10001100, it indicates that () bit error blocks exist in the STM-16 frame.

- A. 5
- B. 3
- C. 6
- D. Unclear

Answer: B

QUESTION 2

The EPL service exclusively uses bandwidth on the line, which is highly secure. It is applicable to the private line application of VIP customers.

- A. TRUE
- B. FALSE

Answer: A

QUESTION 3

Which of the following statements about clock sources is incorrect?

- A. Internal clock sources have the lowest priority because of their low precision.
- B. Generally, tributary clocks are not used as the clock sources of devices.
- C. The same SSM protocol is selected for all NEs in a clock protection subnet.
- D. If the standard SSM protocol is enabled, you need to set the clock source ID.

Answer: D

QUESTION 4

Which of the following operations may interrupt NE services? (Multiple Choice)

- A. Searching for protection subnets
- B. Searching for trails
- C. Deactivating trails
- D. Downloading NE data

Answer: C D

QUESTION 5

The Erbium Doped Fiber Amplifier (EDFA) is a key component of the new-generation optical communication system. Which of the following are the features of the EDFA? (Multiple Choice)

- A. High gain

- B. High output power
- C. Amplification of any wavelengths
- D. Low noise index

Answer: A B D

QUESTION 6

When the transmit end detects that the b6-b8 of the K2 byte is 110, it indicates that the () alarm is reported at the transmit end.

- A. MS-AIS
- B. R-LOS
- C. R-LOF
- D. MS-RDI

Answer: A B C

QUESTION 7

Which of the following statements about U2000 license is incorrect?

- A. Each license file corresponds to the equipment serial number (ESN) of one U2000 computer, and therefore can be used only on the corresponding computer.
- B. Formal U2000 license varies depending on operating system platforms. You must apply for a U2000 license based on the specific operating system.
- C. The U2000 license file is named in the "xxxxxxx.dat" format.
- D. Do not modify license files. Otherwise, the license files will fail.

Answer: B

QUESTION 8

The PRBS can be used to test whether an SDH service is normal and whether the protection switching function is normal.

- A. TRUE
- B. FALSE

Answer: A

QUESTION 9

The coherent receiver technology uses the local oscillator laser that has the same frequency as received signals to perform coherent processing and recovers the () information from the received signals. (Multiple Choice)

- A. Phase
- B. Frequency
- C. Polarization state
- D. Amplitude

Answer: A C D

QUESTION 10

Which of the following is not a condition for triggering multiplex section protection (MSP)?

- A. The MS-AIS signal is detected.
- B. AU-AIS is detected.
- C. R-LOS is detected.
- D. R-LOF is detected.

Answer: B

QUESTION 11

Which of the following is the meaning of "L" in the optical module parameter "L-64.2"?

- A. Transmission distance
- B. Dispersion coefficient
- C. Transmit wavelength
- D. Receive wavelength

Answer: A

QUESTION 12

Which of the following methods can be used to multiplex lower-order ODUk to higher-order ODUk?

- A. Time division multiplexing
- B. Wavelength division multiplexing
- C. Space division multiplexing
- D. Frequency division multiplexing

Answer: A

QUESTION 13

Which of the following can be the center wavelengths of the pump sources in an EDFA? (Multiple Choice)

- A. 980 nm
- B. 1510 nm
- C. 1480 nm
- D. 1310 nm

Answer: A C

QUESTION 14

Which of the following is the meaning of SFD in the Ethernet frame structure?

- A. Preamble
- B. Frame check sequence
- C. Start frame delimiter

D. Payload

Answer: C

QUESTION 15

OTM nr.m consists of a maximum of "n" optical multiplexing channels and does not support non-channel-associated overheads. The letter "r" indicates function reduction.

- A. TRUE
- B. FALSE

Answer: A

QUESTION 16

Which of the following are communication quality alarms? (Multiple Choice)

- A. Optical port loopback
- B. No login of an NE user
- C. NE communication interruption
- D. Loss of optical signals

Answer: C D

QUESTION 17

When bit errors are detected in the B2 byte, which of the following alarms is reported by the peer end?

- A. MS-AIS
- B. RS-BBE
- C. MS-FEBBE
- D. MS-BBE

Answer: C

QUESTION 18

Only one TCM can be used at a site.

- A. TRUE
- B. FALSE

Answer: B

QUESTION 19

LCK insertion has priority over AIS insertion. That is, if a user configures LCK insertion and the conditions of automatic AIS insertion are met, LCK is inserted.

- A. TRUE
- B. FALSE

Answer: A

QUESTION 20

Which of the following bridges is used to forward data based on the MAC address and VLAN ID carried in data?

- A. 802.1a
- B. 802.1d
- C. 802.1q
- D. 802.11ab

Answer: C

QUESTION 21

Which of the following is not the advantage of WDM?

- A. Ultra-large capacity and transparent data transmission
- B. Easy to upgrade and maximizing the protection for existing investments
- C. Completely substituting for SDH devices
- D. Compatible with all optical switching networks in the future

Answer: C

QUESTION 22

The error correction capability of FEC is measured with the encoding gain. Which of the following statements about the encoding gain is incorrect?

- A. When the BER is constant, the OSNR saved by the correction encoding is called encoding gain.
- B. The error correction capability of FEC increases with the encoding gain.
- C. The encoding gain of the inband FEC is larger than that of the outband FEC.
- D. The encoding gain of AFEC is larger than that of FEC.

Answer: C

QUESTION 23

In the case of 1+1 linear MSP, which of the following switching modes do not require the enabling of the APS protection protocol? (Multiple Choice)

- A. Single-ended revertive mode
- B. Single-ended non-revertive mode
- C. Dual-ended revertive mode
- D. Dual-ended non-revertive mode

Answer: A B

QUESTION 24

WDM multiplexes the optical signals at multiple rates (wavelengths) over one fiber for transmission. The digital signals

carried by these optical signals must have the same rate and data format.

- A. TRUE
- B. FALSE

Answer: B

QUESTION 25

When setting the LCAS mode, follow the following principles:

1. If devices at the two ends are both Huawei devices, set them to the "Standard Mode".
2. If a Huawei device is interconnected with a third-party device, set the interconnected devices to the same mode according to the mode supported by the third-party device.

- A. TRUE
- B. FALSE

Answer: B

QUESTION 26

Which of the following is the frame structure of STM-16?

- A. $9 \times 270 \times 1$
- B. $9 \times 270 \times 4$
- C. $9 \times 270 \times 16$
- D. $9 \times 270 \times 64$

Answer: C

QUESTION 27

A MAC address consists bits and is globally unique. Which of the following is the meaning of the MAC address whose eighth bit is 1?

- A. Unicast address
- B. Bicast address
- C. Multicast address
- D. Broadcast address

Answer: C

QUESTION 28

For an OSN 3500, which of the following boards provides the centralized backup function for the +3.3 V power supply of each board in the subrack?

- A. PIU
- B. AUX
- C. COA
- D. SCC

Answer: B

QUESTION 29

TU-AIS is frequently encountered during network maintenance. Which of the following alarms can trigger the TU-AIS alarm? (Multiple Choice)

- A. AU-LOP
- B. R-LOS
- C. HP-TIM
- D. B2-EXC

Answer: A B C D

QUESTION 30

Which of the following is the function of TCM overheads in ODUk signals?

- A. Channel supervisory overhead
- B. Path trace identifier overhead
- C. Tandem connection monitoring overhead
- D. General communication channel overhead

Answer: C

QUESTION 31

Outband networking requires higher costs than inband networking, but provides more reliable management channels.

- A. TRUE
- B. FALSE

Answer: A

QUESTION 32

Compared with a dense wavelength division multiplexing (DWDM) system, a coarse wavelength division multiplexing (CWDM) system provides a certain number of wavelengths and a transmission distance within () km, which greatly reduces system cost and has strong flexibility.

- A. 50
- B. 100
- C. 200
- D. 20

Answer: B

QUESTION 33

SES: There are 5% or more than 5% bit error blocks or at least one defect (OCI/AIS/LCKAAE/LTCA1M/PLM) within one second.

- A. TRUE
- B. FALSE

Answer: B

QUESTION 34

For 100G (112 Gbit/s) signals, the actual data baud rate is only 28G baud.

- A. TRUE
- B. FALSE

Answer: A

QUESTION 35

Which of the following statements about an MSP ring are correct? (Multiple Choice)

- A. The number of nodes on an MSP ring cannot exceed 16.
- B. When creating a protection subnet, select SDH NEs only. Do not select REG or WDM NEs.
- C. When multiple protection subnets occupy the same port on the same board, you must select "Resource Sharing".
- D. "Assigned by VC4" means that different VC4s are assigned to different protection subnets to achieve MSP only in some channels.

Answer: A B C D

QUESTION 36

Which of the following effects is used by the Raman amplifier?

- A. Self-phase modulation (SPM)
- B. Dispersion
- C. Raman scattering
- D. Four-wave mixing (FWM)

Answer: C

QUESTION 37

The clock unit can access an external clock source as the timing signal source of the system only through the external clock interface. In addition, it can output the processed clock and provide the clock source for other devices that require timing.

- A. TRUE
- B. FALSE

Answer: B

QUESTION 38

Which of the following is the multiplexing mode of SDH?

- A. Flexible mapping
- B. Asynchronous multiplexing
- C. Flexible mapping and asynchronous multiplexing
- D. Flexible mapping and synchronous multiplexing

Answer: D

QUESTION 39

Which of the following statements about the optical-layer interfaces OTM-n.m and OTM-nr.m of OTN is incorrect?

- A. n indicates the number of wavelengths carried by the maximum capacity.
- B. m indicates the rate. The value can be 1, 2, or 3.
- C. r indicates OTM without the OSC function.
- D. OTM-nr.m with OSC signals is OTM-n.m.

Answer: B

QUESTION 40

The frame structure of ODU4 is four times that of ODU1.

- A. TRUE
- B. FALSE

Answer: B

QUESTION 41

The 1310 nm and 1550 nm transmission windows are low-loss windows. In DWDM systems, only the 1550 nm transmission window is used. Which of the following is the major cause?

- A. The working wavelength flatness area of the EDFA is included in this window.
- B. The non-linear effect of the 1550 nm wavelength area is small.
- C. The 1550 nm wavelength area is applicable to long-haul transmission.
- D. None of the above

Answer: A

QUESTION 42

When the LCAS function is used/ which of the following overhead bytes are used to transmit control information? (Multiple Choice)

- A. M1
- B. H4
- C. K2
- D. K4

Answer: B D

QUESTION 43

The pointer is used for alignment and indicates the start position of VC-n in the corresponding AU or TU frame. In this way, the receive end can correctly remove the corresponding VC from the STM-N, and then split the VC and C encapsulation to separate low-rate signals, such as PDH. That is, low-rate tributary signals can be directly dropped from the STM-N signal.

- A. TRUE
- B. FALSE

Answer: A

QUESTION 44

Which of the following statements about the MST functional module are correct? (Multiple Choice)

- A. The MST is both the source and sink of the MS.
- B. The MST implements the BIP-8 statistics calculation of the B2 byte.
- C. The MST returns bit error information, but not the specific number of bit errors.
- D. The MST provides the E2 orderwire channel.

Answer: A D

QUESTION 45

Which of the following can be configured as the monitoring time of NE performance events?

- A. Later than the current time
- B. Same as the current time of the NE
- C. Earlier than the current time
- D. Any time

Answer: A

QUESTION 46

The rates of the SF64 and SL64 boards are both STM-64. Therefore, the two boards can be interconnected.

- A. TRUE
- B. FALSE

Answer: B

QUESTION 47

According to ITU-T recommendations, the requirement that the MSP switching time should be within 50 ms is conditional. For example, the number of NEs on an entire ring network is less than 16.

- A. TRUE
- B. FALSE

Answer: B

QUESTION 48

OChr means that the electrical supervisory technology is used.

- A. TRUE
- B. FALSE

Answer: A

QUESTION 49

The device IP addresses of the gateway NE and non-gateway NEs must be set in the same network segment.

- A. TRUE
- B. FALSE

Answer: B

QUESTION 50

The frame period of OTN signals is fixed, which is the same as that of SDH signals.

- A. TRUE
- B. FALSE

Answer: B

QUESTION 51

By default, the B2-EXC alarm is reported when the number of B2 bit errors exceeds the () threshold. A. 0.000000001

- B. 0.00001
- C. 0.001
- D. 0.01

Answer: C

QUESTION 52

Which of the following are the device-level protection schemes of SDH products? (Multiple Choice)

- A. Power supply protection
- B. Cross-connect and timing board protection
- C. System control board protection
- D. TPS protection

Answer: A B C D

QUESTION 53

When a fiber cut test is performed on a normal MSP ring, which of the following alarms is reported? (Multiple Choice)

- A. TU-AIS

- B. R-LOS
- C. APSJNDI
- D. BD STATUS

Answer: B C

QUESTION 54

Which of the following statements about the 1+1 protection of cross-connect boards are correct? (Multiple Choice)

- A. The source service board sends services to the active and standby cross-connect boards.
- B. After service cross-connections are completed, the active and standby cross-connect boards send the data of the active cross-connect board to the sink service board.
- C. The sink service board can receive only the data from the active cross-connect board.
- D. The buses of the two cross-connect modules work independently and do not interfere with each other.
- E. The dual-bus system structure indicates that the service board performs dual feeding of data to the cross-connect side and selective receiving of the data on the cross-connect side.
- F. Two cross-connect boards have the same configuration. Service boards will selectively receive services from one of them based on the quality of services and status of cross-connect boards.

Answer: A D E F

QUESTION 55

Which of the following statements about extended ECC is incorrect?

- A. Extended ECC is classified into automatic extended ECC and extended ECC in specified mode.
- B. Automatic extended ECC indicates using a straight-through cable to connect the Ethernet ports of two NEs.
- C. Extended ECC in specified mode indicates that the server and client need to be specified.
- D. Automatic extended ECC can be enabled on a maximum of four NEs. In manual extended ECC mode, each server can be connected to a maximum of three clients.

Answer: D

QUESTION 56

For the OSN 3500, there is a slot mapping relationship between processing boards and interface boards. The processing board in slot 1 maps to the interface board in slot 19-20.

- A. TRUE
- B. FALSE

Answer: B

QUESTION 57

On the OSN series transport devices, Ethernet ports cannot access tagged frames and untagged frames at the same time,

- A. TRUE
- B. FALSE

Answer: B

QUESTION 58

Forced switching, fiber cut switching, manual switching, and exercise switching are in the descending order of priority.

- A. TRUE
- B. FALSE

Answer: A

QUESTION 59

If a network port that supports auto-negotiation is connected to a network port that does not support auto-negotiation, the half-duplex and full-duplex modes may be interconnected.

- A. TRUE
- B. FALSE

Answer: A

QUESTION 60

Which of the following statements about the EFS4 board are correct? (Multiple Choice)

- A. This board has four FE ports.
- B. This board supports Layer-2 switching.
- C. This board must be used together with a processing board.
- D. The board interface an LC interface.

Answer: A B

QUESTION 61

The management scope of an OMSn is the path from the input optical port on a multiplexer unit at the transmit site to the output optical port on a demultiplexer unit at the receive site, which is called an optical multiplexing section (OMS) path.

- A. TRUE
- B. FALSE

Answer: A

QUESTION 62

Which of the following bytes can be used for the orderwire phone between two REG devices?

- A. E1
- B. E2
- C. E1 and E2
- D. None of the above

Answer: A

QUESTION 63

MAC loopback and PHY loopback are used for fault locating. When the MAC loopback is set to an inloop, you can set the PHY loopback according to the actual situation.

- A. TRUE
- B. FALSE

Answer: B

QUESTION 64

After the U2000 delivers configuration data to an NE, if the verification fails on the SCC board, the NE enters the installation state.

- A. TRUE
- B. FALSE

Answer: A

QUESTION 65

In the case of SNCP, a line board selectively receives services. Therefore, the SNCP can protect the services on the line.

- A. TRUE
- B. FALSE

Answer: B

QUESTION 66

Which of the following are the main advantages of SDH?
(Multiple Choice)

- A. Standard interfaces
- B. Synchronous multiplexing
- C. Powerful OAM
- D. High compatibility

Answer: A B C D

QUESTION 67

The fiber core refractive index n_1 must be () the cladding layer refractive index n_2 , which is a necessary condition for transmitting optical signals in optical fibers.

- A. higher than
- B. lower than
- C. equal to

Answer: A

QUESTION 68

On the NMS, the NE performance monitoring time is set to () minutes and () hours,

- A. 15, 12
- B. 15, 24
- C. 30, 12
- D. 30, 24

Answer: B

QUESTION 69

When the lower-order resources of a device are insufficient, which of the following measures can be taken? (Multiple Choice)

- A. Configure a VC4 server trail.
- B. Combine available lower-order resources.
- C. Use a cross-connect board with a larger lower-order cross-connect capacity.
- D. Configure VC4 services.

Answer: B C D

QUESTION 70

Which of the following alarms does not trigger the AU-AIS alarm?

- A. R-LOS
- B. MS-AIS
- C. AU-LOP
- D. B2-EXC

Answer: C

QUESTION 71

Configuring an EPLAN service as a ring is not recommended. If the EPLAN service is configured as a ring, the STP protocol must be enabled on the network to prevent broadcast storms.

- A. TRUE
- B. FALSE

Answer: A

QUESTION 72

Which of the following is not a non-linear effect?

- A. Self-phase modulation (SPM)

- B. Dispersion
- C. Raman scattering
- D. Four-wave mixing (FWM)

Answer: B

QUESTION 73

When synchronization is performed on the 1U2000, the NE data that is the same as that on the U2000 is not uploaded to the U2000, and the data that exists on the U2000 but not on the NE is deleted.

- A. TRUE
- B. FALSE

Answer: B

QUESTION 74

Which of the following are VLAN classification methods? (Multiple Choice)

- A. By MAC address
- B. By port
- C. By subnet
- D. By protocol

Answer: A B C D

QUESTION 75

Which of the following are the differences between AU pointer and TU pointer? (Multiple Choice)

- A. Indication range
- B. Number of bits occupied by the pointer value
- C. Byte where the pointer value is stored
- D. Adjustment unit

Answer: A C D

QUESTION 76

Which of the following is not an EVPLAN feature?

- A. Bandwidth sharing
- B. Forwarding based on MAC addresses
- C. Point-to-point and point-to-multipoint topologies
- D. Multipoint-to-multipoint topology

Answer: C

QUESTION 77

RSOH, MSOH, HPOH, and LPOH implement monitoring functions in the descending order of monitoring scope.

- A. TRUE
- B. FALSE

Answer: A

QUESTION 78

Which of the following bytes in the regenerator section overhead are associated with R-OOF and R-LOF?
(Multiple Choice)

- A. A1
- B. A2
- C. B1
- D. B2

Answer: A B

QUESTION 79

Which of the following maintenance signals is transmitted from a downstream site to an upstream site in OTN?

- A. ATS
- B. LCK
- C. IAE
- D. BDI

Answer: D

QUESTION 80

An Ethernet private line service is set up between HI (HQ) and H2 (branch) of enterprise H, and five VC-12s are bound in the corresponding VCTRUNK. When one VC-12 fails, the Ethernet private line between HI and H2 is not interrupted. Therefore, which of the following statements is correct?

- A. The LCAS function is enabled on the ports used by the Ethernet private line service between HI and H2.
- B. The LCAS function is enabled on the VCTRUNK ports used by the Ethernet private line service between HI and H2.
- C. The QinQ function is enabled on the ports used by the Ethernet private line service between HI and H2.
- D. The QinQ function is enabled on the VCTRUNK ports used by the Ethernet private line service between HI and H2.

Answer: B

QUESTION 81

When an optical fiber between node A and node B is broken, the FIU on node B detects the OTS_LOS alarm and inserts the OTS_BDI alarm to node A. The FIU on node A reports the OTS_BDI alarm. The line board on the downstream C node reports the OCh_SSF alarm.

- A. TRUE
- B. FALSE

Answer: A

QUESTION 82

In an OSN 550, the CXL slot houses a functional board that integrates the system control and communication (SCC) unit, cross-connect unit, and clock unit. The functional board is available in multiple types depending on the functions and access capabilities provided by the OSN 550.

- A. TRUE
- B. FALSE

Answer: A

QUESTION 83

Which of the following is the impact of changing the NE ID of OSN 3500 on the NMS?

- A. Services are interrupted.
- B. The device is restarted.
- C. NE communication is interrupted.
- D. The NE time is not synchronized.

Answer: C

QUESTION 84

When the U2000 data is backed up using scripts, the backup is fast because the backup files are small.

- A. TRUE
- B. FALSE

Answer: B

QUESTION 85

When a working PQ1 board is faulty, the device performs TPS protection switching. Which of the following statements about the switching process are correct? (Multiple Choice)

- A. The cross-connect board detects that the PQ1 board is faulty through the board status bus.
- B. If the protection PQ1 board is normal, the cross-connect board sends a switching message to the D75S corresponding to the faulty PQ1 board through the switching control bus.
- C. The D75S board responds to the switching message by transferring services to the shared protection bus and stopping sending services to the faulty PQ1 board.
- D. The protection PQ1 board receives and processes the services that are transferred from the D75S board to the protection bus to complete the protection switching.

Answer: A B C D

QUESTION 86

The STM-64 has () AU pointers.

- A. 64
- B. 1
- C. 4
- D. 16

Answer: A

QUESTION 87

Which of the following logical functional modules are involved in processing clock signal? (Multiple Choice)

- A. SPI
- B. RST
- C. MCF
- D. SETS

Answer: A D

QUESTION 88

The U2000 can be flexibly interconnected with different third-party NMSs through northbound interfaces (NBIs), and provides information about physical inventory and alarms to the upper-layer NMSs.

- A. TRUE
- B. FALSE

Answer: A

QUESTION 89

The single-fiber bidirectional WDM system uses only one optical fiber to transmit optical signals in two directions at the same time. The optical signals in the two directions should be arranged at different wavelengths.

- A. TRUE
- B. FALSE

Answer: A

QUESTION 90

The working mode of a port determines the flow control mode of the port. When the working mode is 100 Mbit/s full duplex, which of the following flow control modes can be used?

- A. Auto-negotiation flow control mode
- B. Non-auto-negotiation flow control mode
- C. Both of the above
- D. None of the above

Answer: B

QUESTION 91

The SL64 board can be used in an OSN 2500.

- A. TRUE
- B. FALSE

Answer: B

QUESTION 92

Which of the following is not the northbound interface provided by the U2000?

- A. XML
- B. SNMP
- C. CORBA
- D. Qx

Answer: D

QUESTION 93

In the SDH optical synchronous transmission system, which of the following bytes is used to transmit the quality and usage information of clock sources?

- A. G1
- B. S1
- C. N1
- D. M1

Answer: B

QUESTION 94

The K1 and K2 bytes can transmit APS switching signaling, and can also indicate that the multiplex section signal fails.

- A. TRUE
- B. FALSE

Answer: A

QUESTION 95

When the SXCS board is configured for an OSN 3500, which of the following is the access capacity of the subrack in full configuration?

- A. 35G
- B. 58.75G
- C. 80G
- D. 155G

Answer: D

QUESTION 96

Optical fiber loss includes the bending loss, absorption loss, and scattering loss.

- A. TRUE
- B. FALSE

Answer: B

QUESTION 97

In the 2.5G MSP ring consisting of four MSTP sites, when a protection switching occurs, which of the following statements about the alarm reporting is correct?

- A. The PS alarm is reported on the tributary board.
- B. The APS-INDI alarm is reported on the XCS board.
- C. The APS-INDI alarm is reported on the system control board.
- D. The APS-INDI alarm is reported on the line board.

Answer: B

QUESTION 98

In the frame structure of SDH signals, there are abundant overhead bytes used for operation, administration, and maintenance (OAM). The overhead bytes account for () of all bits in the entire frame and greatly enhance the monitoring functions of the network.

- A. 1/10
- B. 1/20
- C. 1/30
- D. 1/40

Answer: B

QUESTION 99

Which of the following are the service board types of MSTP devices? (Multiple Choice)

- A. Interface board
- B. Service processing board
- C. Service processing board with interfaces
- D. Auxiliary board

Answer: A B C

QUESTION 100

Which of the following overheads is not an ODUk overhead?

- A. PM
- B. TCM

- C. NJO
- D. APS/PCC

Answer: C

QUESTION 101

Which of the following are optical-layer trails? (Multiple Choice)

- A. OCH
- B. OMS
- C. OTS
- D. OSC

Answer: A B C D

QUESTION 102

In the Windows operating system, the log files of the U2000 program are stored in the () directory of the U2000 installation drive.

- A. /U2000/server
- B. /U2000/client/log
- C. /U2000/server/log
- D. /U2000/client

Answer: C

QUESTION 103

Which of the following are the electrical-layer overheads of OTN? (Multiple Choice)

- A. OPUk
- B. ODUk
- C. OCh
- D. OTUk

Answer: A B D

QUESTION 104

Which of the following statements about the signal label byte C2 is incorrect?

- A. The C2 byte is used to indicate the multiplexing structure of the VC frames and the payload property.
- B. The C2 byte to be sent must match the C2 byte to be received.
- C. If the C2 byte mismatch is detected, an LP_SLM alarm is reported in the corresponding VC-4 channel.
- D. C2=00H indicates that the VC-4 is unequipped.

Answer: C

QUESTION 105

PDM uses the polarization beam splitter to divide the laser into two perpendicular directions: x and y.

- A. TRUE
- B. FALSE

Answer: A

QUESTION 106

For the (local) HA solution where the active and standby servers are deployed in the same place, which of the following platforms can be deployed? (Multiple Choice)

- A. Windows
- B. Solaris
- C. SUSE Linux
- D. All of the above

Answer: B C

QUESTION 107

In a WDM system, using a dielectric thin film filter (TFF) is ideal when fewer than () wavelengths are used.

- A. 4
- B. 8
- C. 16
- D. 20

Answer: C

QUESTION 108

Which of the following is the default WTR time for MSP switching?

- A. 6 minutes
- B. 10 minutes
- C. 12 minutes
- D. 15 minutes

Answer: B

QUESTION 109

An unprotected chain consists of four NEs: NE1, NE2, NE3, and NE4. An end-to-end VC4 trail NE1—NE4 is created, and NE5 is added between NE2 and NE3 for capacity expansion. The original configuration remains unchanged, and no service is configured on NE5. In this case, the unprotected chain becomes NE1-NE2-NE5-NE3-NE4, and how many VC4 trails can be searched out?

- A. 0
- B. 1

- C. 2
- D. 3

Answer: C

QUESTION 110

NE A and NE B are adjacent NEs. If B3 and lower-order bit errors occur in the A->B direction and B1, B2, B3, and lower-order bit errors occur in the B->A direction, which of the following performance events are reported by NE A? (Multiple Choice)

- A. RSBBE
- B. RSFEBBE
- C. MSBBE
- D. MSFEBBE
- E. HPBBE
- F. HPFEBBE

Answer: A C E F

QUESTION 111

When the rate of an SNCP ring consisting of four OptiX OSN 2500 devices is 2.5 Gbit/s, the service capacity of this network can carry a maximum number of () 2 Mbit/s signals.

- A. 504
- B. 1008
- C. 2016
- D. 4032

Answer: B

QUESTION 112

Which of the following clock working modes support the ITU-T G.781 standard? (Multiple Choice)

- A. Tracing
- B. Holdover
- C. Free-run
- D. Master/Slave

Answer: A B C

QUESTION 113

On a Layer 2 switching device, if the Ethernet port is an Access port, the port can receive only the Ethernet frames without VLAN tags or Ethernet frames with the same VLAN ID as the default VLAN ID of the port.

- A. TRUE
- B. FALSE

Answer: B

QUESTION 114

Assume that 2 x VC-12 timeslots need to be bound with VCTRUNK1 of the N2EFS4 board. When 8 x VC-4 timeslots are available on the N2EFS4 board, which of the following timeslots meets the requirements?

- A. VC-12 timeslots 1 and 2 of the first VC-4
- B. VC-12 timeslots 33 and 34 of the second
- C. VC-4 VC-12 timeslots 1 and 2 of the fourth
- D. VC-4 VC-12 timeslots 1 and 2 of the eighth VC-4

Answer: C

QUESTION 115

If the overhead bytes pass through the backplane bus between two slots, the two slots are called paired slots. Paired slots implement automatic transparent transmission of overhead bytes, such as (),(), and (). This improves MSP switching performance and protects DCC communication with other NEs even if the SCC board on the local NE is offline. (Multiple Choice)

- A. K byte
- B. D byte
- C. E1 byte
- D. B1 byte

Answer: A B C

QUESTION 116

Which of the following are the steps for multiplexing low-speed services into high-speed SDH services? (Multiple Choice)

- A. Mapping
- B. Overhead insertion
- C. Alignment
- D. Multiplexing

Answer: A C D

QUESTION 117

Which of the following communication protocols are used for DCN management on Huawei devices? (Multiple Choice)

- A. HWECC
- B. TCP/IP
- C. PTP
- D. OSI

Answer: A B D

QUESTION 118

In the case of MSP, you need to set the MSP protocol ID of each NE. To ensure that each ID is unique, you are advised to set the MSP protocol ID to the same value as the NE ID.

- A. TRUE
- B. FALSE

Answer: B

QUESTION 119

Linear MSP (LMSP) has two modes; 1+1 and 1:1. Extra services can be configured for the protection channel only in the 1:1 mode of LMSP.

- A. TRUE
- B. FALSE

Answer: A

QUESTION 120

Which of the following technologies is the main difference between an open DWDM system and an integrated DWDM system?

- A. Wavelength conversion technology
- B. Optical amplification technology
- C. Multiplexing/Demultiplexing technology
- D. Optical supervisory technology

Answer: A

QUESTION 121

A PAUSE frame uses a reserved multicast address and is not forwarded by a bridge or switch, In this way, the PAUSE frame does not generate any additional information.

- A. TRUE
- B. FALSE

Answer: A

QUESTION 122

Which of the following is the frame whose VC-4 J1 byte is indicated by the current frame's AU pointer?

- A. Current frame
- B. Next frame
- C. Previous frame

D. None of the above

Answer: B

QUESTION 123

When the J1 byte mismatch occurs, the () alarm is reported and services may be interrupted. A. RS_TIM
B. LP_TIM
C. HP_TIM
D. HP_SLM

Answer: C

QUESTION 124

After PDH services are configured on a per-NE basis, a complete trail cannot be searched out. Which of the following are possible causes? (Multiple Choice)

- A. Tributary board selection is incorrect.
- B. Line board selection is incorrect.
- C. Timeslot configuration is incorrect.
- D. Pass-through is not configured at intermediate sites.

Answer: B C D

QUESTION 125

Which of the following alarm/event dumping modes are supported by the U2000? (Multiple Choice)

- A. Manual dumping
- B. Automatic dumping
- C. Overflow dumping
- D. Periodic dumping of alarm logs

Answer: A C D

QUESTION 126

Which of the following is the functional unit that provides high-speed signal interfaces and processes corresponding signals?

- A. Cross-connect unit
- B. Auxiliary unit
- C. Tributary unit
- D. Line unit

Answer: D

QUESTION 127

During service configuration, there are two timeslot modes. Huawei uses the interleaved timeslot mode by default.

- A. TRUE
- B. FALSE

Answer: B

QUESTION 128

The number of ODU2e signals multiplexed into an ODU3 signal is the same as that of ODU2 signals multiplexed into an ODU3 signal.

- A. TRUE
- B. FALSE

Answer: B

QUESTION 129

The section overhead of STM-4 is () bytes/frame.

- A. $9 \times 9 \times 4$
- B. $9 \times 8 \times 4$
- C. $9 \times 9 \times 8$
- D. 9×8

Answer: B

QUESTION 130

Which of the following device domains can be managed by the U2000? (Multiple Choice)

- A. Transport device
- B. Wireless device
- C. Data communication device
- D. Access device

Answer: A B C D

QUESTION 131

Which of the following statements about overhead bytes is incorrect?

- A. A1 and A2 are framing bytes. These bytes are used to separate STM-1 frames in a signal flow.
- B. J0 is a regenerator section trace byte. This byte is used to repeatedly transmit a section access point identifier, so that the receive end can verify its continuous connection to the specified transmit end.
- C. B1 is bit interleaved parity-8 (BIP-8). This byte is used to monitor bit errors at the regenerator section layer.
- D. E1 and E2 are orderwire bytes. These bytes are used to provide a voice channel for orderwire connections.

Answer: A

QUESTION 132

According to the formula of "ODUk rate = $239/(239-k) \times \text{STM-N frame rate}$ ", the ODU4 rate is equal to $239/235 \times$

STM-N frame rate.

- A. TRUE
- B. FALSE

Answer: B

QUESTION 133

The SNCP switching speed can be improved if you classify the SNCP services that have the same source, sink, or route into groups.

- A. TRUE
- B. FALSE

Answer: A

QUESTION 134

The backplane has two -48 V power supply cables, and each board obtains two -48 V power supplies from the backplane. After the power supplies are combined by diodes, various voltages required by each component are obtained through the DC/DC power module and linear conversion.

- A. TRUE
- B. FALSE

Answer: A

QUESTION 135

When the ACT indicator of an SDH board is off, it indicates that this board has a hardware fault and cannot be used,

- A. TRUE
- B. FALSE

Answer: B

QUESTION 136

Which of the following factors determines that the optical signal-to-noise ratio (OSNR) at the receive end decreases to a certain extent After signals are transmitted for a certain distance in a WDM system, the optical signal-to-noise ratio (OSNR) at the receive end decreases to a certain extent. Which of the following is the main cause?

- A. EDFAs are used.
- B. Multiplexers and demultiplexers are used.
- C. New types of optical fibers are not used.
- D. Fiber attenuation is excessively high.

Answer: A

QUESTION 137

The last 256 columns in the OTN frame structure are FEC areas, which are used for forward error correction.

- A. TRUE
- B. FALSE

Answer: A

QUESTION 138

Automatic laser shutdown (ALS); When no optical signal is received, the ALS function automatically shuts down the corresponding optical module. This function protects onsite maintenance personnel.

- A. TRUE
- B. FALSE

Answer: A

QUESTION 139

When severely errored seconds (SEs) are present in the PM section at the ODUk layer, which of the following alarms is reported on the NMS?

- A. ODUk_PM_ES
- B. ODUk_PM_SES
- C. ODUk_PM_SESR
- D. ODUk_PM_UAS

Answer: B

QUESTION 140

An optical amplifier unit compensates for line loss and extends transmission distance. Connecting multiple optical amplifier units in cascading mode can infinitely extend transmission distance of a system.

- A. TRUE
- B. FALSE

Answer: B

QUESTION 141

The TAG attribute cannot be set for the internal port VCTRUNK of the board on the NMS.

- A. TRUE
- B. FALSE

Answer: B

QUESTION 142

The standard Ethernet frame length should not be less than 64 bytes. Which of the following factors cause this limitation? (Multiple Choice)

- A. Minimum transmission distance
- B. Maximum transmission distance
- C. Working mechanism of conflict detection
- D. MAC address

Answer: B C

QUESTION 143

SDH signals must be scrambled before being transmitted over optical fibers. Which of the following bytes are not scrambled? (Multiple Choice)

- A. A1
- B. A2
- C. J0
- D. J1

Answer: A B C

QUESTION 144

When LMSP is configured, there are two switching modes: single-ended switching and dual-ended switching. The protection protocol does not need to be enabled for single-ended switching.

- A. TRUE
- B. FALSE

Answer: A

QUESTION 145

Some of the SNCP protection switching conditions are default, such as AU-AIS and TU-AIS. Others conditions are optional, such as HP-TIM and HP-SLM. The optional conditions can be flexibly set based on service levels.

- A. TRUE
- B. FALSE

Answer: A

QUESTION 146

MSP is a network-level protection scheme. The MSP does not directly protect a service, and the MSP switching and restoration are not affected even if there is no service on the MSP ring.

- A. TRUE
- B. FALSE

Answer: A

QUESTION 147

Which of the following is the basic requirement of a DWDM system on a light source?

- A. The output wavelength is stable.
- B. The direct modulation method is used.
- C. The dispersion tolerance is low.
- D. The transmit power is high.

Answer: A

QUESTION 148

The interval between two adjacent pointer justification events is at least () frames.

- A. 5
- B. 4
- C. 3
- D. 2

Answer: C

QUESTION 149

In MSP networking, when optical fibers are connected between sites, the east optical board of a site is connected to the west optical board of the downstream site, and these sites are connected in sequence to form a ring. In this case, the direction from the east optical board of a site to the west optical board of the downstream site is the major ring direction, and the direction that the ring is formed is the service direction.

- A. TRUE
- B. FALSE

Answer: B

QUESTION 150

Which of the following working windows is indicated by "2" in the optical module parameter L-64.2"?

- A. 880 nm
- B. 1310 nm
- C. 1550 nm
- D. 1510 nm

Answer: C

QUESTION 151

Which of the following statements about the multiplex section remote error indication (MS-REI) is correct?

1. The B2 byte indicates the transmission channel.
2. The MI byte indicates the transmission channel.
3. MS-REI is transmitted from the sink to the source.
4. MS-REI is transmitted from the source to the sink.
5. Indicates the number of detected bit errors after the sink receives the MS signals.

- A. 1 , 4 , 5
- B. 2 , 4 , 5
- C. 1 , 3 , 5
- D. 2 , 3 , 5

Answer: D

QUESTION 152

Which of the following statements about the sequence of a signal flow between the SDH interface and the cross-connect unit is correct?

- A. SPI< >RST< >MST< >MSP< >MSA< >HFT
- B. SPI< >RST< >MSA< >MSP< >MST< >HFT
- C. SPI< >MST< >RST< >MSA< >MSP< >HFT
- D. SPT< >MST< >MSA< >RST< >MSP< >HPT

Answer: A

QUESTION 153

Frame-Mapped GFP (GFP-F) is a processing mode oriented to data coding blocks (such as Fiber Channel and ESCON).

- A. TRUE
- B. FALSE

Answer: B

QUESTION 154

Which of the following are basic functions of the U2000? (Multiple Choice)

- A. Security management
- B. Topology management
- C. Alarm management
- D. Performance management

Answer: A B C D

QUESTION 155

The difference between a dispersion compensation fiber and a common fiber is that the dispersion compensation fiber has a negative dispersion coefficient at ().

- A. 1310 nm
- B. 1550 nm
- C. 800 nm
- D. 1650 nm

Answer: B

QUESTION 156

Which of the following statements about OTN advantages is incorrect?

- A. The WDM function is used to meet the requirement for Tbit/s bandwidth per fiber.
- B. OTN provides a maximum of five levels of nested or overlapped TCM connection monitoring.
- C. OTN provides powerful outband FEC functions to effectively guarantee the line transmission performance.
- D. OTN provides 2.7 Gbit/s, 10.7 Gbit/s, 43 Gbit/s, and even 111.8 Gbit/s high-rate interfaces.

Answer: B

QUESTION 157

Which of the following service levels cannot be selected during service configuration?

- A. VC12
- B. VC8
- C. VC4
- D. VC3

Answer: B

QUESTION 158

Which of following are the configuration modes of new NEs? (Multiple Choice)

- A. Manual configuration
- B. Uploading
- C. Downloading
- D. Copying NE data

Answer: A B D

QUESTION 159

In ITU-T G.692 recommendations, the allowed channel frequency is based on the reference frequency () and the channel spacing can be 100 GHz, 50 GHz, or 25 GHz.

- A. 192.1 THz
- B. 193.1 THz
- C. 194.1 THz
- D. 196.1 THz

Answer: B

QUESTION 160

The STAT indicator of an SDH board is blinking red, on for 100 ms and off for 100 ms. Which of the following is the meaning of the indicator status?

- A. Hardware mismatch
- B. Hardware fault

- C. Normal operating
- D. No power supply input

Answer: A

QUESTION 161

An arrayed waveguide grating (AWG) multiplexer/demultiplexer has the following advantages: short wavelength spacing, large number of channels, and flat passband. It suits DWDM systems with ultra-high speed and large capacity.

- A. TRUE
- B. FALSE

Answer: A

QUESTION 162

The SP3D board supports 63 EI services.

- A. TRUE
- B. FALSE

Answer: B

QUESTION 163

Which of the following ITU-T recommendations defines the OTN frame structure?

- A. G.694
- B. G.652
- C. G.975
- D. G.709

Answer: D

QUESTION 164

The number of bit error blocks on each VC-4 channel is detected by B3 at the receive end. At the same time, the information is sent back to the transmit end through (), and HP-REI and HP-FEBBE are reported at the transmit end.

- A. K3 (b1-b4)
- B. G1 (b5-b8)
- C. G1 (b1-b4)
- D. J (b1-b4)

Answer: C

QUESTION 165

EPL services exclusively use ports and bandwidths, and different users may need to share resources. Which of the following methods can be used to isolate user data?

- A. VLANID
- B. MPLS label
- C. QinQ technology
- D. All of the above

Answer: D

QUESTION 166

Which of the following layers defines the protocols that control the network layer? The protocols of the layer work on logical links, that is end-to-end connections between two devices.

- A. Network layer
- B. Data link layer
- C. Transport layer
- D. Application layer

Answer: C

QUESTION 167

The value of the MFAS byte increases with the sequence number of the OTUk/ODUk base frame, and a maximum of () base frames are included.

- A. 64
- B. 128
- C. 256
- D. 512

Answer: C

QUESTION 168

When multiple users need to share the same VCTRUNK and use the same VLAN ID, the QinQ technology can be used.

- A. TRUE
- B. FALSE

Answer: A

QUESTION 169

Optical supervisory channels are intended for the supervisory of WDM optical transmission systems. In ITU-T recommendations, 1510 nm wavelengths at a () rate are preferentially used.

- A. 64 kbit/s
- B. 192 kbit/s
- C. 2Mbit/s
- D. 576 kbit/s

Answer: C

QUESTION 170

A two-fiber ring topology consisting of three NEs is arranged in the counterclockwise sequence as A, B, and C. Services between A and C occupy the 48th VC-12 timeslot in the first VC-4 on the short path, and services between B and C also occupy the 48th VC-12 timeslot in the first VC-4 on the short path. In this case, which of the following is the subnet type of the ring protection?

- A. Unidirectional path protection ring
- B. SNCP ring
- C. Bidirectional MSP ring r
- D. All of the above

Answer: C

QUESTION 171

Manual configuration will clear data on the NE side.

- A. TRUE
- B. FALSE

Answer: A

QUESTION 172

When a bridge uses the IVL learning mode, the entry in the MAC address table is created according to the source MAC address and source port of the data frame. This entry is valid for all VLANs.

- A. TRUE
- B. FALSE

Answer: B

QUESTION 173

Which of the following is the maximum number of OSN 3500 subracks that can be installed in a 2.2 m cabinet?

- A. 1
- B. 2
- C. 3
- D. 4

Answer: B

QUESTION 174

Both PDH and SDH have globally unified standards.

- A. TRUE
- B. FALSE

Answer: B

QUESTION 175

A 1510 nm optical supervisory channel can be effectively amplified after it passes an EDFA.

- A. TRUE
- B. FALSE

Answer: B