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Practice Exam Questions for: Nokia Services Architecture (exam number: 4A0-104)

The following questions will test your knowledge and prepare you for Nokia Services Architecture Exam. Compare your responses with the Answer Key at the end of the document.

- 1. Which of the following services provides a Layer 2 multipoint-to-multipoint VPN service?
 - a. VPWS
 - b. VPLS
 - c. VPRN
 - d. IES
- 2. Which of the following statements about transport tunnels used by services is TRUE?
 - a. A transport label remains unchanged across the service provider's network.
 - b. Two service tunnels cannot be bound to the same transport tunnel.
 - c. Multiple transport tunnels can be carried on a single network port.
 - d. Packets transmitted on a GRE transport tunnel do not have a service label.
- 3. Which of the following parameters is NOT required when configuring a local service on a PE router?
 - a. Service ID
 - b. Customer ID
 - c. SDP ID
 - d. Service Type
- 4. Which of the following statements about the components of a distributed service on a Nokia 7750 SR is TRUE?
 - a. Each service must use a separate SDP.
 - b. An SAP can be used by multiple services on a router.
 - c. An SAP can only be created on an access port.
 - d. The VC IDs at both ends of a service can be different.

- 5. Which of the following SAP encapsulations does NOT support multiple services on a port?
 - a. Dot1q
 - b. Null
 - c. QinQ
 - d. ATM
- 6. Which of the following statements about SDPs is TRUE?
 - a. An SDP is specific to one service type.
 - b. An SDP uses the system IP address to identify the far-end router.
 - c. An SDP can simultaneously support GRE and MPLS encapsulation.
 - d. SDP IDs must be globally unique.
- 7. Which of the following statements about SAP 1/1/1:7.* is FALSE?
 - a. It accepts only Q-in-Q frames with an outer tag of 7 and an inner tag of any value.
 - b. The outer tag of an accepted frame is stripped.
 - c. The inner tag of an accepted frame is passed transparently.
 - d. Port 1/1/1 must be configured for Q-in-Q Ethernet encapsulation.
- 8. A dot1Q SAP 1/1/1:* configured on an Epipe service on a Nokia 7750 SR has an MTU of 1518 bytes. What should the configured value of the service MTU be so that the Epipe carries full-size Ethernet frames received on the default SAP?
 - a. 1510
 - b. 1514
 - c. 1518
 - d. 1522
- 9. An IES interface is configured with a spoke SDP that uses GRE encapsulation. The network port associated with the SDP has an MTU of 9000 bytes. What is the VC-MTU for the IES?
 - a. 8944
 - b. 8964
 - c. 8978
 - d. 8986
- 10. Which of the following statements about ADSPEC is TRUE?
 - a. ADSPEC is enabled under the 'service sdp' context.
 - b. ADSPEC automatically adjusts the service MTU.
 - c. ADSPEC detects the smallest MTU value found on the LSP path.
 - d. ADSPEC can be used for both LDP and RSVP-TE LSPs.
- 11. Consider an Epipe service configured with SAP 1/1/1:10.11 at one site and SAP 1/1/2:20 at the other site. If SAP 1/1/1:10.11 accepts an ingress frame, which of the following statements is TRUE?
 - a. The frame is dropped at the egress SAP 1/1/2:20.
 - b. The frame egresses 1/1/2:20 with an outer VLAN tag of 20 and an inner tag of 11.
 - c. The frame egresses 1/1/2:20 with a VLAN tag of 20.
 - d. The frame egresses 1/1/2:20 with a VLAN tag of 11.

- 12. Which of the following statements distinguishes a VPLS service from a VPWS service?
 - a. VPLS can signal service labels using T-LDP protocol.
 - b. VPLS performs MAC learning to build an FDB containing the addresses of customer devices.
 - c. VPLS supports SAP encapsulations of type null, dot1Q and Q-in-Q.
 - d. VPLS can operate over a single local site or over geographically dispersed sites.
- 13. Which of the following statements about traffic flooding within a VPLS is FALSE?
 - a. Unknown traffic received on a spoke SDP is transmitted to all the SAPs in the VPLS.
 - b. Unknown traffic received on a SAP is transmitted to all other SAPs in the VPLS.
 - c. Unknown traffic received on a SAP is transmitted to mesh SDPs in the VPLS.
 - d. Unknown traffic received on a mesh SDP is transmitted to other mesh SDPs in the VPLS.
- 14. Which of the following statements about SDPs in a VPLS is FALSE?
 - a. The type of SDP determines how flooded traffic is transmitted.
 - b. Mesh SDPs ensure that all PEs receive only one instance of a broadcast frame.
 - c. Spoke SDPs require the routers at both ends to be directly connected.
 - d. Mesh SDPs and spoke SDPs can be used in the same VPLS.
- 15. Which of the following statements about VPLS MAC learning is FALSE?
 - a. Both customer CE routers and PEs perform MAC learning.
 - b. PEs maintain a separate FDB for each VPLS configured on the router.
 - c. The FDB only stores the MAC addresses of the customer's attached devices.
 - d. After a PE floods a frame, all PE routers in the VPLS learn the source MAC address of the frame.
- 16. VPLS1000 is configured on all PE routers in the shown network. How many service labels must be signaled among the PE routers to bring up the fully meshed VPLS?



e. 16

- 17. What happens by default on a Nokia 7750 SR when a tagged frame is received at the ingress of SAP 1/1/1:* in a VPLS?
 - a. The FCS is kept in the customer frame. The VLAN tag is kept and transported over the network.
 - b. The FCS is kept in the customer frame. The VLAN tag is removed.
 - c. The FCS is removed from the frame. The VLAN tag is kept and transported over the network.
 - d. The FCS is removed from the frame. The VLAN tag is removed.
- 18. Epipe 10 is configured to terminate on VPLS 100 as shown in the exhibit. Which of the following statements is TRUE about the values of vc-id1 and vc-id2 for the Epipe service to be operationally UP?



- a. vc-id1 must be set to 10 and vc-id2 must be set to 100.
- b. vc-id1 and vc-id2 must be set to same value.
- c. vc-id1 and vc-id2 must be set to 10.
- d. vc-id1 and vc-id2 must be set to 100.
- 19. Which of the following statements about the lsp-trace command on a Nokia 7750 SR is FALSE?
 - a. Isp-trace is used for hop-by-hop fault localization and path tracing.
 - b. The MPLS echo request packet is sent to the control plane of each transit LSR.
 - c. Each transit LSR performs various checks to verify that it is indeed a transit LSR for the LSP path.
 - d. Isp-trace verifies the LSP path in both directions.
- 20. The svc-ping tool is used on the Nokia 7750 SR PE1 to verify the end-to-end connectivity of Epipe 100. The far end PE router has an IP address of 10.10.10.6. Which of the following statements is TRUE?
 - a. The ping is sent to the far end in-band using the SDP.
 - b. The return ping from the far end to PE1 is sent in-band.
 - c. The command tests the round-trip connectivity of the Epipe service.
 - d. The command output shows the hops taken between PE1 and the far end.

- 21. Which of the following statements about the sdp-ping tool on a Nokia7750 SR is FALSE?
 - a. sdp-ping tests the service's ability to reach the far-end IP address of an SDP within the SDP encapsulation.
 - b. sdp-ping OAM packets follow the same path as traffic within the service.
 - c. The sdp-ping response can be received out-of-band in the control plane.
 - d. A local egress SDP ID and a remote SDP ID are required for a unidirectional connectivity test.
- 22. The service MTU of a Layer 2 service that uses an MPLS encapsulated SDP is set to 5000. What is the minimum required Ethernet network port MTU for supporting this service?
 - a. 5000
 - b. 5004
 - c. 5014
 - d. 5022
- 23. The operator at PE1 wants to analyze traffic between PE2 and CE4. On a Nokia 7750 SR, which of the following is NOT required as part of the configuration?



- a. PE1 needs a mirror destination with the remote source specified.
- b. PE2 needs a mirror destination with an SDP specified.
- c. PE1 needs a mirror source specified.
- d. PE2 needs a mirror source specified.

24. Which of the following statements about mirror slicing on a Nokia 7750 SR is FALSE?

- a. It allows network operators to monitor only the customer data portion that they need to analyze.
- b. It supports the configuration of multiple slices in a mirror service.
- c. It reduces the size of the data that is replicated.
- d. It is configured in the mirror destination context.

- 25. Which of the following statements about IES is TRUE?
 - a. An IES requires a spoke SDP.
 - b. An IES interface has an IP address assigned to it.
 - c. Only one IES service can be created for a single customer ID.
 - d. Only one interface can be configured in a single IES.
- 26. A CE is connected to an IES interface. Which of the following statements is FALSE?
 - a. A SAP must be configured on the IES interface.
 - b. The CE must be on the same subnet as the IES.
 - c. The IES can include more than one SAP for the CE.
 - d. The CE must fragment any frames that are too large for the IES.
- 27. IES 100 on PE1 has a spoke termination to VPLS 10 on PE2. The service MTU of VPLS 10 is set to 1514. Which of the following configurations is required to bring the shown SDP up?

*A:PE1# show serv Service Destinati	rice id 100 sdp 2:10 on Point (Sdp Id :	00 detail 2:100) Details	
Sdp Id 2:100 -(1	.0.10.10.2)		
SDP Id	: 2:100	Type	: Spoke
VC Type	: Ether	VC Tag	: n/a
Admin Path MTU	: 0	Oper Path MTU	: 1556
< output omitt	ed >		
Class Fwding Stat	e : Down		
Flags	: ServiceMTUMisma	atch	
< output omitt	ed >		

- a. Set the ip-mtu of the IES to 1514.
- b. Set the ip-mtu of the IES to 1500.
- c. Set the service MTU of VPLS 10 to 1578.
- d. Set the service MTU of VPLS 10 to 1542.
- 28. Which of the following statements about an R-VPLS service is FALSE?
 - a. Both VPRN and IES interfaces are supported.
 - b. A VPLS service can only be bound to a single IP interface.
 - c. It allows the connection of a Layer 2 service to a Layer 3 service across two different routers.
 - d. Can be thought of as an internal hairpin between a Layer 2 and a Layer 3 interface.
- 29. Which of the following statements is NOT a characteristic of VPRN?
 - a. Customer sites connected to the same service must use the same IP subnet.
 - b. Customer sites can use different Layer 2 technologies to connect to the service.
 - c. Customer sites can use a routing protocol independent from the one used by the service provider.
 - d. Different customers can use overlapping private IP address space.

- 30. Which of the following statements about a VPRN service label is TRUE?
 - a. It is pushed onto customer packets by the CE.
 - b. It is used to identify which VPRN a packet belongs to.
 - c. It contains the customer's IP address.
 - d. It is exchanged for a transport label during transport.
- 31. Which of the following statements about VPRN VRF tables is TRUE?
 - a. VRF tables are used by P routers to maintain customer-specific information.
 - b. A PE uses the same VRF table for all configured VPRN services.
 - c. PEs exchange routes in VRFs using MP-BGP.
 - d. Route distinguishers are used to determine if a prefix belongs to a VRF.
- 32. Which of the following statements about the VPRN data plane is FALSE?
 - a. A service label and a transport label are pushed onto a customer packet at the ingress PE.
 - b. The transport label identifies the egress PE for a customer packet.
 - c. The transport label is exchanged at each P router as the packet crosses the service provider network.
 - d. The egress PE pops the service label, and the transport label is forwarded.
- 33. Which of the following statements about the BGP VPN-IPv4 address family is TRUE?
 - a. VPN-IPv4 addresses are present within the data packets of a VPRN service.
 - b. In an IPv4 VPRN service, VPN-IPv4 needs to be enabled for PE-CE BGP sessions.
 - c. VPN-IPv4 allows multiple customers to have overlapping IP addresses.
 - d. A CE router creates a VPN-IPv4 prefix from an IPv4 prefix.
- 34. Which of the following statements about route distinguishers is FALSE?
 - a. A route distinguisher is an identifier used by the VPN-IPv4 family to ensure that IP prefixes are globally unique.
 - b. A route distinguisher is appended to an IPv4 prefix to form a 12-byte VPN-IPv4 prefix.
 - c. PE routers append route distinguishers to IPv4 prefixes received from local CEs over VPRN interfaces.
 - d. A VPRN data packet carries a route distinguisher in its VPN-IPv4 address.
- 35. Which of the following statements about VPRN route targets is FALSE?
 - a. Route targets are used to advertise the VPRN membership identifiers to the receiving PE.
 - b. Route targets are distributed to all PEs and CEs that are part of the VPRN.
 - c. VPRN uses route targets to control the distribution of VPN routing information.
 - d. PEs associate each VPN-IPv4 route with one or more route targets.
- 36. Which of the following configuration steps is NOT required for the successful operation of a VPRN service on Nokia 7750 SRs?
 - a. Configure SDPs between PE routers.
 - b. Configure an IGP for the provider core routing.
 - c. Configure MP-BGP between PE routers.
 - d. Configure a CE-PE routing protocol.

37. Based upon the output shown, how many prefixes has PE1 learned from other PEs for VPRN service 10?

FIB Display	
Prefix NextHop	Protocol
10.1.3.0/27	LOCAL
10.1.3.0 (toCE1)	DCD UDN
10.2.4.0/2/	BGP_VPN
10.10.10.3/32	BGP
10.1.3.3 Indirect (toCE1)	
10.10.10.4/32	BGP VPN
10.10.10.2 (VPRN Label:131069 Transport:LDP)	-
192.168.1.0/27	BGP
10.1.3.3 Indirect (toCE1)	
192.168.2.0/27	BGP_VPN
10.10.10.2 (VPRN Label:131069 Transport:LDP)	

a. 0

b. 2

с. З

d. 6

38. BGP is used as the PE-CE routing protocol in VPRN 10, as shown. Which of the following statements about BGP configuration on PE1 is TRUE?



- a. An import policy must be added to the BGP configuration.
- b. An export policy must be added to the BGP configuration.
- c. The system IP address of CE must be used as the neighbor address.
- d. The BGP configuration is complete.

39. The two PEs are providing 6VPE and IPv4 VPRNs. The core network is IPv4/MPLS. Which of the following is the BGP family configuration for the MP-BPG on the PEs?



- a. family { ipv4 true ipv6 true }
- b. family { vpn-ipv4 true ipv6 true }
- c. family { vpn-ipv4 true vpn-ipv6 true }
- d. family { ipv6 true vpn-ipv6 true }
- 40. Which of the following about 6VPE is TRUE?
 - a. PEs must use a default static route to reach to the far end remote CEs.
 - b. PEs require IPv6 enabled on all interfaces.
 - c. PEs must use MP-BGP VPN-IPv6 address family.
 - d. CEs must be dual stack routers.

Answer Key

1	B	16	П
1.	5	10.	0
2.	С	17.	С
3.	С	18.	В
4.	С	19.	D
5.	В	20.	А
6.	В	21.	D
7.	А	22.	D
8.	С	23.	С
9.	А	24.	В
10.	С	25.	В
11.	С	26.	D
12.	В	27.	В
13.	D	28.	С
14.	С	29.	А
15.	А	30.	В

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