OSPF

1. You are enabling OSPF routing protocol in your infrastructure. You are deploying the backbone area in the network and a local area for your private interface. Interfaces are configured:
   wan_interface = 192.168.1.65/26,
   lan_interface = 10.0.0.1/24,

   In order to start to redistribute the routes, under routing OSPF you have to enter:
   - A. network add area=backbone network = 192.168.1.127/26; area = private network = 10.0.0.0/24
   - B. network add area=backbone network = 192.168.1.65/26; area = private network = 10.0.0.1/24
   - C. network add area=backbone network = 192.168.1.1/26; area = private network = 10.0.0.0/24
   - D. network add area=backbone network = 192.168.1.64/26; area = private network = 10.0.0.0/24
   - E. interface add interface=lan_interface, interface=wan_interface
   - F. network add area=backbone network = 192.168.1.64/26; area = private network = 10.0.0.0/24
2. Select correct statements about STUB area,
   - ☐ A. There is on ASBR in the area.
   - ☐ B. All routers in a STUB area must be configured as STUB
   - ☐ C. There is one ASBR in the area
   - ☐ D.OSPF network type is NSSA
   - ☐ E. Area is not 0 (backbone)
3. The correct order for PPPoE discovery stage is :
   - A. Initialization , Session confirmation , Request and Offer
   - B. Request, Offer, Initialization and Session confirmation
   - C. Initialization, Offer, Request and Session confirmation
   - D. Request, Initialization , Session confirmation and Offer
4. /ip route configuration on router,

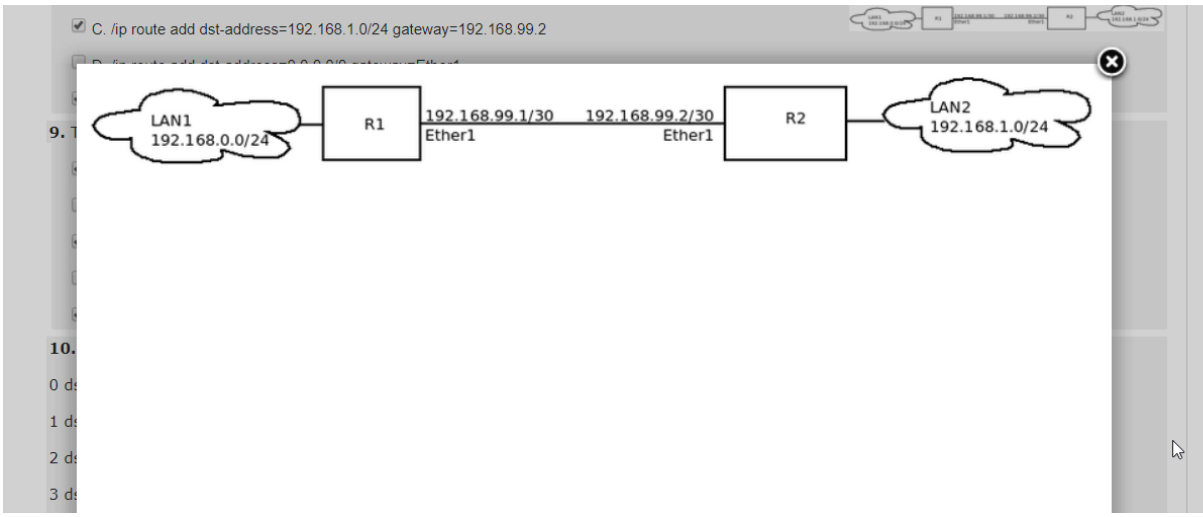
   /ip route add gateway = 192.168.0.1
   /ip route add dst-address = 192.168.1.0/24 gateway = 192.168.0.2
   /ip route add dst-address = 192.168.2.0/24 gateway = 192.168.0.3
   /ip route add dst-address = 192.168.3.0/26 gateway = 192.168.0.4
   Router need to send packets to 192.168.3.240. Which gateway will be used?
   - A. 192.168.0.3
   - B. 192.168.0.2
   - C .192.168.0.4
   - D. 192.168.0.1
5. In OSPF, router can become the DR (Designated Router) only when the priority on it's interface is set to a value of zero
   False

6. Three routers are connected to each other
   A has a 2 Mbit connection to B.
   B has a 10 Mbit connection to C.
   C has a 100 Mbit connection back to A.
   What is the traffic direction flow from A to B with OSPF protocol (basic OSPF configuration)?
   - ○ A. A-B
   - ○ B. A-C-B
7. In OSPF network it is possible to use area-id=0.0.0.0 for non backbone are
   FALSE
8. How many adjacencies are formed in broadcast subnet with a DR and BDR consisting of 13 routers?
   - ○ A. 23
   - ○ B. 13
   - ○ C. 78
   - ○ D. 1
9. OSPF area ID does not need be unique within the AS.
   FALSE
10. New area OSPF \"area1\" has been created. What could be used as a valid area id?
    - ☐ A. 0.0.0.0
    - ☐ B. 1.2.3.4
    - ☐ C. 0.0.0.1
11. What is the maximum number of hops, after which the network will be considered unreachable in OSPF?
    - ○ A. 99
    - ○ B.15
    - ○ C. 16
    - ○ D. Unlimited
12. Concerning the OSPF protocol, mark the correct statement below:
    - ☐ A. On a OSPF point to point network, where Routers have the same priority, the router with the highest router ID will be elected as the DR (Designated Router)
    - ☐ B. if the router ID is not specified. OSPF will the lowest IP address of the router as the router ID'
    - ☐ C. The OSPF Hello protocol can use multicast address 244.0.0.5
    - ☐ D. Each router belonging to a OSPF network knows the best path to get to all other routers of the network, from its point of view
13. Connecting the OSPF protocol, mark the correct statement below:
    - ☐ A. The OSPF Hello protocol can use multicast address 244.0.0.5
    - ☐ B. If the router ID is not specified OSPF will use the lowest IP address of the router as the router ID
    - ☐ C. Each router belonging to a OSPF network knows the best path to get to all other routers of the network, from its point of view
    - ☐ D. On a OSPF point to point network, where Routers have the same priority, the router with the highest router ID will be elected as the DR (Designated Router)

14. What is the type of a router that is always connected to more than one OSPF area?
    - A. Internal Router (IR)
    - B. Stub Area router (SAR)
    - C. Area Bonder Router (ABR)
    - D. Autonomous System Bonder Router (ASBR)

Static Routing

15. If route type is 'blackhole', the packets to the destination network are going to be
    - A. dropped on this router and ICMP message will be sent back to the source
    - B. sent back to the source
    - C. sent back to the previous router
    - D. dropped on this router
16. The 'check-gateway' option is enabled for one route. Select all statements that are true:
    - ☐ A. Check gateway option can be configured for Ping, ARP and RARP (reverse ARP)
    - ☐ B. In case of failure of the gateway, routes pointing to that gateway will become inactive
    - ☐ C. Gateway is checked every 10 seconds and after a single failure, the gateway is considered unreachable
    - ☐ D. Gateway is checked every 10 seconds and after 2 failure, the gateway is considered unreachable
17. Consider the following diagram. Assuming that all the necessary configuration has already been done on R2 (proxy-arp is disable), to communicate from a device on LAN1 to a device on LAN2, which of following configurations no R1 would enable this?
    - ☐ A. / ip route add dst-address = 0.0.0.0/0 gateway = 192.168.99.2
    - ☐ B. / ip route add dst-address = 192.168.0.0/24 gateway = 192.168.0.1
    - ☐ C. / ip route add dst-address = 0.0.0.0/0 gateway = Ether1
    - ☐ D. / ip route add dst-address = 192.168.1.0/24 sre-address = 192.168.0.0/24 gateway = 192.168.99.2
    - ☐ E. / ip route add dst-address = 192.168.1.0/24 gateway = 192.168.99.2



18. If router receives packet with TTL = 1 then:
    - A. packet will be forwarded only to next L3 device
    - B. packet will not be forwarded
    - C. packet will always reach its destination
19. If check-gateway = ping for a route is selected is the gateway for the route does not respond to pings, how many seconds does it take for the router to disable the route?
    - A. 5s
    - B. 10s
    - C. 20s
    - D. it depends on network type on affected interface
20. When sending out an Arp request, an IP host expecting what kind of address for answer?
    - A. 802.11g
    - B. VLAN ID
    - C. IP address
    - D. MAC Address
21. Which static-route rule will have priority for destination 192.168.0.18?
    - A. dst-address=192.168.0.0/28 gateway=192.168.4.1 distance = 5
    - B. dst-address=192.168.0.0/24 gateway=192.168.3.1 distance = 1
    - C. dst-address=192.168.0.0/26 gateway=192.168.2.1 distance = 2
    - D. dst-address=192.168.0.0/26 gateway=192.168.1.1 distance = 3
    - E. dst-address=192.168.0.0/28 gateway=192.168.3.1 distance = 1
22. There are two routes in the routing table:
    0 dst-addr = 10.1.1.0/24 gateway = 5.5.5.5
    1 dst-addr = 10.1.1.4/23 gateway = 5.6.6.6
    Which gateway will be used to get to the IP address 10.1.1.6?
    - A. 5.6.6.6
    - B. both – half of the traffic will be routed through gateway, half through the other
    - C. 5.5.5.5
    - D. the required route is not in the routing table

23. When using routing option ‘check-gateway=ping’ what is the ICMP echo request interval (in seconds)?
    - A. 20s
    - B. 30s
    - C. 60s
    - D. 10s
24. A routing table has following entries:
    0 dst-address = 10.0.0.0/24 gateway = 10.1.5.126
    1 dst-address = 10.1.5.0/24 gateway = 10.1.1.1
    2 dst-address = 10.1.0.0/24 gateway = 25.1.1.1
    3 dst-address = 10.1.5.0/25 gateway = 10.1.1.2

    Which gateway will be used for a packet with destination address 10.1.5.126?
    - A.10.1.1.1
    - B. 10.1.5.126
    - C. 25.1.1.1
    - D.10.1.1.2
25. Please see network diagram.
    A packet with destination address 10.11.12.5 passes via MikroTik Router 1. In addition to the connected routes the router has following route added to the routing table:
    MikroTik Router 1 :
    /ip route add dst-address = 10.11.12.0/24 gateway = 1.1.1.2

    MikroTik Router 2 :
    /ip route add dst-address = 10.11.12.0/24 gateway = 2.2.2.2

    MikroTik Router 3 :
    /ip route add dst-address = 10.11.12.0/24 gateway = 3.3.3.2

    What will happen?
    - A. There will be infinite loop until TTL of packet is equal to 1
    - B. MikroTik Router 3 will discard the packet
    - C. There will be infinite loop until one of routers is disabled
    - D. Packet will reach the destination

26. Which route will be used to reach host 192.168.1.55?
    /ip route
    Add disabled=no distance=1 dst-address=192.168.1.0/24 gateway=1.1.1.1
    Add disabled=no distance=1 dst-address=192.168.1.0/25 gateway=2.2.2.2
    Add disabled=no distance=1 dst-address=192.168.0.0/16 gateway=3.3.3.3
    - A. Route via gateway 3.3.3.3
    - B. Route via gateway 1.1.1.1
    - C. Route via gateway 2.2.2.2
27. Equal cost in terms of routes in a routing table mean:

- A. The administrative distance to the same destination network is the same via two or more gateways
- B. The RSTP cost to the same destination network is the same via two or more gateways
- C. Two OSPF routes from two areas
- D. The same destination network is reachable via two or more gateway

28. Routing table has several routes with the same gateway. If 'check-gateway' is enabled for one of the routes, and the gateway becomes unreachable , then
    - A. all routes with the same gateway would become inactive
    - B. only this one route would become inactive
    - C. the 'check-gateway' feature would not work at all, since the same gateway is used for more than one route
29. How many routing marks can be added to a RouterOS device?
    - A.500
    - B. Unlimited
    - C 251
    - D. 10
30. ECMP provides:
    - A. per connection load balancing to multiple gateways
    - B. per src/dst address pair load balancing to multiple gateways
    - C. per src address load balancing to multiple gateways
    - D. per packet load balancing to multiple gateways
31. RouterOS main routing table contains static, RIP, and OSPF routes destined to the same network. Which of the following routes will be used if the administrative distance of each of the routing protocol entries is set to their default values?
    - A. The RIP route
    - B. All three will load balance
    - C. The static route
    - D. The OSPF route
32. Define a routing loop (choose the most precise description)
    - A. Situation where the packet dose not reach it's destination
    - B. Situation where the packet is routed through the same router twice
    - C. Situation where the TTL of the packet expires
    - D. Situation where the packet is routed through the same sequence of routers until the TTL expires
33. In an ECMP route, we have 3 gateway A, B, C. We have written A and B one time and C two times for gateways.
    How many percent of packets will route to gateway?
    - A. 25%
    - B. 30%
    - C. 50%

Point-to-Point Addressing

34. What addressing scheme is typically used on a PPP link?
    - A. /32 address on each side of the link
    - B./30 subnet
    - C./31 subnet
    - D. /24 private subnet

VPN/Tunnel

1. Settings in /ppp secret user database override corresponding /ppp profile setting
   TRUE
2. To securely bridge (Layer 2) together two remote networks the following methods can be used:
   - ☐ A. IPIP with IPsec secret specified
   - ☐ B. PPTP or L2TP/IPsec
   - ☐ C. EoIP with IPsec secret specified
   - ☐ D. SSTP with BCP or L2TP/IPsec with BCP
   - ☐ E. EoIP over SSTP or over L2TP/IPsec
3. What conditions listed below are required to set up an EoIP tunnel between two RouterOS instances?
   - ☐ A. Both routers must have the same 'Tunnel ID'
   - ☐ B. Both routers must have different 'MAC addresses'
   - ☐ C. Both routers must have different 'Tunnel ID' values
   - ☐ D. Both routers must have the same 'MAC addresses'
4. How is PPPoE concentrator discovered?
   - A. Layer 2 broadcast (PADI frame).
   - B. Layer 4port forwarding.
   - C. Layer 3 directed broadcast.
   - D. Manual IP address is necessary
5. There are two PPPoE stages, Discovery and Session.
   TRUE
6. Select true statement about PPPoE server
   - ☐ A. There can be more than one PPPoE server on one single interface
   - ☐ B. PPPoE users can be bound to one specific PPPoE server
   - ☐ C. You can use different port to use more than one PPPoE server
   - ☐ D. For multiple PPPoE server you need to use different physical interfaces (ethernet or wireless)
7. EOIP tunnels can be bridged because they are not true layer 2 tunnels.
   FALSE

VLAN

1. Router OS can set vlan-id value from – to :
    - A. 1-2049
    - B. 1-4096
    - C. 1-2048
    - D. 1-4095
2. A network administrator has 2 vlans
   /interface vlan
   Add name=vlan1 vlan-id=101 interface=ether1
   Add name=vlan1 vlan-id=102 interface=vlan1
   Any packet over"vlan2" interface
    - A. will have two vlan tags added to ethernet header = "101" and "102"
    - B. Wrong configuration because it is not possible to have a vlan over another vlan
    - C. will have one vlan tag added to ethernet header= "101"
    - D. will have one vlan tag added to ethernet header= "102"
    - E. will not go through at all because vlan1 will drop it
3. VLAN is an implementation of the 802.1Q VLAN protocol by the MikroTik RouterOS. It allows you to have multiple Virtual LANs on a single Ethernet or wireless interface, giving the ability to segregate LANs efficiently.
   TRUE
4. How many different vlans are possible on a single ethernet port?
    - A. 4095
    - B. only one
    - C. 63
    - D. 4096