

El-Oued University - Faculty of Exact Sciences
Department of Mathematics and Computer science
First-year Master in Internet of Things & Cybersecurity
Exam of Networks and Interconnection
2024 - 2025

First name:

Last name:

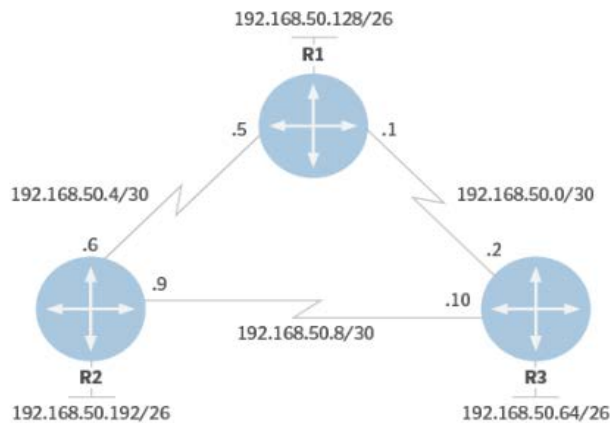
Group:

1. What route is installed in routing table when 172.16.1.0/26 network is advertised from all of the following route sources?
 - OSPF route
 - static route
 - EIGRP route
 - floating static route
 - default route
2. What routing protocol has the lowest administrative distance?
 - OSPF
 - eBGP
 - RIP
3. Host A receives a frame and discards it after determining it is corrupt. Which OSI layer checks frames for errors?
 - Application
 - Network
 - Physical
 - Data-link
 - FCS or CRC
4. No matter how it's configured, a single switch port is considered what?
 - A separate unicast domain
 - A separate broadcast domain
 - A separate multicast domain
 - A separate collision domain
5. Why is NAT not needed in IPv6?
 - Because IPv6 has integrated security, there is no need to hide the IPv6 addresses of internal networks.
 - Any host or user can get a public IPv6 network address because the number of available IPv6 addresses is extremely large.
 - The problems that are induced by NAT applications are solved because the IPv6 header improves packet handling by intermediate routers.
 - The end-to-end connectivity problems that are caused by NAT are solved because the number of routes increases with the number of nodes that are connected to the Internet.
6. Which information is used by routers to forward a data packet toward its destination?
 - source IP address
 - destination IP address
 - source data-link address
 - destination data-link address

● نقطة واحدة لكل اجابة صحيحة

● نقطة السؤال الملغى (7) خصصة لنضافة الورقة

7. In the network diagram below, which path will packets take when traveling from host 192.168.50.126 to host 192.168.50.5?
- Packets will travel from R3 to R2 to R1.
 - Packets will travel from R1 to R3 to R2.
 - Packets will travel from R3 to R1 and return back to R3.
 - Packets will travel from R3 to R1 and from R3 to R2 to R1.
 - Packets will travel from R1 to R2 and back.



```
R3# sh ip route
Gateway of last resort is not set
192.168.50.0/26 is variably subnetted, 6 subnets, 2 masks
C 192.168.50.64/26 is directly connected, FastEthernet0
C 192.168.50.8/30 is directly connected, Serial0/1
C 192.168.50.0/30 is directly connected, Serial0/0
D 192.168.50.4/30 [90/21024000] via 192.168.50.9, 02:52:16, Serial 0/1
    [90/21024000] via 192.168.50.1, 02:52:16, Serial 0/0
D 192.168.50.192/26 [90/20537600] via 192.168.50.9, 02:52:16, Serial 0/1
D 192.168.50.128/26 [90/20537600] via 192.168.50.1, 02:52:17, Serial 0/0
```

8. A computer has to send a packet to a destination host in the same LAN. How will the packet be sent?
- The packet will be sent to the default gateway first, and then, depending on the response from the gateway, it may be sent to the destination host.
 - The packet will be sent directly to the destination host.
 - The packet will first be sent to the default gateway, and then from the default gateway it will be sent directly to the destination host.
 - The packet will be sent only to the default gateway.
9. A computer can access devices on the same network but cannot access devices on other networks. What is the probable cause of this problem?
- The cable is not connected properly to the NIC.
 - The computer has an invalid IP address.
 - The computer has an incorrect subnet mask.
 - The computer has an invalid default gateway address.
10. Which statement describes a feature of the IP protocol?
- IP encapsulation is modified based on network media.
 - IP relies on Layer 2 protocols for transmission error control.
 - MAC addresses are used during the IP packet encapsulation.
 - IP relies on upper layer services to handle situations of missing or out-of-order packets.
11. Which parameter does the router use to choose the path to the destination when there are multiple routes available?
- the lower metric value that is associated with the destination network
 - the lower gateway IP address to get to the destination network
 - the higher metric value that is associated with the destination network
 - the higher gateway IP address to get to the destination network

12. What is a basic characteristic of the IP protocol?

- connectionless
- media dependent
- user data segmentation
- reliable end-to-end delivery

13. What statement describes the function of the Address Resolution Protocol?

- ARP is used to discover the IP address of any host on a different network.
- ARP is used to discover the IP address of any host on the local network.
- ARP is used to discover the MAC address of any host on a different network.
- ARP is used to discover the MAC address of any host on the local network.

14. Which two functions are primary functions of a router? (Choose two.)

- packet forwarding
- microsegmentation
- domain name resolution
- path selection
- flow control

```
4507R+E#show ip dhcp conflict
IP address      Detection method  Detection time
192.168.7.39    Gratuitous ARP    Apr 16 2015 11:26 AM
192.168.7.49    Ping              Apr 16 2015 02:51 PM
192.168.7.22    Gratuitous ARP    Apr 16 2015 03:36 PM
192.168.7.55    Ping              Apr 16 2015 03:47 PM
```

15. What actions does the DHCP server take when there is an IP address conflict, as shown above?

- The DHCP server will automatically resolve all conflicts after their lease is over.
- The IP addresses are removed from the DHCP pool until the conflicts are resolved.
- The IP addresses detected by gratuitous Address Resolution Protocol are removed from the pool.
- The IP addresses detected by ping are removed from the pool.
- The DHCP server needs to be restarted in order to automatically clear all conflicts.

16. What does a client do when it has UDP datagrams to send?

- It just sends the datagrams.
- It queries the server to see if it is ready to receive data.
- It sends a simplified three-way handshake to the server.
- It sends to the server a segment with the SYN flag set to synchronize the conversation.

17. Which three application layer protocols use TCP? (Choose three.)

- SMTP
- FTP
- SNMP
- HTTP
- TFTP
- DHCP

Good Luck