ΥΠΟΥΡΓΕΙΟ ΠΑΙΔΕΙΑΣ, ΠΟΛΙΤΙΣΜΟΥ, ΑΘΛΗΤΙΣΜΟΥ ΚΑΙ ΝΕΟΛΑΙΑΣ
ΔΙΕΥΘΥΝΣΗ ΜΕΣΗΣ ΓΕΝΙΚΗΣ ΕΚΠΑΙΔΕΥΣΗΣ
ΛΕΥΚΩΣΙΑ

ΠΑΓΚΥΠΡΙΕΣ ΕΞΕΤΑΣΕΙΣ 2020

Α΄ ΣΕΙΡΑ ΕΞΕΤΑΣΕΩΝ

ΜΑΘΗΜΑ ΑΠΟΛΥΣΗΣ

ΜΑΘΗΜΑ : ΔΙΚΤΥΑ – 60

ΧΡΟΝΟΣ : 2 ώρες και 30 λεπτά

ΗΜΕΡΟΜΗΝΙΑ : 29 Ιουνίου 2020

ΩΡΑ ΕΝΑΡΞΗΣ : 7.45 π.μ.

ΤΟ ΕΞΕΤΑΣΤΙΚΟ ΔΟΚΙΜΙΟ ΑΠΟΤΕΛΕΙΤΑΙ ΑΠΟ ΔΕΚΑΕΞΙ (16) ΣΕΛΙΔΕΣ

Οδηγίες:

- **Να απαντήσετε σε όλες τις ερωτήσεις**
- **Όλες οι απαντήσεις να γραφούν στο τετράδιο απαντήσεων**
- **Επιτρέπεται η χρήση μη προγραμματιζόμενης υπολογιστικής μηχανής**

ΜΕΡΟΣ Α. (30 μονάδες)
Να απαντήσετε και στις είκοσι (20) ερωτήσεις πολλαπλής επιλογής. Η κάθε ερώτηση βαθμολογείται με 1½ μονάδα.

Ερώτηση 1. **(ch1. Routing Concepts 2020)**

What route would have the lowest administrative distance?

(a) a static route
(b) a route received through the RIP routing protocol
(c) a route received through the EIGRP routing protocol
(d) a route received through the OSPF routing protocol

Ερώτηση 2. **(ch1. Routing Concepts 2020)**

A network administrator configures the interface fa0/0 on router R1 with the command

ip address 172.16.1.254 255.255.255.0

However, when the administrator issues the command ***show ip route***, the routing table does not show the directly connected network. What is the possible cause of the problem?

(a) The subnet mask is incorrect for the IPv4 address
(b) The configuration needs to be saved first
(c) The interface fa0/0 has not been activated
(d) No packets with a destination network of 172.16.1.0 have been sent to R1

Ερώτηση 3. **(ch2. Static Routing 2020)**

Consider the following command:

ip route 192.168.10.0 255.255.255.0 10.10.10.2 5

Which route would have to go down for this static route to appear in the routing table?

(a) a default route
(b) a static route to the 192.168.10.0/24 network
(c) an OSPF-learned route to the 192.168.10.0/24 network
(d) an EIGRP-learned route to the 192.168.10.0/24 network

Ερώτηση 4. **(ch2. Static Routing 2020)**

The network administrator configures the router with the ***ip route 172.16.1.0 255.255.255.0 172.16.2.2*** command. How will this route appear in the routing table?

(a) C 172.16.1.0 is directly connected, Serial0/0
(b) S 172.16.1.0 is directly connected, Serial0/0
(c) C 172.16.1.0 [1/0] via 172.16.2.2
(d) S 172.16.1.0 [1/0] via 172.16.2.2

Ερώτηση 5. **(ch3. Dynamic Routing 2020)**

Which route would be automatically created when a router interface is activated and confgured with an IP address??

(a) D 10.16.0.0/24 [90/3256] via 192.168.6.9
(b) C 192.168.0.0/24 is directly connected, FastEthernet 0/0
(c) S 192.168.1.0/24 is directly connected, FastEthernet 0/1
(d) O 172.16.0.0/16 [110/65] via 192.168.5.1

Ερώτηση 6. **(ch3. Dynamic Routing 2020)**

Which route would be used to forward a packet with a source IP address of 192.168.10.1 and a destination IP address of 10.1.1.1?

(a) C 192.168.10.0/30 is directly connected, GigabitEthernet0/1
(b) S 10.1.0.0/16 is directly connected, GigabitEthernet0/0
(c) O 11.1.1.0/24 [110/65] via 192.168.200.2, 00:01:20, Serial0/1/0
(d) S* 0.0.0.0/0 [1/0] via 172.16.1.1

Ερώτηση 7. **(ch4. Switched Networks 2020)**

A small local bank has a network design such that when a broadcast is sent on the LAN, 400 devices receive the transmitted broadcast. How can the network administrator reduce the number of devices that receive broadcast traffic?

(a) Add more switches so that fewer devices are on a particular switch.
(b) Replace the switches with switches that have more ports per switch. This will allow more devices on a particular switch.
(c) Segment the LAN into smaller LANs and route between them.
(d) Replace at least half of the switches with hubs to reduce the size of the broadcast domain.

Ερώτηση 8. **(ch4. Switched Networks 2020)**

Which network device can serve as a boundary to divide a Layer 2 broadcast domain?

(a) Router
(b) Ethernet bridge
(c) Ethernet hub
(d) Access point

Ερώτηση 9. **(ch5. Switch Configuration 2020)**

Which statement is true about using full-duplex Fast Ethernet?

(a) Performance is improved with bidirectional data flow.
(b) Latency is reduced because the NIC processes frames faster.
(c) Nodes operate in full-duplex with unidirectional data flow.
(d) Performance is improved because the NIC is able to detect collisions.

Ερώτηση 10. **(ch5. Switch Configuration 2020)**

If one end of an Ethernet connection is configured for full duplex and the other end of the connection is configured for half duplex, where would late collisions be observed?

(a) on both ends of the connection
(b) on the full-duplex end of the connection
(c) only on serial interfaces
(d) on the half-duplex end of the connection

Ερώτηση 11. **(ch6. VLANs 2020)**

Which type of VLAN is used to designate which traffic is untagged when crossing a trunk port?

(a) data
(b) default
(c) native
(d) management

Ερώτηση 12. **(ch6. VLANs 2020)**

What is a characteristic of legacy inter-VLAN routing?

(a) Only one VLAN can be used in the topology.
(b) The router requires one Ethernet link for each VLAN.
(c) The user VLAN must be the same ID number as the management VLAN.
(d) Inter-VLAN routing must be performed on a switch instead of a router.

Ερώτηση 13. **(ch7. ACL 2020)**

Which scenario would cause an ACL misconfiguration and deny all traffic?

(a) Apply a standard ACL in the inbound direction.
(b) Apply a named ACL to a VTY line.
(c) Apply an ACL that has all deny ACE statements.
(d) Apply a standard ACL using the ip access-group out comma

Ερώτηση 14. **(ch7. ACL 2020)**

Which of the following wildcard mask is appropriate to use in order to deny all hosts from the network 10.20.20.0/24?

(a) 0.0.0.255
(b) 255.255.255.0
(c) 0.0.255.255
(d) 255.255.0.0

Ερώτηση 15. **(ch8. DHCP 2020)**

What is the result of a network technician issuing the following commands on a Cisco router?
ip dhcp excluded-address 192.168.1.1

ip dhcp excluded-address 192.168.1.10

(a) The Cisco router will allow only the specified IP addresses to be leased to clients.
(b) The Cisco router will exclude 10 IP addresses from being leased to DHCP clients.
(c) The Cisco router will exclude only the 192.168.1.1 and 192.168.1.10 IP addresses from being leased to DHCP clients.
(d) The Cisco router will automatically create a DHCP pool using a /30 mask.

Ερώτηση 16. **(ch8. DHCP 2020)**

Which is the first message that an IPv4 host use to find DHCP servers on the network?
(a) DHCPREQUEST
(b) DHCPACK
(c) DHCPDISCOVER
(d) DHCPOFFER

Ερώτηση 17. **(ch2. Static Routing 2020)**

What is the correct syntax of a backup (floating) static route?

(a) ip route 200.100.200.200 255.255.255.248 10.0.0.1
(b) ip route 200.100.200.200 255.255.255.248 10.0.0.1 serial0/0/0
(c) ip route 200.100.200.200 255.255.255.248 serial0/0/0 10.0.0.1
(d) ip route 200.100.200.200 255.255.255.248 10.0.0.1 10

Ερώτηση 18. **(ch.3 Dynamic Routing 2020)**

Which route is the best match for a packet entering a router with a destination address of 10.16.0.2?

(a) S 10.0.0.0/8 [1/0] via 192.168.0.2
(b) S 10.16.0.0/24 [1/0] via 192.168.0.9
(c) S 10.16.0.0/16 is directly connected, Ethernet 0/1
(d) S 10.0.0.0/16 is directly connected, Ethernet 0/0

Ερώτηση 19. **(ch.6 VLAN 2020)**

When configuring a router as part of a router-on-a-stick inter-VLAN routing topology, where should the IP address be assigned?

(a) to the interface
(b) to the subinterface
(c) to the SVI
(d) to the VLAN

Ερώτηση 20. **(ch8. DHCP 2020)**

What is the destination IP address when an IPv4 host sends a DHCPDISCOVER message?

(a) 255.255.255.255
(b) 224.0.0.1
(c) 0.0.0.0
(d) 192.168.1.1

Μέρος Β (30 μονάδες)

Να απαντήσετε σε όλες τις ερωτήσεις. Η κάθε ερώτηση βαθμολογείται με έξι (6) μονάδες.

Ερώτηση 1. **(Routing and Switching 2020)**

A) A network administrator has issued a command to view the routes in the routing table. One of the lines is the following:

R 192.168.1.10/24 [120/3] via 192.168.20.1 , 00:00:21, Serial0/0/1

Fill the blanks in the following statements. (0.5 pt for each answer)

(a) This route was set up using the RIP routing protocol.

(b) The value 120 is called the AD.

(c) The value 3 is called the metric / hop count .

(d) This route tells the router where to forward packets for network 192.168.1.10

(e) The next hop interface address is 192.168.20.1 .

(f) The router will advertise again the route in 9 seconds

B) Answer the questions regarding the following routing table. (0.5 pt for each answer)

S 10.5.0.0 /16 is directly connected, FastEthernet0/0

C 172.16.1.0/16 is directly connected, FastEthernet0/0

C 172.16.2.0 /16is directly connected, Serial0/0/0

D 172.16.3.0/16 [90/2172416] via 172.16.2.1, 00:00:18, Serial0/0/0

R 192.168.120.0/24 [120/1] via 172.16.2.1, 00:00:18, Serial0/0/0

R 172.16.3.0/16 [120/3] via 172.16.1.1, 00:00:28, FastEthernet0/0

O 192.168.110.0/24 [110/65] via 172.16.2.1, 00:00:03, Serial0/0/0

S 10.4.0.0 /16 [1/0] via 172.16.1.1

(a) Write one static route.

S 10.5.0.0 /16 is directly connected, FastEthernet0/0

(b) What is the metric of route?

O 192.168.110.0/24 [110/65] via 172.16.2.1, 00:00:03, Serial0/0/0

65

(c) What is administrative distance of route?

C 172.16.2.0/16 is directly connected, Serial0/0/0

0

(d) Write **two** routes that have been learned by a dynamic routing protocol.

D 172.16.3.0 [90/2172416] via 172.16.2.1, 00:00:18, serial0/0/0

R 192.168.120.0/24 [120/1] via 172.16.2.1, 00:00:18, serial0/0/0

(e) Write the route that will be preferred to access network 172.16.3.0/16?

D 172.16.3.0 [90/2172416] via 172.16.2.1, 00:00:18, serial0/0/0

Ερώτηση 2. **(Routing and Switching 2020)**

A)You are given two tables. The first one displays a number of commands and the second one the results when a command is issued. Correspond each of the results to the appropriate command of the table. Write in your answer book the letter (a)-(f) of each result, together with the number (1)-(8) of the command corresponding to the correct result.
Note: Two of the commands have no corresponding result and should not be used.
(0.5 pt for each answer)

Commands
(1) show run
(2) traceroute
(3) ping
(4) show ip route
(5) show vlan brief
(6) show access-lists
(7) show interfaces
(8) show ip dhcp binding

A/A	Results of command issued	Answer
(a)	VLAN Name Status Ports ---- -------------------------------- --------- ------------------------------- 1 default active Gig0/1, Gig0/2 10 Sales active Fa0/5, Fa0/6, Fa0/7, Fa0/8 20 Production active Fa0/10, Fa0/11, Fa0/12, Fa0/13 30 Marketing active Fa0/15, Fa0/16, Fa0/17, Fa0/18 40 HR active Fa0/20, Fa0/21, Fa0/22, Fa0/23	5
(b)	Current configuration : 607 bytes ! version 15.1 no service timestamps log datetime msec no service timestamps debug datetime msec no service password-encryption	1
(c)	Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area C 192.168.1.0/24 is directly connected, FastEthernet0/0 C 192.168.2.0/24 is directly connected, Serial0/0/0 R 192.168.3.0/24 [120/1] via 192.168.2.2, 00:00:10, Serial0/0/0 R 192.168.4.0/24 [120/1] via 192.168.2.2, 00:00:10, Serial0/0/0 R 192.168.5.0/24 [120/2] via 192.168.2.2, 00:00:10, Serial0/0/0	4
(d)	IP address Client-ID/ Hardware address Lease expiration Type 172.31.10.11 0000.0C92.D758 -- Automatic 172.31.20.11 0060.706D.2129 -- Automatic	8
(e)	Standard IP access list 10 10 deny host 192.168.1.100 20 permit 192.168.1.0 0.0.0.255 Standard IP access list 20 10 deny host 192.168.3.100 20 permit 192.168.3.0 0.0.0.255	6
(f)	Type escape sequence to abort. Tracing the route to 192.168.5.2 1 192.168.1.2 1 msec 0 msec 1 msec 2 192.168.2.2 6 msec 4 msec 6 msec 3 192.168.3.2 7 msec 6 msec 6 msec	2

Η ΕΡΩΤΗΣΗ ΣΥΝΕΧΙΖΕΤΑΙ ΣΤΗΝ ΕΠΟΜΕΝΗ ΣΕΛΙΔΑ

B) Fill in the blanks in the following statements using the words below. In each statement you can use one word. Not all of the words are going to be used. (0.5 pt for each answer)

UDP, modular, RIP, fixed, EIGRP, dynamic, restrict, static, ACL, inbound, outbound

(a) RIP is a routing protocol which build the routing path based only in hops count.

(b) Modular configuration switches offer more flexibility in expanding networks.

(c) In restrict security violation mode, the packets with unknown source address are dropped and a notification is sent.

(d) DHCPv4 messages are encapsulated within the UDP transport protocol.

(e) When applying an ACL to a router interface, outbound is the traffic that is leaving the router and going toward to the destination host.

(f) In order to filter routing traffic, the administrator can use ACL.

Ερώτηση 3. **(Routing Concepts) 2018a**

A) Correspond each of the descriptions listed in the following table on the right to the appropriate mode prompt of the table on the left. Write in your answer book the letter (a)-(f) of each description, together with the number (1)-(8) of the prompt corresponding to the correct description. Note: Two of the mode prompts have no corresponding description and should not be used. (0.5 pt for each answer)

Mode prompt
(1) Router(config)#
(2) Router>
(3) Router#
(4) Router(config-if)#
(5) Router(config-router)#
(6) Router(config-mode)#
(7) Router(privileged)>
(8) Router(config-line)#

A/A	Description	Answer
(a)	User EXEC mode.	2
(b)	Privileged EXEC mode.	3
(c)	Configuration mode.	1
(d)	Interface level within configuration mode.	4
(e)	Line level (vty, tty, async) within configuration mode.	8
(f)	Routing engine level within configuration mode.	5

B)(Routing concepts 2018a)

B) In the following table write the show command that will display what is explained in the "Description" column. (0.5 pt for each answer)

A/A	Description	Show command
(a)	Shows the configuration stored in RAM	show run
(b)	Shows the configuration stored in NVRAM	show start
(c)	Displays the routing table	show ip route
(d)	Provides a brief status of the interfaces on the router	\int brief
(e)	Displays detailed status and statistics for all interfaces on the router	show int
(f)	Displays version information for the hardware and firmware	show version

Ερώτηση 4. **(Routing concepts 2020)**

A) Four (4) PCs are connected to a switch. Their MAC address and the port of the switch that are connected is shown to the table below. Determine how the switch will forwards the frame and answer if the switch will add the source MAC address to the MAC table, for each of the two (2) scenarios below. (2 pts for each scenario)

PC	Port Connected	MAC Address
PC1	F0/1	0A
PC2	F0/2	0B
PC3	F0/3	OC
PC4	F0/4	OD

Scenario 1

MAC Table				Frame	
F0/1	F0/2	F0/3	F0/4	Destination MAC	Source MAC
0A	0B			OD	OA

a)Write the ports where the Switch will forward the frame: F0/2, F0/3, F0/4

b)The switch will add the source MAC to the MAC table (YES / NO): NO

Scenario 2

MAC Table				Frame	
F0/1	F0/2	F0/3	F0/4	Destination MAC	Source MAC
	0B		0D	OD	OA

c)Write the ports where the Switch will forward the frame: F0/4

d)The switch will add the source MAC to the MAC table (YES / NO): YES

B) For each of the following components specify where they are stored (**Flash**, **RAM**, **NVRAM** or **ROM**) on the router. (0.5 pt for each answer)

Components	Location where the components are stored
Routing Table and Running Configuration file	RAM
Normal IOS image	Flash
POST diagnostic software and Minimum IOS	ROM
Startup Configuration file	NVRAM

Ερώτηση 5. **(ACL) 2020**

A) For each access list entry, determine the action that will be taken (permit or deny) when applied to the comparison address provided. (0.5 pt for each answer)

	Access List Entry (ACE)	**Comparison Address**	**Permit or Deny**
(a)	Access-list 1 permit 192.168.100.100 0.0.0.255	192.168.100.99	Permit
(b)	Access-list 2 permit 192.168.100.64 0.0.0.63	192.168.100.127	Permit
(c)	Access-list 3 permit 192.16.100.128 0.0.255.255	192.168.100.128	Deny
(d)	Access-list 4 permit 198.168.100.64 0.255.255.255	199.168.100.65	Deny
(e)	Access-list 5 permit 192.168.100.100 0.0.0.255	192.169.100.99	Deny
(f)	Access-list 6 permit 192.168.100.64 0.0.0.63	192.168.100.128	Deny

B) Write down the address that are permitted in each Access Control Entry: (0.5 pt for each answer)

a) Access-list 10 permit 192.168.100.100 0.0.0.255

From IP address: 192.168.100.0 to IP address: 192.168.100.255

b) Access-list 20 permit 192.168.100.64 0.0.0.15

From IP address: 192.168.100.64 to IP address: 192.168.100.79

c) Access-list 30 permit 192.168.100.64 0.0.0.3

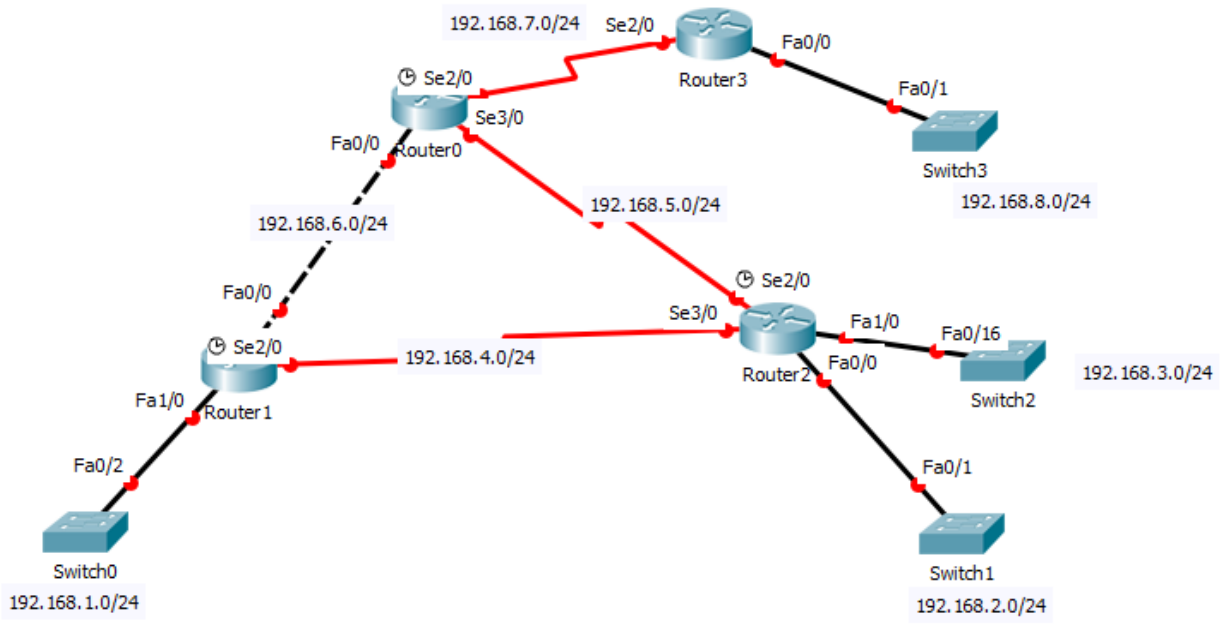
From IP address: 192.168.100.64 to IP address: 192.168.100.67

ΜΕΡΟΣ Γ (40 Μονάδες)

Να απαντήσετε σε όλες τις ερωτήσεις. Η κάθε ερώτηση βαθμολογείται με δέκα (10) μονάδες.

Ερώτηση 1. **(Static and Dynamic Routing) 2020**

The interfaces of the following network are all properly configured.



(a) Write the necessary commands to configure RIP on Router2 so that:

- Advertise the networks.
- LAN interfaces should be set to passive. LAN interfaces are connected to f0/0 and f1/0.
- Auto summarization must be off.

(4 pts)

Router2(config)# router rip
Router2(config)# version 2 (προαιρετικό επειδή δεν ζητείται από την άσκηση)
Router2(config-router)#network 192.168.2.0
Router2(config-router)#network 192.168.3.0
Router2(config-router)#network 192.168.4.0
Router2(config-router)#network 192.168.5.0
Router2(config-router)#no auto-summary
Router2(config-router)#passive-interface f0/0
Router2(config-router)#passive-interface f1/0

(b) Configure a default route on Router3. (2 pt)

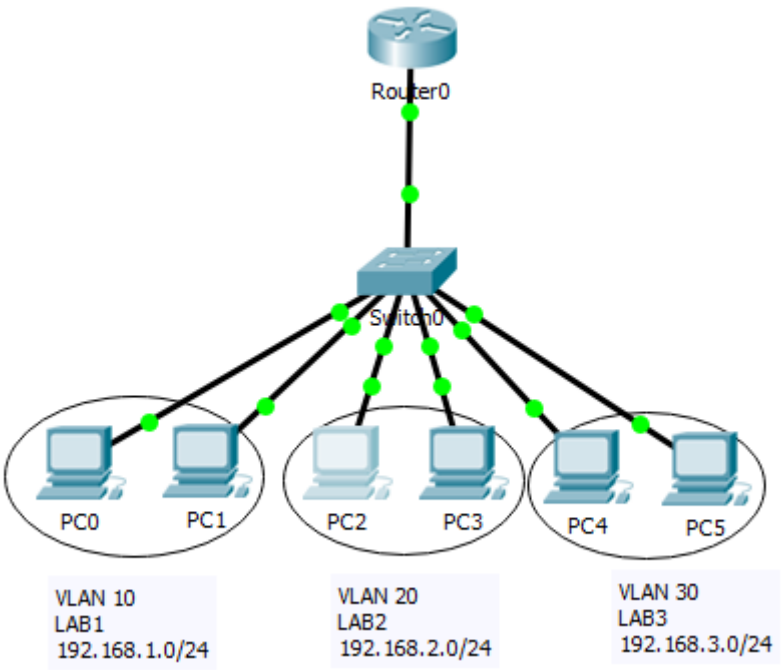
Router3(config)# ip route 0.0.0.0 0.0.0.0 s2/0

(c) Configure static routing on Router 1 for networks 192.168.2.0/24 and 192.168.8.0/24 (4 pts)

Router1(config)# ip route 192.168.2.0 255.255.255.0 s2/0 f0/0
Router1(config)# ip route 192.168.8.0 255.255.255.0 f0/0 s2/0

Ερώτηση 2. **(VLAN) 2020**
Consider the following network (topology and address table)

Topology



Address Table

Device	IP Address	Subnet Mask	Default Gateway	VLAN	Port on Switch0
PC0	192.168.1.10	255.255.255.0	N/A	10	F0/1
PC1	192.168.1.20	255.255.255.0	N/A	10	F0/2
PC2	192.168.2.10	255.255.255.0	192.168.2.1	20	F0/3
PC3	192.168.2.20	255.255.255.0	192.168.2.1	20	F0/4
PC4	192.168.3.10	255.255.255.0	192.168.3.1	30	F0/5
PC5	192.168.3.20	255.255.255.0	192.168.3.1	30	F0/6

VLAN 10 and VLAN 20 are already properly configured.

(a) Write the necessary commands on Switch0 to configure VLAN30. The name for VLAN30 is LAB3. Assign the appropriate ports to VLAN30 and change the switchport mode accordingly.

(3 pts)

Switch0(config)# vlan 30
Switch0(config-vlan)#name LAB3
Switch0(config-vlan)#exit
Switch0(config-if-range)#int range f0/5-6
Switch0(config-if-range)#switchport mode access
Switch0(config-if-range)#switchport access vlan 30

Η ΕΡΩΤΗΣΗ ΣΥΝΕΧΙΖΕΤΑΙ ΣΤΗΝ ΕΠΟΜΕΝΗ ΣΕΛΙΔΑ

(b) Configure port G0/1 on Switch0 as a trunk port. (1 pt)

Switch0(config)#int g0/1
Switch0(config-if)#switchport mode trunk

(c) Configure sub-interfaces on Router0 using the 802.1Q encapsulation in order VLAN20 and VLAN30 can communicate. Router0 is connected to Switch0 on interface G0/0 (4 pts)

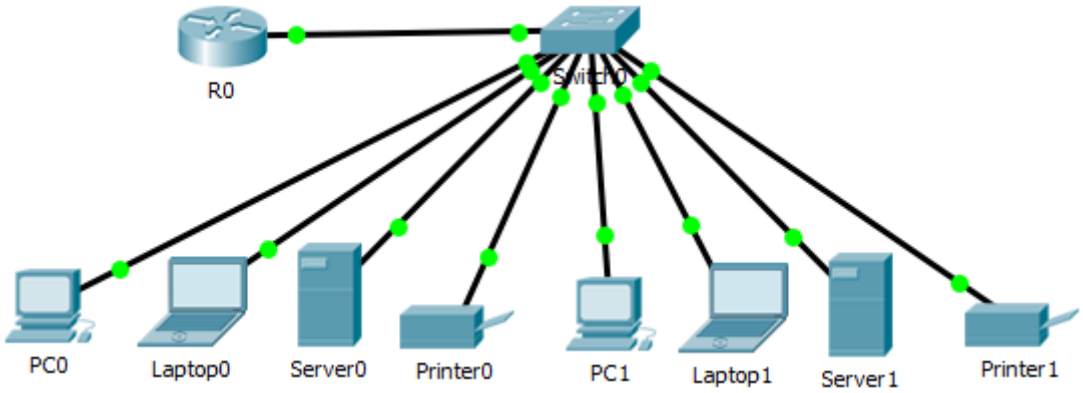
Router0(config)# int g0/0.20
Router0(config-subif)#encapsulation dot1Q 20
Router0(config-subif)#ip address 192.168.2.1 255.255.255.0
Router0(config-subif)#int g0/0.30
Router0(config-subif)#encapsulation dot1Q 30
Router0(config-subif)#ip address 192.168.3.1 255.255.255.0
Router0(config-if)#int g0/0
Router0(config-if)#no sh

(d) Re-assign the ports of VLAN10 to VLAN1 and delete VLAN10. (2 pts)

Switch0(config)# int range f0/1-2
Switch0(config-if)#no switchport access vlan
Switch0(config-if)#exit
Switch0(config)#no vlan 10

Ερώτηση 3. **(DHCP 2020)**

Consider the following local area network.



Addressing Table

Device	IPv4 Address	Subnet Mask	Default Gateway
PC0	DHCP Assigned	DHCP Assigned	DHCP Assigned
PC1	DHCP Assigned	DHCP Assigned	DHCP Assigned
Laptop0	DHCP Assigned	DHCP Assigned	DHCP Assigned
Laptop1	DHCP Assigned	DHCP Assigned	DHCP Assigned
Server0	192.168.100.100	255.255.255.0	192.168.100.1
Server1	192.168.100.200	255.255.255.0	192.168.100.1
Printer0	192.168.100.110	255.255.255.0	192.168.100.1
Printer1	192.168.100.210	255.255.255.0	192.168.100.1

(a) Configure the excluded IPv4 addresses. (6 pts)

Configure **Router0** to exclude the first 20 addresses and the last 10 addresses from the 192.168.100.0. Exclude also the IP addresses of Server0, Server1, Printer0 and Printer1. All other addresses should be available in the DHCP address pool.

R0(config)#

R0(config)#ip dhcp excluded-address 192.168.100.100

R0(config)#ip dhcp excluded-address 192.168.100.110

R0(config)#ip dhcp excluded-address 192.168.100.200

R0(config)#ip dhcp excluded-address 192.168.100.210

Η ΕΡΩΤΗΣΗ ΣΥΝΕΧΙΖΕΤΑΙ ΣΤΗΝ ΕΠΟΜΕΝΗ ΣΕΛΙΔΑ

(b) Create a DHCP pool on R0. (4 pts)

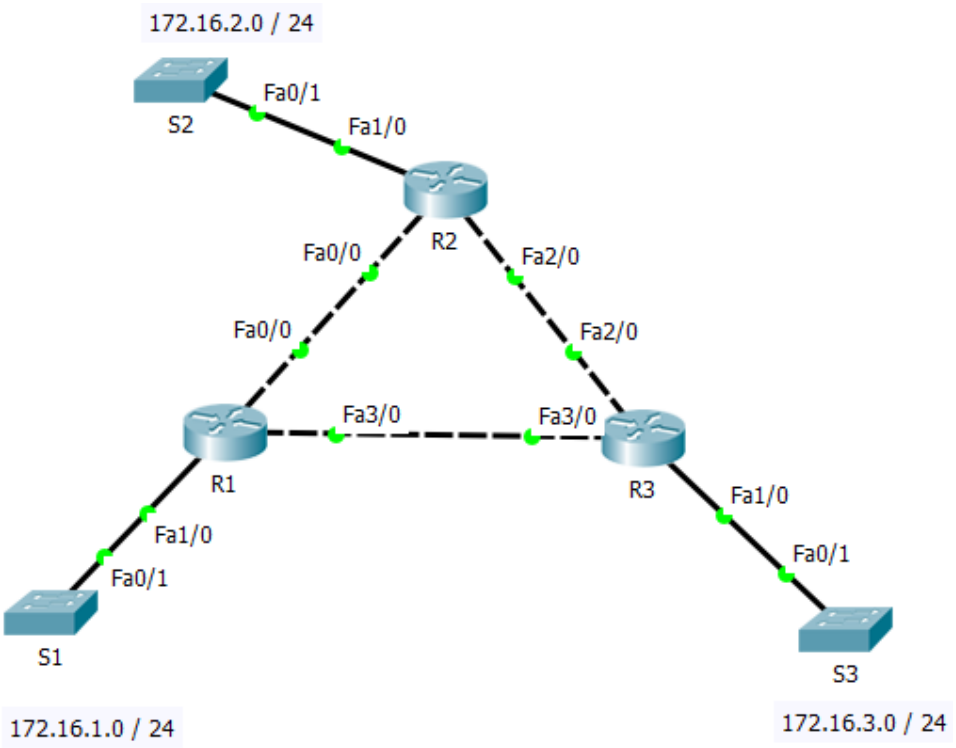
i. Create a DHCP pool named **`R0-POOL`** (case-sensitive).

ii. Configure the DHCP pool to include the network address of R0, the default gateway, and the IP address Server1 as the DNS server.

```
R0(config)#ip dhcp pool R0-POOL
R0(dhcp-config)#network 192.168.100.0 255.255.255.0
R0(dhcp-config)#default-router 192.168.100.1
R0(dhcp-config)#dns-server 192.168.100.200
```

Ερώτηση 4. **(ACL) 2020**

Write the necessary commands to perform the following configurations, based on the network shown in the following diagram:



(a)The hosts with IP address 172.16.1.100 and 172.16.1.101 from LAN 172.16.1.0/24 should not be able to access 172.16.2.0/24 LAN. All the remaining hosts on the 172.16.1.0/24 network should be permitted access to 192.168.2.0/24 LAN. All hosts from LAN 172.16.3.0/24 should be permitted access to 192.168.2.0/24 LAN. Place the access list in R2. (6 points)

R2(config)#access-list 10 deny host 172.16.1.100

R2(config)#access-list 10 deny host 172.16.1.101

R2(config)#access-list 10 permit 172.16.1.0 0.0.0.255

R2(config)#access-list 10 permit 172.16.3.0 0.0.0.255

R2(config)#int fa1/0

R2(config-if)#ip access-group 10 out

(b)The hosts from 172.16.3.0/24 LAN from IP address 172.16.3.64 to 172.16.3.127 should not be able to access any other network. All the remaining hosts on 172.16.3.0/24 network should be permitted access to all other networks. Place the access list in R3. (4 points)

R3(config)#access-list 30 deny 172.16.3.64 0.0.0.63

R3(config)#access-list 30 permit 172.16.3.0 0.0.0.255

R3(config)#int fa1/0

R3(config-if)#ip access-group 30 in

ΤΕΛΟΣ ΕΞΕΤΑΣΗΣ