ΥΠΟΥΡΓΕΙΟ ΠΑΙΔΕΙΑΣ, ΑΘΛΗΤΙΣΜΟΥ ΚΑΙ ΝΕΟΛΑΙΑΣ

ΔΙΕΥΘΥΝΣΗ ΜΕΣΗΣ ΕΚΠΑΙΔΕΥΣΗΣ

ΕΝΙΑΙΕΣ ΤΕΛΙΚΕΣ ΑΠΟΛΥΤΗΡΙΕΣ ΓΡΑΠΤΕΣ ΕΞΕΤΑΣΕΙΣ 2025-2026

Γ΄ ΤΑΞΗΣ ΛΥΚΕΙΟΥ

ΗΜΕΡΟΜΗΝΙΑ: 21 Μαΐου 2026

ΕΞΕΤΑΖΟΜΕΝΟ ΜΑΘΗΜΑ: ΔΙΚΤΥΑ

Α΄ ΣΕΙΡΑ

ΚΩΔΙΚΟΣ ΜΑΘΗΜΑΤΟΣ: Γ060

ΣΥΝΟΛΙΚΗ ΔΙΑΡΚΕΙΑ ΓΡΑΠΤΗΣ ΕΞΕΤΑΣΗΣ: 90 λεπτά

ΠΡΟΤΕΙΝΟΜΕΝΕΣ ΛΥΣΕΙΣ

ΟΙ ΠΡΟΤΕΙΝΟΜΕΝΕΣ ΛΥΣΕΙΣ ΑΠΟΤΕΛΟΥΝΤΑΙ ΑΠΟ ΔΩΔΕΚΑ (12) ΣΕΛΙΔΕΣ

ΜΕΡΟΣ Α (30 μονάδες)
Να απαντήσετε και στις είκοσι (20) ερωτήσεις πολλαπλής επιλογής. Υπάρχει μόνο μια σωστή απάντηση σε κάθε ερώτηση. Η κάθε ερώτηση βαθμολογείται με 1½ μονάδα.

Ερώτηση 1. **(ch1. 2026) A**

What type of Ethernet cable would be used to connect one switch to another switch when neither switch supports the auto-MDIX feature?

(a) Coaxial
(b) Straight-through
(c) Rollover
(d) Crossover

Ερώτηση 2. **(ch1. 2026) A**

What advantage does SSH offer over Telnet?

(a) Encryption
(b) Username and password authentication
(c) More connection lines
(d) Connection-oriented services

Ερώτηση 3. **(ch3,4. 2026) A**

Which type of VLAN is assigned to 802.1Q trunk ports to carry untagged traffic?

(a) Management
(b) Default
(c) Data
(d) Native

Ερώτηση 4. **(ch3,4. 2026) A**

What happens to a port that is associated with VLAN 10 when the administrator deletes VLAN 10 from the switch?

(a) The port goes back to the default VLAN.
(b) The port creates the VLAN again.
(c) The port automatically associates itself with the native VLAN.
(d) The port becomes inactive.

Ερώτηση 5. **(ch3 2026) A**

In which memory location are the VLAN configurations of normal range VLANs stored on a Catalyst switch?

(a) NVRAM
(b) ROM
(c) Flash
(d) RAM

Ερώτηση 6. **(ch5. 2026) A**

What device is elected by the Spanning Tree Algorithm? All other switches determine a single least-cost path to this device.

(a) Default gateway
(b) Root bridge
(c) Dedicated bridge
(d) Core switch

Ερώτηση 7. **(ch5. 2026) A**

By default (without any configuration on a switch), what will determine which switch is the root bridge?

(a) The bridge priority
(b) The MAC address of the switch
(c) The extended system ID
(d) The bridge ID

Ερώτηση 8. **(ch6. 2026) A**

Which function is provided by EtherChannel?

(a) Dividing the bandwidth of a single link into separate time slots
(b) Creating one logical link by using multiple physical links between two LAN switches
(c) Enabling traffic from multiple VLANs to travel over a single Layer 2 link
(d) Spreading traffic across multiple physical WAN links

Ερώτηση 9. **(ch6. 2026) A**

What will happen if a network administrator puts a port that is part of an EtherChannel bundle into a different VLAN than the other ports in that bundle?

(a) The EtherChannel bundle will stay up only if LACP is used.
(b) The EtherChannel bundle will stay up only if PAgP is used.
(c) The EtherChannel will fail.
(d) The EtherChannel bundle will stay up if either PAgP or LACP is used.

Ερώτηση 10. **(ch7. 2026) A**

As a DHCPv4 client lease is about to expire, what is the message that the client sends the DHCP server?

(a) DHCPDISCOVER
(b) DHCPREQUEST
(c) DHCPACK
(d) DHCPOFFER

Ερώτηση 11. **(ch7. 2026) A**

If more than one DHCP server is available on the local network, in which order will DHCP messages be sent between a host and a DHCP server?

(a) Acknowledgment, request, offer, discover
(b) Request, discover, offer, acknowledgment
(c) Request, acknowledgment, discover, offer
(d) Discover, offer, request, acknowledgment

Ερώτηση 12. **(ch9. 2026) A**

In an FHRP/HSRP virtual router group, which device is assigned the role of the alternate default gateway, ready to take over if the active router fails??

(a) Layer 3 switch
(b) Default gateway
(c) Standby router
(d) Virtual router

Ερώτηση 13. **(ch10. 2026) A**

Which attack encrypts the data on hosts in an attempt to extract a monetary payment from the victim?

(a) DDoS
(b) Ransomware
(c) Malware
(d) Data breach

Ερώτηση 14. **(ch10. 2026) A**

What is the behaviour of a switch as a result of a successful MAC address table attack?

(a) The switch will shut down.
(b) The switch interfaces will transition to the error-disabled state.
(c) The switch will drop all received frames.
(d) The switch will forward all received frames to all other ports within the VLAN.

Ερώτηση 15. **(ch.14 2026) A**

What table does a router use to determine how to forward an IP packet?

(a) Routing table
(b) MAC address table
(c) ARP table
(d) Neighbor cache

Ερώτηση 16. **(ch14 2026) A**

What action will a router take on a packet with a destination IP address that is on a remote network?

(a) It will forward the packet to a next-hop router.
(b) It will forward the packet directly to the device with the destination IP address of the packet.
(c) It will forward the packet to an Ethernet switch.
(d) It will drop the packet.

Ερώτηση 17. **(CCNA3 – Ch2 - Dynamic Routing OSPF 2026) A**

The following three networks are directly connected to an OSPF router; 192.168.0.0/24, 192.168.1.0/24, and 192.168.2.0/24. Which OSPF network command would advertise only the 192.168.1.0 network to neighbour's?

(a) Router(config-router)# network 192.168.1.0 0.0.0.255 area 0
(b) Router(config-router)# network 192.168.0.0 0.0.15.255 area 0
(c) Router(config-router)# network 192.168.1.0 0.0.0.0 area 0
(d) Router(config-router)# network 192.168.1.0 255.255.255.255 area 0

Ερώτηση 18. **(CCNA 3 ch.2 - Dynamic Routing OSPF 2026) A**

A router with two LAN interfaces, two WAN interfaces, and one configured loopback interface is operating with OSPF as its routing protocol. What does the router OSPF process use to assign the router ID?

(a) The IP address of the interface that is configured with priority 0
(b) The highest IP address that is configured on the WAN interfaces
(c) The loopback interface IP address
(d) The highest IP address on the LAN interfaces

Ερώτηση 19. **(CCNA3-ch. 4- ACL Concepts 2026) A**

What are the permit or deny statements in an ACL called?

(a) Arbitrary statements
(b) Access control entries
(c) Content control entries
(d) Control statements

Ερώτηση 20. **(CCNA3-ch. 4 ACL Concepts 2026) A**

How many total ACLs (both IPv4 and IPv6) can be configured on an interface?

(a) 2
(b) 8
(c) 4
(d) 1

Μέρος Β (30 μονάδες)

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

Ερώτηση 1. **(CCNA 3 chapter2) 2026 A**

For each given network, identify and specify the corresponding subnet mask and wildcard mask. (1 point for each address)

Network	Decimal Subnet Mask	Wildcard Mask
(a) 172.17.2.128/25	255.255.255.128	0.0.0.127
(b) 192.168.200.128/20	255.255.240.0	0.0.15.255
(c) 172.30.0.0/16	255.255.0.0	0.0.255.255

Ερώτηση 2. **(Chapter 14) 2026 A**

A network administrator has executed the command **show ip route** on a router. The following line is part of the output generated: (1 point for each statement)

O 192.168.2.0/24 [110/65] via 192.168.12.2, 00:32:33, Serial0/0/0

Fill in the blanks in the following statements:

(a) This route was set up using the OSPF routing protocol
(b) The value 110 is called the AD - Administrative Distance
(c) This route tells the router where to forward packets for network 192.168.2.0/24
(d) The next hop interface address is 192.168.12.2
(e) The value 65 is called the metric
(f) The exit interface is Serial0/0/0

Ερώτηση 3. **(CCNA3 – Chapter 4-5 ACL 2026) A**

For each access control entry, identify the action (permit or deny) that will be executed when the provided comparison address is applied. (1 point for each correct answer)

	Access Control Entry (ACE)	Comparison Address	Permit or Deny
(a)	Access-list 1 permit 172.16.0.0 0.0.255.255	172.16.55.3	Permit
(b)	Access-list 2 permit 10.0.0.0 0.0.0.255	10.0.1.5	Deny
(c)	Access-list 3 permit 192.168.5.0 0.0.0.255	192.168.5.200	Permit
(d)	Access-list 4 permit 192.168.10.32 0.0.0.15	192.168.10.40	Permit
(e)	Access-list 5 permit 192.168.20.128 0.0.0.63	192.168.20.200	Deny
(f)	Access-list 6 permit 10.10.10.0 0.0.0.7	10.10.10.6	Permit

Ερώτηση 4. **(CCNA2 – Ch. 5, Ch. 7, Ch. 10, Ch. 11, CCNA3-Ch. 4) 2026 A**

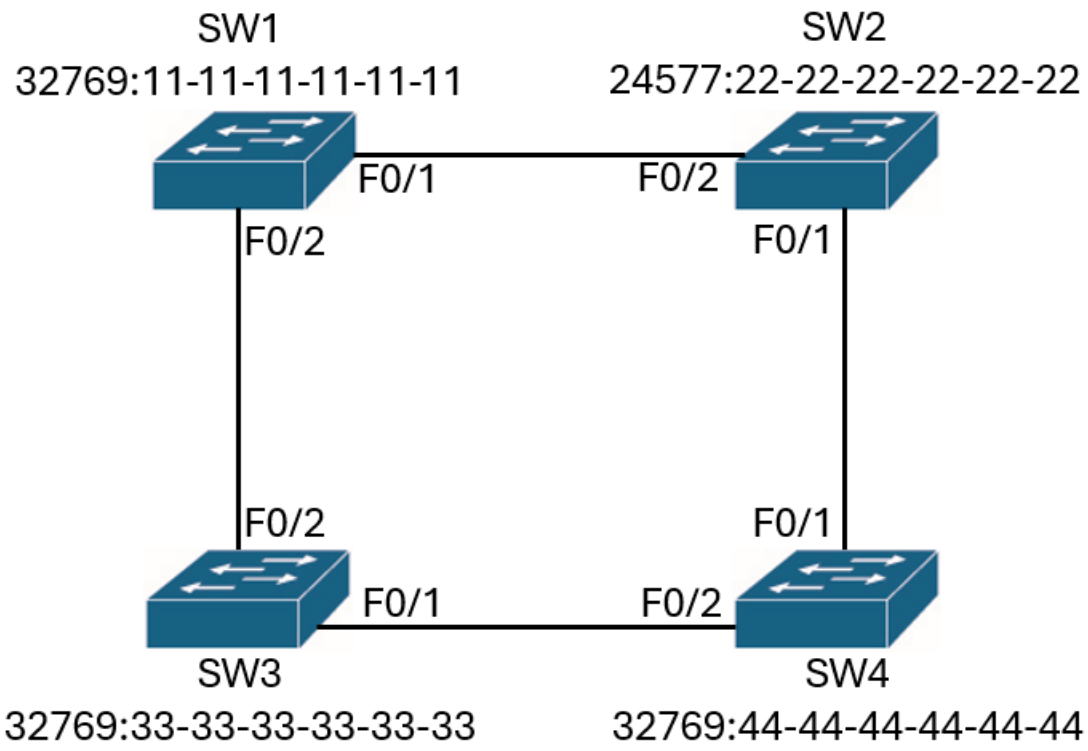
Indicate whether the following statements are True or False.

(1 point for each correct answer)

(a)	STP is a Layer 3 loop prevention protocol for IP networks.	FALSE
(b)	When a DHCPv4 client lease is about to expire, the message that the client sends the DHCP server is a DHCPREQUEST.	TRUE
(c)	Without STP on the Ethernet LAN, an unknown unicast type of frame could cause a catastrophic loop in the network.	TRUE
(d)	After a successful MAC address table attack, the switch will drop all received frames.	FALSE
(e)	A switch port configured for port security is in the err-disabled state. To re-enable the port the administrator must issue the shutdown command followed by the no shutdown command on the interface.	TRUE
(f)	A standard ACL processes entries from top to bottom. When a packet matches an ACE, the ACL immediately permits or denies it and does not check any remaining ACEs.	TRUE

Ερώτηση 5. **(Chapter 5) 2026 A**

Consider the following network. The network has four switches (SW1, SW2, SW3, SW4) connected with each other. STP is running on all the switches. The Bridge ID (priority and mac address) are shown on the following exhibit. (1 point for each correct answer)



SW2 has been elected as root bridge

(priority 24577 and MAC Address 22-22-22-22-22-22). Write the state of each interface (**Root port**, **Designated** or **Alternate – Blocked**).

Switch	**Interface**	**State**
SW1	(a) F0/1	Root port
	(b) F0/2	Designated
SW3	(c) F0/1	Blocked
	(d) F0/2	Root port
SW4	(e) F0/1	Root port
	(f) F0/2	Designated

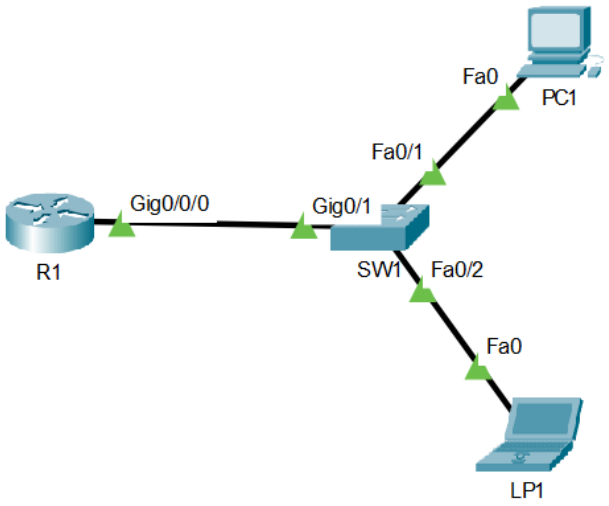
ΜΕΡΟΣ Γ (40 Μονάδες)

Να απαντήσετε σε όλες τις ερωτήσεις. Η κάθε ερώτηση βαθμολογείται με είκοσι (20) μονάδες.

Ερώτηση 1. **(Chapter 2, 3, 4,) 2026**

The network topology and addressing table are given below. Follow the instructions provided.

Network Topology



Addressing Table

Device	Interface	IP Address	Subnet Mask	Default Gateway
R1	G0/0/0.10	192.168.10.1	255.255.255.0	N/A
	G0/0/0.20	192.168.20.1	255.255.255.0	N/A
PC1	NIC	192.168.10.3	255.255.255.0	192.168.10.1
LP1	NIC	192.168.20.3	255.255.255.0	192.168.20.1

(a) Create and name the following VLANs on switch SW1. (3 pts)

(0.5 point for each correct answer)

VLAN 10: Management
VLAN 20: Sales

SW1> enable
SW1# configure terminal
SW1(config)# vlan 10
SW1#(config-vlan)# name Management

SW1(config)# vlan 20
SW1#(config-vlan)# name Sales

(b) Configure interfaces Fa0/1 and Fa0/2 on SW1 as access ports and assign Fa0/1 to Management and Fa0/2 to sales. (3 pts)

(0.5 point for each correct answer)

SW1(config)# int fa0/1
SW1(config-if)#switchport mode access
SW1(config-if)#switchport access vlan 10
SW1(config)#int fa0/2
SW1(config-if)#switchport mode access
SW1(config-if)#switchport access vlan 20

(c) Verify the VLAN assignments to interfaces on SW1 by executing a single command only. (1 pt)

SW1# show vlan (brief) or show run

(d) Configure Gig0/1 interface on switch SW1 as trunk. (1 pt)

(0.5 point for each correct answer)

SW1(config)# int Gig0/1
SW1(config-if)#switchport mode trunk

(e) Check the trunk configuration on SW1 using only one command. (1 pt)

SW1# show interface trunk
or
SW1# show interfaces G0/1 switchport or show run

(f) Test the connectivity between PC1 and R1 with just one command. (1 pt)

C:\USERS\PC1> ping 192.168.10.1

(g) Disable the unused interfaces Fa0/3-24 on switch SW1. (1 pt)

(0.5 point for each correct answer)

SW1(config)# int range Fa0/3-24
SW1(config-if-range)#shutdown

(h) Save the current configuration. (1 pt)

SW1# copy running-config startup-config

(i) Configure sub-interfaces on R1 using the 802.1Q encapsulation to achieve communication between VLAN 10 and VLAN 20. Activate the interfaces as needed. R1 is connected with SW1 using interface G0/0/0. (8 pts)

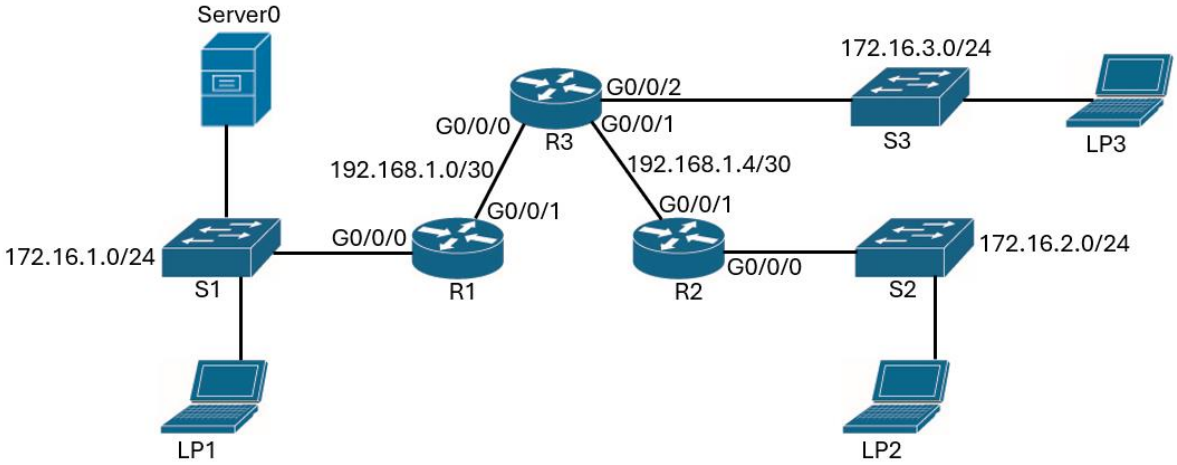
(1 point for each correct answer)

R1(config)# int g0/0/0.10
R1(config-subif)#encapsulation dot1Q 10
R1(config-subif)#ip address 192.168.10.1 255.255.255.0
R1(config-subif)#int g0/0/0.20

R1(config-subif)#encapsulation dot1Q 20
R1(config-subif)#ip address 192.168.20.1 255.255.255.0
R1(config-if)#int g0/0/0
R1(config-if)#no shutdown

Ερώτηση 2. **(CCNA 3 ch2..4 CCNA 2 ch. 7, CCNA 2 ch 15) 2025 A**

The network topology and addressing table are given below. Follow the instructions provided.



Addressing Table

Device	Interface	IPv4 Address	Subnet Mask	Default Gateway
R1	G0/0/0	172.16.1.1	255.255.255.0	N/A
	G0/0/1	192.168.1.1	255.255.255.252	N/A
R2	G0/0/0	172.16.2.1	255.255.255.0	N/A
	G0/0/1	192.168.1.5	255.255.255.252	N/A
R3	G0/0/0	192.168.1.2	255.255.255.252	N/A
	G0/0/1	192.168.1.6	255.255.255.252	N/A
	G0/0/2	172.16.3.1	255.255.255.0	N/A

(a) Configure R1 to act as DHCPv4 Server for 172.16.1.0/24 network. (4 pts)

(1 point for each correct answer)

i. Exclude the first 12 addresses of 172.16.1.0/24 network

ii. Define the pool name as LAN1

iii. Specify the network that DHCP is supporting

iv. Configure the default gateway address (172.16.1.1)

```
R1(config)# ip dhcp excluded-address 172.16.1.1 172.16.1.12
R1(config)#ip dhcp pool LAN1
R1(dhcp-config)#network 172.16.1.0 255.255.255.0
R1(dhcp-config)#default-router 172.16.1.1
```

(b) Use the following requirements to configure OSPFv2 dynamic routing on router R2:

i. Process ID 10

ii. Router ID 2.2.2.2

iii. Area 0

iv. Network address and appropriate network wildcard mask for each interface

v. G0/0/0 interface set to passive (5 pts)

(1point for each correct answer)

```
R2(config)# router ospf 10
R2(config-router)# router-id 2.2.2.2
R2(config-router)# network 172.16.2.0 0.0.0.255 area 0
R2(config-router)# network 192.168.1.4 0.0.0.3 area 0
R2(config-router)# passive-interface G0/0/0
```

(c) Configure the fully specified routes on R2 for every remote network. (3 pts)

(1 point for each correct answer)

```
R2(config)# ip route 172.16.1.0 255.255.255.0 G0/0/1 192.168.1.6
R2(config)#ip route 172.16.3.0 255.255.255.0 G0/0/1 192.168.1.6
R2(config)#ip route 192.168.1.0 255.255.255.252 G0/0/1 192.168.1.6
```

(d) Configure the recursive (next-hop) static routes on R3 for every remote network. (2 pts)

(1 point for each correct answer)

```
R3(config)# ip route 172.16.1.0 255.255.255.0 192.168.1.1
R3(config)#ip route 172.16.2.0 255.255.255.0 192.168.1.5
```

(e) Configure a recursive (next hop) static default route on R1. (1 pt)

R1(config)# ip route 0.0.0.0 0.0.0.0 192.168.1.2

(f) Configure and apply the numbered standard ACL 1. (3 pts)

The ACL should block all traffic from network 172.16.1.0/24 to network 172.16.2.0/24. It must also block traffic from both hosts 172.16.3.25 172.16.3.45. All other traffic to 172.16.2.0 network should be allowed. Place the ACL on router R2. Choose the appropriate interface and direction. (0.5 point for each correct answer)

R2(config)# access-list 1 deny host 172.16.3.25
R2(config)# access-list 1 deny host 172.16.3.45
R2(config)# access-list 1 deny 172.16.1.0 0.0.0.255
R2(config)# access-list 1 permit any
R2(config)# interface G0/0/1
R2(config-if)# ip access-group 1 in
or
R2(config)# interface G0/0/0
R2(config-if)# ip access-group 1 out

(g) Configure and apply the numbered standard ACL 2. (2 pts)

The ACL should block host 172.16.1.10 from accessing any other network except from 172.16.1.0/24. Place ACL on router R1 Choose the appropriate interface and direction.

(0.5 point for each correct answer)

R1(config)# access-list 2 deny host 172.16.1.10
R1(config)# access-list 2 permit any
R1(config)# interface G0/0/1
R1(config-if)# ip access-group 2 out
or
R1(config)# interface G0/0/0
R1(config-if)# ip access-group 2 in

ΤΕΛΟΣ ΠΡΟΤΕΙΝΟΜΕΝΩΝ ΛΥΣΕΩΝ