

ΓΡΑΠΤΕΣ ΠΡΟΑΓΩΓΙΚΕΣ ΕΞΕΤΑΣΕΙΣ ΜΑΪΟΥ - ΙΟΥΝΙΟΥ

ΣΕΙΡΑ Α

ΜΑΘΗΜΑ: Δίκτυα Cisco

ΗΜΕΡΟΜΗΝΙΑ: 29/05/2013

ΤΑΞΗ: Β' Λυκείου

ΔΙΑΡΚΕΙΑ: 2 Ώρες

Το εξεταστικό δοκίμιο αποτελείται από εννιά (9) σελίδες.

Ονοματεπώνυμο:

Τμήμα:

Αριθμός:

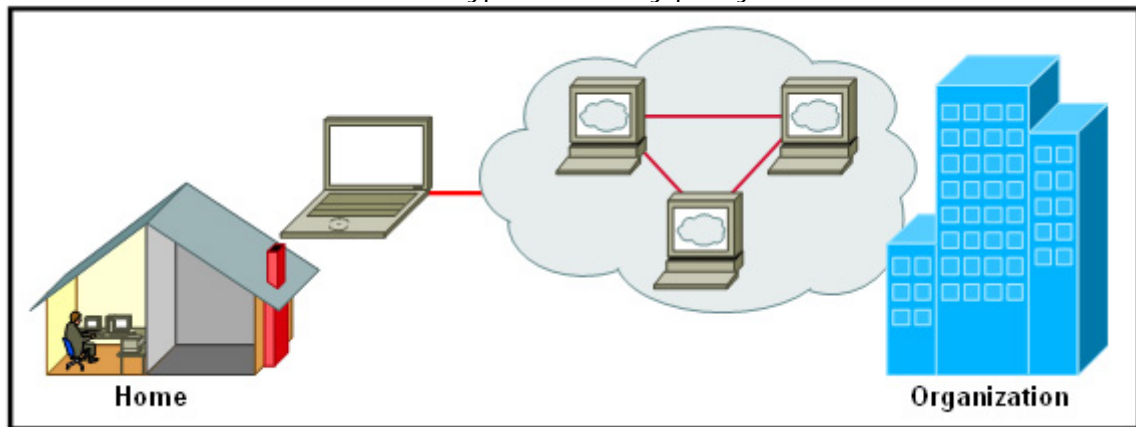
Βαθμός:

Part A

Answer all questions by circling each correct answer. Each question earns 3 points. There are questions with more than one correct answer. **(Total Points 45)**

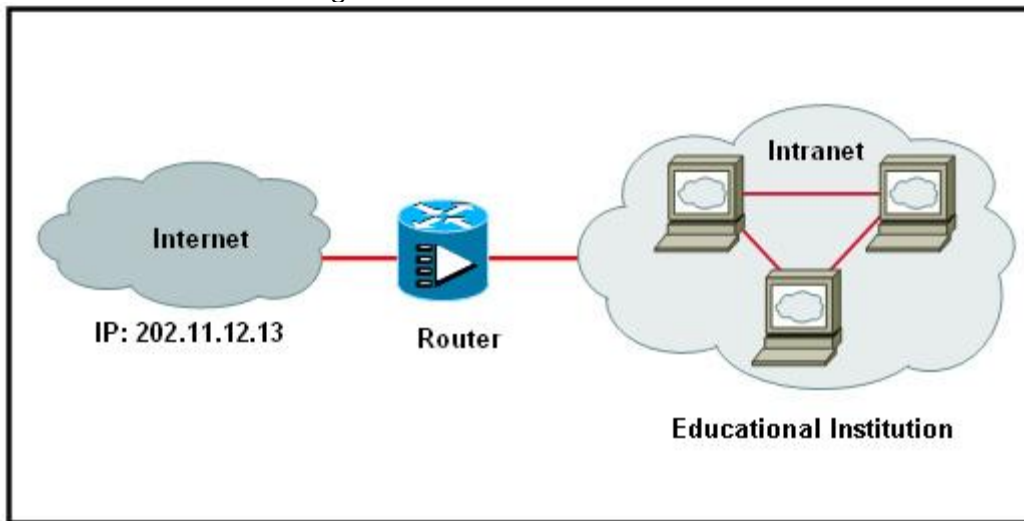
1. Which term is associated with logical addressing?
 - a) IP addresses
 - b) port addresses
 - c) physical addresses
 - d) Media Access Control addresses
2. A computer joins the network and announces itself to all hosts on the LAN. What type of message does the computer send out?
 - a) broadcast
 - b) simulcast
 - c) multicast
 - d) unicast
3. Which two transport layer protocols enable hosts to communicate and transfer data? (Choose two.)
 - a) DHCP
 - b) ICMP
 - c) IP
 - d) TCP
 - e) UDP
4. Which two automatic addressing assignments are supported by DHCP? (Choose two.)
 - a) local server address
 - b) subnet mask
 - c) default gateway address
 - d) physical address of the recipient
 - e) physical address of the sender
5. What are two characteristics of a MAC address? (Choose two.)
 - a) It indicates the physical location of the host within the network.
 - b) It is dynamically assigned by a DHCP server.
 - c) It is displayed in HEX characters.
 - d) It is a physical address.
 - e) It is cable-based.
6. What does the term "attenuation" mean in data communication?
 - a) loss of signal strength as distance increases
 - b) time for a signal to reach its destination
 - c) leakage of signals from one cable pair to another
 - d) strengthening of a signal by a networking device
7. Which two statements are true about network applications? (Choose two.)
 - a) Microsoft Word is an example of a network application.
 - b) Network applications are accessible from a remote computer.
 - c) Network applications are installed on a special type of computer that supports only network applications.
 - d) Network applications are installed on a network server.
 - e) Network applications are accessible by one computer at a time.
8. A network technician is required to provide access to the Internet for a large company. What is needed to accomplish this task?
 - a) ISP
 - b) private IP addresses for each host
 - c) static IP addresses for each host
 - d) DHCP server

9. A network designer is working with a small company to determine the network type best suited to the needs of the company. Which two characteristics could the designer use to describe a peer-to-peer network to the owner of the company? (Choose two.)
- a) central administration
 - b) easy to install
 - c) low cost
 - d) scalable
 - e) secure
10. What are two advantages of purchasing a custom-built computer? (Choose two.)
- a) usually a lower cost
 - b) no waiting period for assembly
 - c) user can specify higher performance components
 - d) supports higher-end graphics and gaming applications
 - e) fewer components to replace
11. What is the purpose of pop-up blocker software?
- a) It detects and removes spyware.
 - b) It detects and removes viruses.
 - c) It prevents the display of advertisement windows.
 - d) It removes unwanted e-mail.
12. Refer to the exhibit. The security policy of an organization allows employees to connect to the office intranet from their homes. Which type of security policy is this?



- a) acceptable use
 - b) incident handling
 - c) network maintenance
 - d) remote access
13. Which card would be required for a PC to exchange information with other PCs on a LAN?
- a) NIC
 - b) video card
 - c) sound card
 - d) internal modem
14. What two pieces of information should a help desk technician document while troubleshooting connectivity issues with an end user? (Choose two.)
- a) the CPU clock speed of the computer
 - b) the number of network jacks that are in the room
 - c) if the user can ping the default gateway address
 - d) if the word processing software is installed correctly
 - e) whether the PC uses dynamic or static IP addressing

15. Refer to the exhibit. An educational institution needs to connect PC systems that use private IP addressing to the Internet. They have multiple systems that need to access the Internet, but were only able to purchase one public IP address. What should be activated on the Linksys integrated router to achieve this goal?



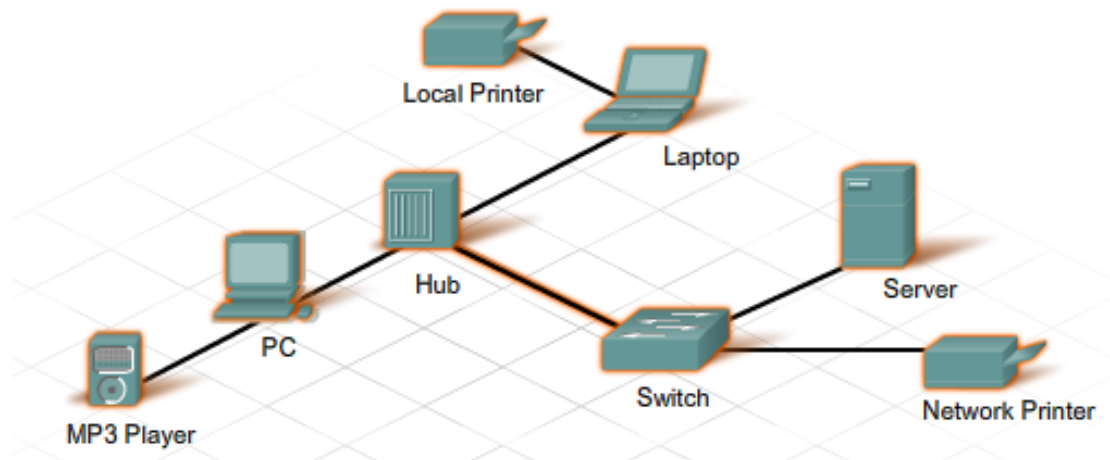
- a) authentication
- b) DHCP
- c) encryption
- d) firewall
- e) NAT
- f) WEP

Part B

Answer all questions.

(Total Points 29)

1. Using the figure below, put the displayed equipment into the 3 categories displayed in the table, by marking your selection in the correct box. **(4 Points)**

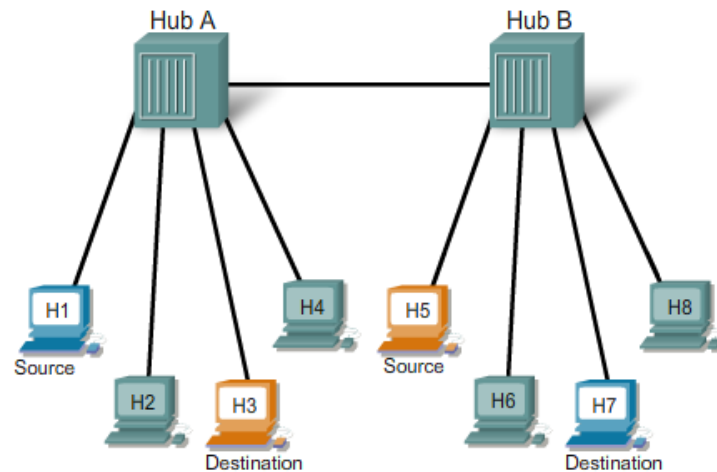


EQUIPMENT	PERIPHERAL	HOST	NETWORK DEVICE
PC			
HUB			
LOCAL PRINTER			
MP3 PLAYER			
LAPTOP			
SWITCH			
NETWORK PRINTER			
SERVER			

2. Decide if the following statements are true or false, by writing the correct answer next to the statement in the column provided. **(10 Points)**

S/N	Statement	Answer
1	Fiber optic cables are made of copper.	
2	Cable suitable for data transmission, known as CAT5, has 6 pairs of wires, making it more resistant to interference.	
3	IPv4 uses 32 bits rather than the 128 bits used in IPv6.	
4	The crossover cable is used in order to connect similar devices.	
5	A short occurs when the copper conductors touch each other.	
6	LANs operate over a small geographical area.	
7	A switch provides better security than a router.	
8	The subnet mask shows which part of the IP address is network and which part is host.	
9	TCP is a 'best effort' delivery system that does not require acknowledgment of receipt.	
10	Destination ports that are associated with common network applications are identified as well-known ports. These ports are in the range of 1024 to 49151.	

3. Answer the 2 questions according to the diagram below, by checking your answer in the circle provided. **(4 Points)**



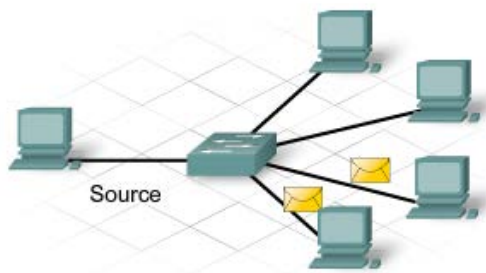
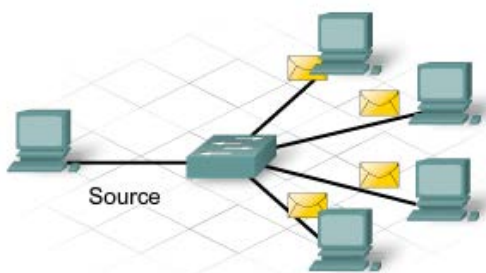
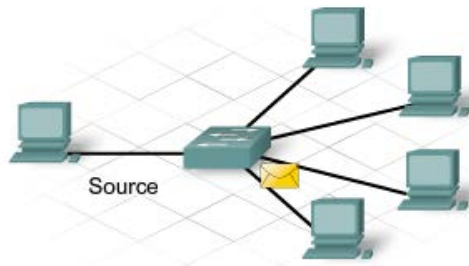
If Host3 sends a message to Host6, which host devices will receive the message?

- ☐ Host 6 only.
- ☐ All hosts connected to HubA only.
- ☐ All hosts connected to HubB only.
- ☐ All hosts on the network.

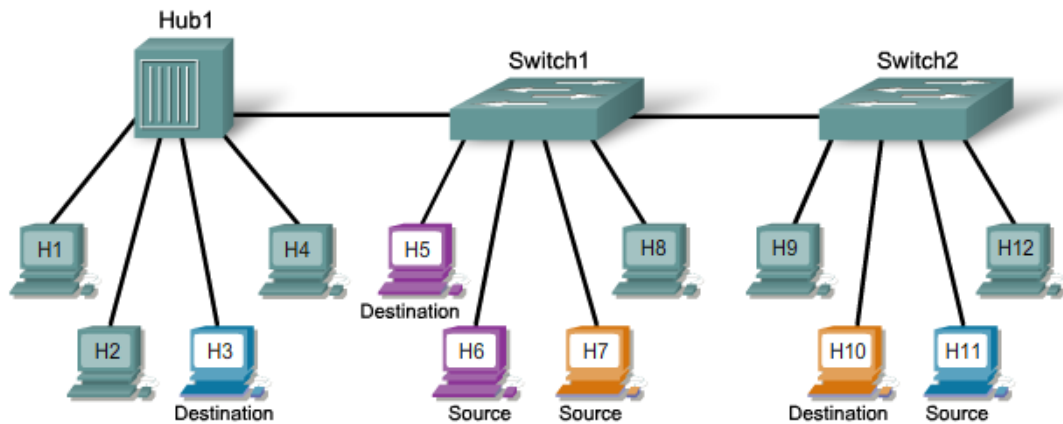
In this network, how many collision domains exist?

- ☐ There is 1 collision domain.
- ☐ There are 2 collision domains.
- ☐ There are 8 collision domains.
- ☐ There are no collision domains.

4. Identify the type of communication that the source uses in each of the following diagrams below, by writing your answer in the space provided. **(3 Points)**



5. Answer the 4 questions according to the diagram below, by checking your answer in the circle provided. (8 Points)



If Host9 sends a message to Host6, and the destination MAC address is in the MAC table for both switch1 and switch2, which host devices will receive the message?

- ☐ only Host6
- ☐ all hosts connected to Switch1
- ☐ all hosts connected to Hub1 and hosts connected to Switch1
- ☐ all hosts on the network

In this network, how many collision domains exist?

- ☐ There is 1 collision domain.
- ☐ There are 2 collision domains.
- ☐ There are 3 collision domains.
- ☐ There are 10 collision domains.
- ☐ There are 12 collision domains.

If Host8 sends a message to Host1, and the destination MAC address is in the switch MAC table, which host devices will receive the message?

- ☐ only Host1
- ☐ all hosts connected to Hub1
- ☐ all hosts connected to Switch1
- ☐ all hosts connected to Hub1 and hosts connected to Switch1
- ☐ all hosts on the network

What occurs if Host9 and Host12 send a message across Switch2 at the same time?

- ☐ The two frames will collide and the switch will forward a garbled message to all hosts on the network.
- ☐ The two frames will collide and the switch will forward a garbled message to the source and intended destination hosts only.
- ☐ The two frames will be forwarded to the correct destination device without a collision occurring.
- ☐ Two hosts cannot send information across the switch at the same time because the hosts must wait for a "request for data" frame from the switch.

Part C

Answer all questions.

(Total Points 26)

1. Given the following IP addresses, write down the Class in which they belong. **(3 Points)**

IP ADDRESS	CLASS
105.110.41.0	
191.17.19.24	
192.62.111.1	
195.18.196.0	
115.114.130.0	
153.110.181.4	

2. Given the following IP addresses, write down the Network portion. **(3 Points)**

IP ADDRESS	NETWORK PORTION
168.10.13.0	
36.16.2.0	
211.18.56.0	
129.14.130.4	
193.168.1.1	
62.121.156.0	

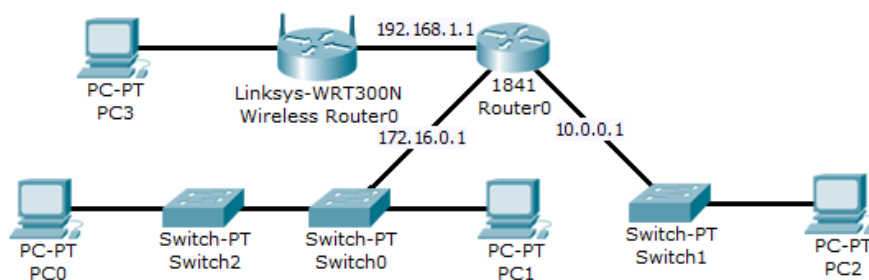
3. Given the following IP addresses, write down the Host portion. **(3 Points)**

IP ADDRESS	HOST PORTION
123.103.45.253	
161.10.22.94	
75.23.45.21	
187.34.12.89	
190.112.177.73	
215.14.143.155	

4. Given the following IP addresses, write down the Default Subnet Mask. **(3 Points)**

IP ADDRESS	DEFAULT SUBNET MASK
189.11.10.50	
110.115.34.9	
164.63.230.250	
91.249.234.191	
220.250.91.99	
192.11.35.105	

5. In the figure below the administrator wants to connect all the equipment and assign the correct IP addresses to the PCs. The administrator created 3 networks and assigned to the 3 interfaces of the 1841 router0 the addresses 192.168.1.1, 172.16.0.1 and 10.0.0.1 as shown below.



- a) What type of wire is required for the connections indicated below? (5 Points)

From	To	Type of Wire
Linksys Wireless Router0 Ethernet	PC3	
Switch0	Switch2	
1841 Router0	Switch1	
1841 Router0	Linksys Wireless Router0 Internet	
Switch1	PC2	

- b) Complete the following table based on the above diagram. (9 Points)

Device Name	Possible IP Address	Default Gateway	Default Subnet Mask
PC1			
PC2			
PC3			

Ο Διευθυντής

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