Advanced Networking | Question Bank | Questions

#	Question
1	How do 4G LTE routers connect to the WAN?
2	SFP port is a slot on a network device into which small form-factor pluggable (SFP) transceivers are inserted. Given the statements below, answer by True or False. (i) SFP sockets can interface between two network devices using a **fiber optic**. True or False? (ii) SFP sockets can interface between two network devices using a **copper networking cable**. True or False? (iii) SFP is hot-plugged. True or False?
3	Consider the network diagram below.  Assume you are logged in to the router R. Write a command to configure a static route to the network 192.168.1.0/24
4	Group the following routing protocols as classless and classful RIP v1, IGRP, RIP v2, EIGRP, OSPF, IS-IS, BGP
5	The term EGP is rarely used, and most engineers simply use the term BGP. Explain briefly.
6	Below is a list of some Autonomous Systems (AS) operating in Rwanda with their ASN (AS Numbers)

#	Question

ASN	NAME	NUM IPS
AS37228	KT RWANDA NETWORK Ltd	77,824
AS36890	MTN Rwandacell	69,632
AS36934	Broadband Systems Corporation	65,536
AS327707	Airtel Rwanda Ltd	17,664
AS37006	Liquid Telecommunication Rwanda Limited	17,152
AS37619	Broadband Systems Corporation	16,896
AS37654	Rwanda Ministry of Education	16,384
AS37124	Airtel Rwanda Ltd	3,328
AS22690	Axiom Networks Ltd	3,072
AS328385	Rwanda Revenue Authority (RRA)	2,048

Among IGP and EGP, which protocol is used? Explain your choice.
(i) AS37228 routing to AS36890
(ii) AS36934 routing within itself.

<table>
<tr><th>#</th><th>Question</th></tr>
<tr><td>7</td><td>Which statement describes a characteristic of standard IPv4 ACLs?
A) They are configured in the interface configuration mode.
B) They can be configured to filter traffic based on both source IP addresses and source ports.
C) They can be created with a number but not with a name.
D) They filter traffic based on source IP addresses only.</td></tr>
<tr><td>8</td><td>Assume you need an ACL number 10 to match networks in the range 192.168.16.0/24 to 192.168.31.0/24.

(i) Write the IP address and the subnet mask of the summarized network range.
(ii) Calculate the wildcard mask.
(iii) Write the ACE to permit traffic from the given network range.</td></tr>
<tr><td>9</td><td>Compare LAN to VLAN vis-à-vis the abbreviation, cost, latency, devices used, packed advertisement, and the efficiency.</td></tr>
<tr><td>10</td><td>Given the table below. Fill in the column called ”command” to Create VLANs (VLANs 10 and 20) on the switch. Note that the first row is given as an example.
<table>
<tr><th>Description</th><th>Command</th></tr>
<tr><td>Enter global configuration mode</td><td>Switch# conf t</td></tr>
<tr><td>Create VLAN 10</td><td></td></tr>
<tr><td>Give a name to VLAN 10</td><td></td></tr>
<tr><td>Create VLAN 20</td><td></td></tr>
<tr><td>Give a name to VLAN 20</td><td></td></tr>
<tr><td>Exit the VLAN config. mode</td><td></td></tr>
<tr><td>Check if the VLANs were created</td><td></td></tr>
</table>
</td></tr>
</table>

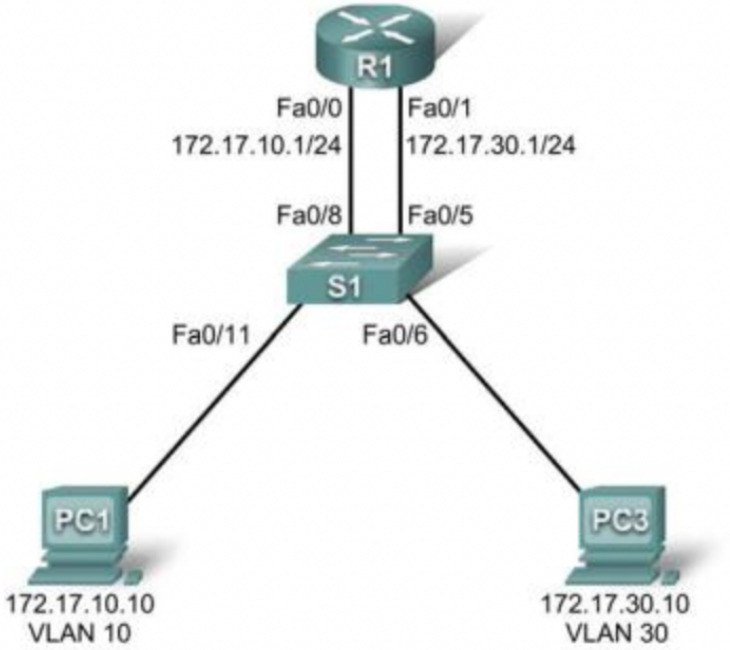
#	Question
11	Given the table below. Fill in the column called **”command”** to assign the VLANs to the switchport. Note that the first row is given as an example.

Description	**Command**
Enter global configuration mode	**Switch# conf t**
Enter interface config. mode for fa0/2	
Set the port to access mode	
Assign VLAN 10 to interface fa0/2	
Exit the interface	

#	Question

Enter interface configuration for fa0/3	
Set the port to access mode	
Assign VLAN 20 to interface fa0/3	
Exit the interface	

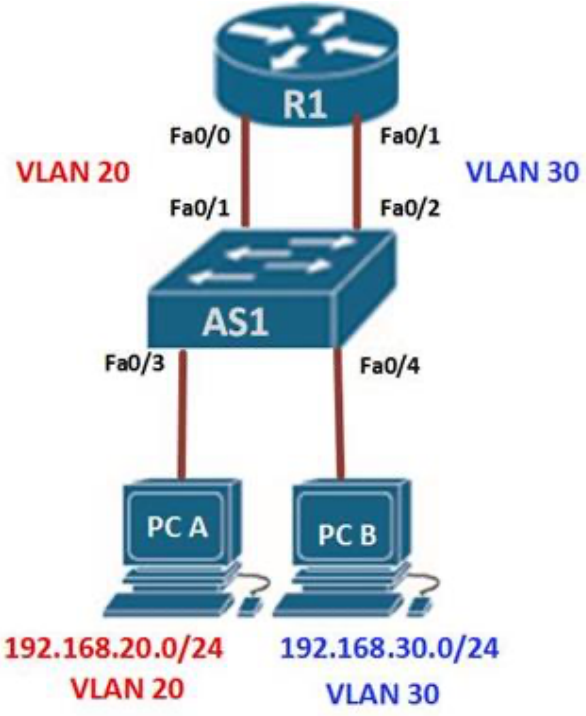
#	Question
12	Refer to the topology diagram below.



Fill the addressing table

Device	Interface	IP Address	Subnet Mask	Default Gateway
R1	Fa0/0			
R1	Fa0/1			
PC1	NIC			
PC3	NIC			

#	Question
13	Refer to the topology diagram below:

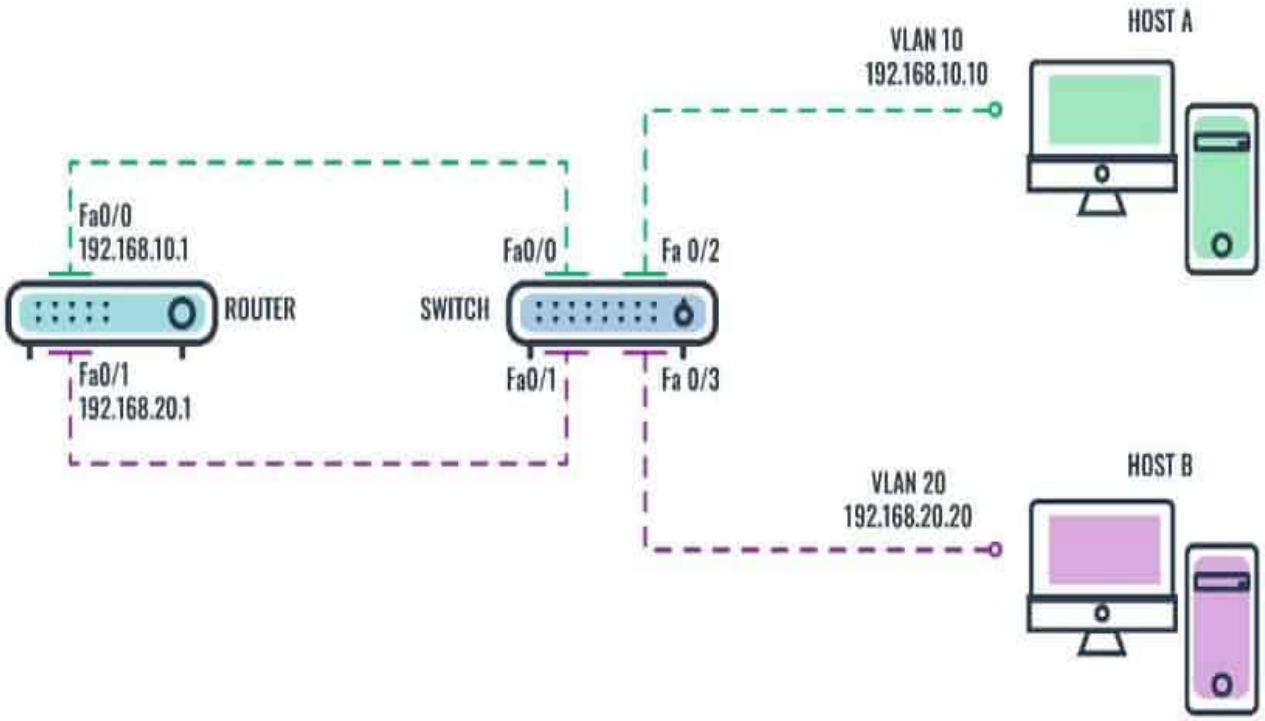


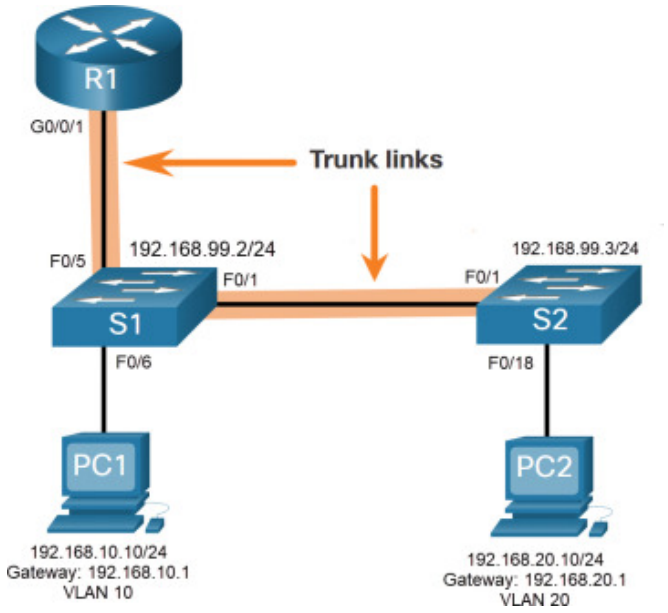
Configure the router and the switch and then test the connectivity

(i) Fill the addressing table

Device	Interface	IP Address	Subnet Mask	Default Gateway
PC1	NIC			
PC3	NIC			
R1	Fa0/0			
R1	Fa0/1			

#	Question
	(ii) Complete the switch configuration by filling the (…) **AS1(config)# interface fastEthernet 0/1** **AS1(config-if)# switchport mode access** **AS1(config-if)# switchport access vlan .....** **AS1(config-if)# exit** **AS1(config)# interface fastEthernet 0/2** **AS1(config-if)# switchport mode .....** **AS1(config-if)# switchport access vlan .....** **AS1(config-if)# exit** (iii) Complete the router configuration by filling the (…) **R1(config)#interface fastethernet 0/0** **R1(config-if)# ip address ....** **R1(config-if)# no shutdown** **R1(config-if)# exit** **R1(config)# interface fastethernet 0/1** **R1(config-if)# ip address ....** **R1(config-if)# no shutdown** **R1(config-if)# exit**

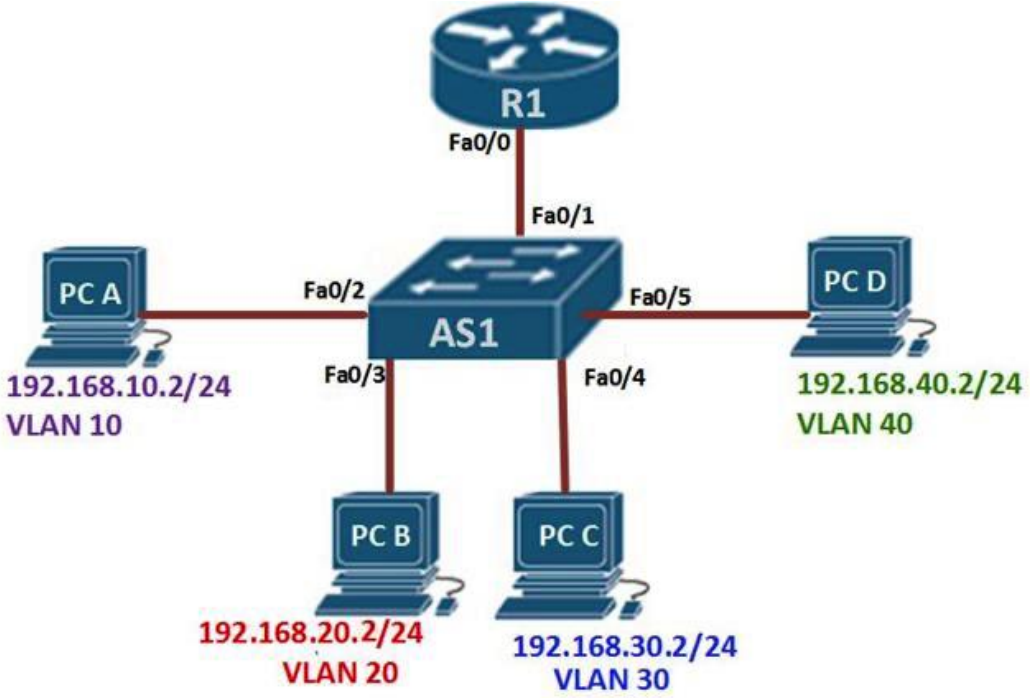
#	Question
14	Consider the diagram below. If Host A on VLAN 10, wants to send a message to Host B on VLAN 20, list all possible steps that would follow. 

#	Question
15	Refer to the topology diagram below:  The R1 GigabitEthernet 0/0/1 interface is logically divided into three subinterfaces. (i) Fill the table of subinterfaces below. **Subinterface** | **VLAN** | **IP Address** G0/0/1.10 | ..... | ...../24 G0/0/1.20 | ..... | ...../24 G0/0/1.30 | 99 | ...../24 (ii) Create VLANs. The first command is an example.

#	Question

Description	Command
Enter global configuration mode	**S1# conf t**
Create VLAN 10	
Give a name to VLAN 10	
Create VLAN 20	
Give a name to VLAN 20	
Create VLAN 30	
Give a name to VLAN 30	
Exit the VLAN config. mode	
Check if the VLANs were created	

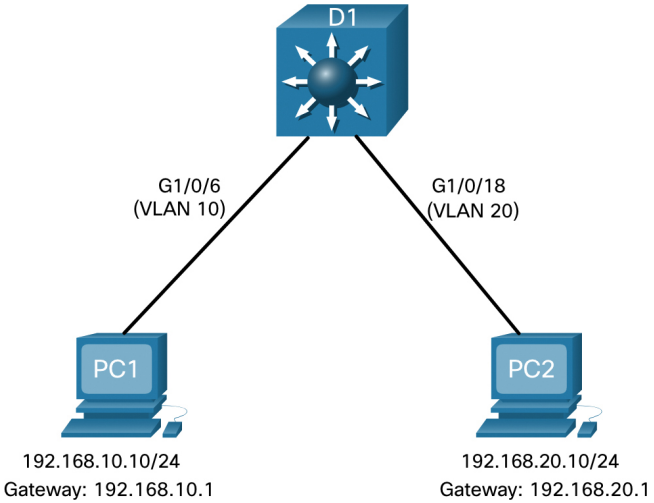
#	Question
16	Refer to the following topology diagram:



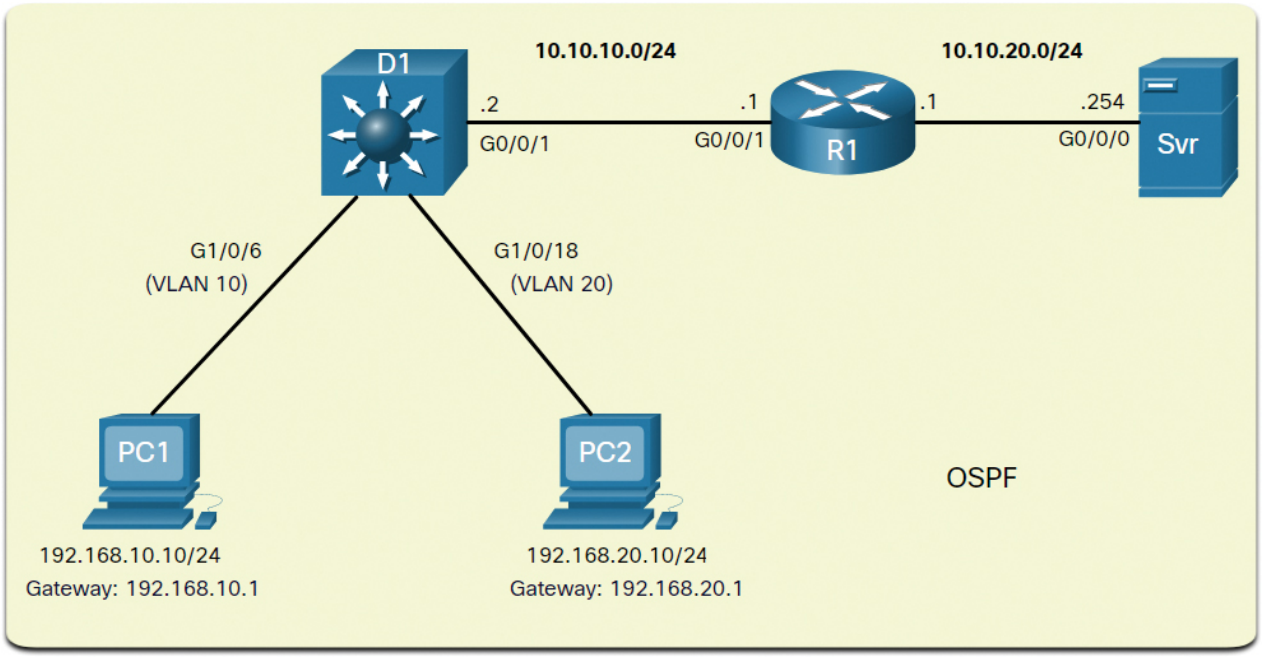
(i) Fill the addressing table. Hint: The IP address of the default gateway ends with .1

Device	**Interface**	**IP Address**	**Subnet Mask**	**Default Gateway**
PC A	NIC			
PC B	NIC			
PC C	NIC			
PC D	NIC			

#	Question
	(ii) An IP address has to be assigned to the interface Fa0/0 on the routerR1. True or false? If true, then assign that IP address. (iii) On the switch AS1, assume you are in the global configuration mode, define as a trunk link the interface Fa0/1 connected to the router R1 in order to allow traffic from all VLANs to get to the router R1 using that interface. **AS1# conf t** **AS1(config)# .....** **AS1(config-if)# .....** (iv) On the R1, configure subinterfaces for respective VLANs. **R1(config)# interface fastethernet0/0.10** **R1(config-subif)# encapsulation dot1Q 10** **R1(config-subif)# ip address ....** **R1(config-subif)# exit** **R1(config)# interface fastethernet0/0.20** **R1(config-subif)# encapsulation ....** **R1(config-subif)# ip address ....** **R1(config-subif)# exit** **R1(config)# interface fastethernet0/0.30** **R1(config-subif)# encapsulation ....** **R1(config-subif)# ip address ....** **R1(config-subif)# exit** **R1(config)# interface fastethernet0/0.40** **R1(config-subif)# encapsulation ....** **R1(config-subif)# ip address ....** **R1(config-subif)# exit** **R1(config) # interface fastethernet 0/0** **R1(config-if)# no shutdown** **R1(config-if)# end** (v) Verify with one command that the router R1 is connected to all four routes

#	Question
	R1#
17	Given the following topology diagram:  (i) Complete the table below **D1 Interface** | **VLAN** | **IP Address** G1/0/6 | ..... | ...../24 G1/0/18 | ..... | ...../24 (ii) Create vlan 10 and vlan 20 and rename them LAN10 and LAN20 respectively **D1(config)# .....** **D1(config-vlan)# .....** **D1(config-vlan)# .....** **D1(config-vlan)# .....** **D1(config-vlan)# exit** **D1(config)#**

18 Given the following topology diagram:

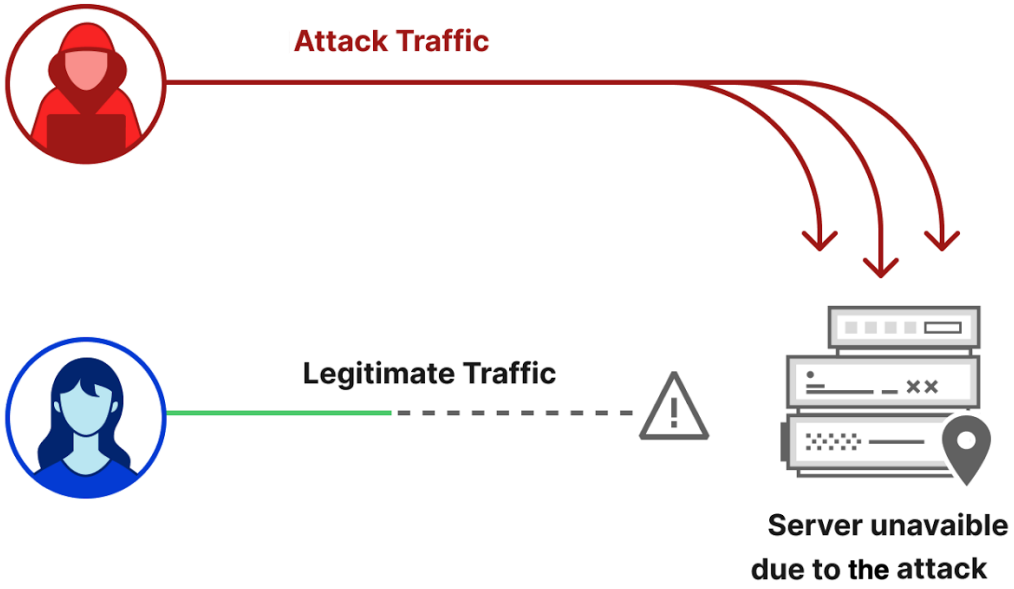


Assume inter-VLAN has been successfully implemented on D1, the G0/0/1 interface of R1 has also been configured and enabled. And additionally, R1 is using OSPF to advertise its two networks, 10.10.10.0/24 and 10.20.20.0/24.

Configure the interface G0/0/6 as a routed port.

Description	**Command**
Enter interface configuration for GigabitEthernet0/0/1	**D1(config)# .....**
Describe the interface	**D1(config-if)# .....**
Change the interface from being a Layer 2 interface to a layer 3 interface	**D1(config-if)# .....**

#	Question	
	Set the IP address for the interface	**D1(config-if)# .....**
	Bring up the interface	**D1(config-if)# .....**
	Exit	**D1(config-if)# .....**
	Enable IP routing	**D1(config)# .....**
19	How does an eavesdropping attack occur?	
20	How does HTTPS apply security?	
21	Given the following command ssh pi@192.168.0.102 (i) List its three main parts (ii) Explain each part	

#	Question
22	Refer to the below diagram.  (i) What type of attack is described by the diagram? A) Eavesdropping B) Hijacking C) Man-in-the-middle D) Denial of service E) Management interface exploits F) Encryption cracking G) Authentication cracking H) MAC spoofing I) Peer-to-peer attacks

#	Question
	J) Social engineering (ii) Explain your choice
23	List at least FOUR key tips to help secure the home Wi-Fi network against unauthorized access.
24	Wired Equivalent Privacy (WEP) and Wi-Fi Protected Access (WPA) are encryption standards designed for securing wireless networks. WEP is an older standard and due to its vulnerabilities is not recommended. WPA was designed as an interim replacement for WEP, and WPA2 was introduced as the official standard offering the strongest security of the three. True or False?
25	What wireless security protocol has been discouraged in favor of newer standards due to known vulnerabilities resulting from implementation flaws?
26	Which of the following cryptographic algorithms is the least vulnerable to attacks? A) AES B) DES C) RC4 D) 3DES
27	What is RAID setup?
28	What is data migration?
29	What is a headless server?
30	List at least 4 types of data migration.