1-A) -(8 points):

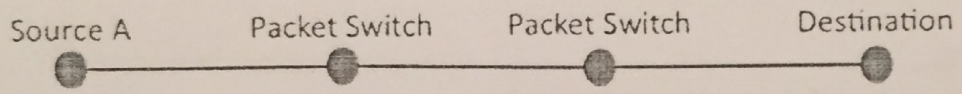
Through two block diagrams explain the difference between Space division and time division switching.

Q1-B)-(7 points)

What are the advantages and disadvantages of packet switching over circuit switching?

Q2) (12 points)

Consider a message that is 8Mbits long that has to be sent from source to destination as shown in the below figure. Suppose each link has a maximum capacity of 2 Mbps. Ignore propagation, queueing and processing delays.



a. [4 points] Consider sending the message from source to destination without message segmentation. Keeping in mind that each switch uses store-and-forward packet switching, low long does it take to move the message from source host to destination host?
b. [6 points] Now suppose that the message is segmented into 4,000 packets, which each packet being 2,000 bits long. How long does it take to move the file from source host to destination host when message segmentation is used?

Is this better or worse time/result than in a?

c. [2 points] What are potential drawbacks of message segmentations?

Q 3-A) (8 points)

It is required to build a time switch using multi-stage configuration (STS). The first S stage is 8x8 and the second S stage is 8x8 with 128 channel on each link.

a) - Sketch the switch configuration, and calculate the switch complexity and it's blocking probability if channel utilization is 0.3.

b) - If the complexity of the STS is increased to 1029.12 due to increasing time stage sub-blocks, find the new blocking probability (everything else stay the same)

Q 3-B) (4points)

Explain differences between folded and non-folded network.

Q 3-C) (4 points)

What is meant by common control switching system and direct control switching systems give an examples for each type?

Q 4-A) (8 points)

List the major difference in single stage, two stage and three stage Networks. Also discuss their blocking characteristics.

Q4-B) (4points)

How ATM technology supports real time communication?

Q4- C)-(5 points)

Explain with neat diagram the major components of a packet switch and list their functions?

ملاحظة :

نتيجة إجابات الأسئلة الآتية ستكون ضمن درجات الامتحان النصفي الثاني وكذلك الامتحان النهائي

" Q2-B, Q3-B and Q4-A " -

College of Electronic Technology - Tripoli

Department of Communication Engineering

Final Exam: Spring Semester — 7th Semester

Subject Wireless Communication System — Examiner: Dr. Masoud Eddaghel

Date: 26th of July 2018 — Examination time: 120 Minutes

Q.1/ [8 marks] Explain

a) MIMO system.
b) Alamouti STC Technique.
c) Narrowband channel.
d) Wideband channel.

Q.2/ [24 marks] For a BFSK, 8ASK and 16QAM modulation schemes, operating with an information bit rate 1024 *kbps*.

a) Draw the BASK modulator and coherent mutilator.
b) Find the symbol rate (baud) for all schemes.
c) Find the BW for all schemes.
d) Find the BW efficiency for all schemes.
e) Which modulation scheme is not recommended to use in wireless communications? Why?
f) Draw the constellation points for all schemes.
g) If the channel BW=10kHz, find the Nyquist capacity for all modulation schemes.
h) Find SNR, which is needed for each modulation scheme.

Q.3/ [14 marks] A MIMO system contains of **2** transmit antennas and **5** receive antennas.

a) Draw the block diagram of this system.
b) Draw the schematic diagram of this system over flat fading channel.
c) Find the received equations r.
d) Find out the channel matrix H and H^H.
e) Find $H^H H$.

f) Find estimated received signals.

g) What is the diversity gain of this system?

Q.4/[14 marks] A 4G wireless communication system based on an OFDM system with 1024 subcarriers uses IDFT/DFT algorithm and exploits 16QAM modulation scheme.

a) Draw the simple block diagram of this OFDM system (Transceiver).

b) Why OFDM chosen as multiple access in 4G wireless communication systems?

c) What is the function of cyclic prefix in OFDM system?

d) What is the condition of cyclic prefix?

e) Find the number of arithmetic operations, which are needed in this system.

f) What is the main disadvantage of this system?

g) Find the maximum bit rate of this system.

Good luck

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College of Electronic Technology - Tripoli

College of Electronic Technology - Tripoli
Department of Communication Engineering

Final Exam: Fall Semester — **7th Semester**
Subject: Wireless Communication System — **Examiner: Dr. Masoud Eddaghel**
Date: 8th of February 2018 — **Examination time: 120 Minutes**

Q1/ [6 marks]

a) Draw the block diagram of digital communication system.
b) What are the challenges of wireless communication system?
c) Defined the diversity and what its goal?
d) What are the performance evaluation criteria of wireless system?
e) What is the BER reference of wireless system?
f) What is the function of Matched filter?

Q.2/ [8 marks] For an 8PSK and BFSK schemes, operating with an information bit rate 64 *khps*.

a) Draw the BFSK modulator.
b) Find the symbol rate (baud) for both schemes.
c) Find the BW for both schemes.
d) Find the BW efficiency for both schemes.
e) Which scheme has efficient BW?
f) Draw the constellation points for both schemes.
g) Which scheme has higher BER?
h) Which scheme has higher data rate?

Q3/ [22 marks] A practical wireless system operating with carrier frequency, fc= 900 MHz. This system exploiting SIMO scheme with one transmit antenna and four receive antennas. Assuming the system is working in faded channel.

a) Draw the schematic diagram of this SIMO system.
b) Find the received equations r.
c) Find out the channel matrix H and H^H.
d) Find $H^H H$.
e) Find estimated received signal.
f) Determine the distance (cm / m) between receive antennas.
g) Identify the expected physical size of this receiver.
h) What is the main disadvantage of this system? Where is it use?
i) If the SNR = 20 dB & channel gains =1, find the normalized capacity of this system.
j) If the BW = 4KH. Find the maximum possible data rate.
k) How many signalling levels (M) are required for a modulation scheme?

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Final Exam: Fall Semester — **7th Semester**
Subject: Wireless Communication System — **Examiner: Dr. Masoud Eddaghe**
Date: 8th of February 2018 — **Examination time: 120 Minutes**

Q4/ [20 marks] A MIMO system contains of two transmit antennas and four receive antenna

a) Draw the block diagram of this system.
b) Draw the schematic diagram of this system over flat fading channel.
c) Find the received equations *r*.

d) Find out the channel matrix H and HH.

e) Find $H^{H}H$.

f) Find estimated received signal.
g) What is the diversity gain of this system?
h) If the SNR = 20 dB & channel gains =1, find the normalized capacity of this system.
i) If the BW = 4KH. Find the maximum possible data rate.
j) How many signalling levels (M) are required for a modulation scheme?

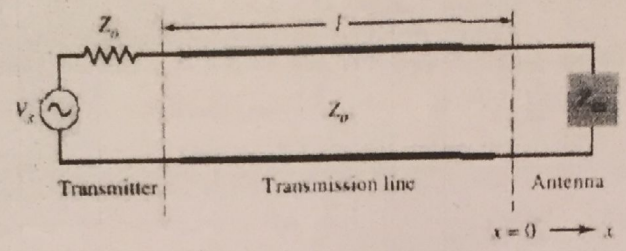
Q5/ [4 marks]

a) Draw the block diagram of coded SISO-OFDM system.
b) What are the advantages of OFDM system?

Good luck

Q1

A transmitter, with an internal impedance Z_0 (real), is connected to an antenna through a lossless transmission line of length l and characteristic impedance Z_0. Find a *simple* expression for the ratio between the antenna gain and its realized gain.



$$V(x) = A\left[e^{-jkx} + \Gamma(0)e^{+jkx}\right]$$
$$I(x) = \frac{A}{Z_0}\left[e^{-jkx} - \Gamma(0)e^{+jkx}\right]$$

Q2-

The current distribution on a terminated and matched long linear (traveling wave) antenna of length l, positioned along the z-axis and fed at its one end, is given by

$$\mathbf{I} = \hat{\mathbf{a}}_z I_0 e^{-jkz'}, \quad 0 \le z' \le l$$

where I_0 is a constant. Derive expressions for the
(a) far-zone spherical electric and magnetic field components
(b) radiation power density

Q3-

Design a constant current circular loop so that its first minimum, aside from $\theta = 0°$, in its far-field pattern is at 30° from a normal to the plane of the loop. Find the
(a) smallest radius of the antenna (in wavelengths)
(b) relative (to the maximum) radiation intensity (in dB) in the plane of the loop

Q4-

Design a broadside Dolph-Tschebyscheff array of 10 elements with spacing d between the elements and with a major-to-minor lobe ratio of 26 dB. Find the excitation coefficients and form the array factor.

Q5-

Design a linear array of isotropic elements placed along the z-axis such that the zeros of the array factor occur at $\theta = 0°, 60°$, and $120°$. Assume that the elements are spaced $\lambda/4$ apart and that the progressive phase shift between them is $0°$.

(a) Find the required number of elements.
(b) Determine their excitation coefficients.
(c) Write the array factor.
(d) Plot the array factor pattern to verify the validity of the design.

Q6-

Cellular and mobile telephony, using earth-based repeaters, has received wide acceptance and has become an essential means of communication for business, even for the household. Cellular telephony by satellites is the wave of the future and communication systems are being designed for that purpose. The present allocated frequency band for satellites is at L-band (= 1.6 GHz). Various antennas are being examined for that purpose; one candidate is the microstrip patch antenna. Design a rectangular microstrip patch antenna, based on the dominant mode, that can be mounted on the roof of a car to be used for satellite cellular telephone. The designed center frequency is 1.6 GHz, the dielectric constant of the substrate is 10.2 (i.e., RT/duroid), and the thickness of the substrate is 0.127 cm. Determine the

(a) dimensions of the rectangular patch (in cm)
(b) resonant input impedance, assuming no coupling between the two radiating slots
(c) mutual conductance between the two radiating slots of the patch
(d) resonant input impedance, taking into account coupling
(e) *position of the feed to match the antenna patch to a 75-ohm line*

Cisco CCNA 4 final exam

College of Electronic Technology - Tripoli,Libya
Department of Computer
Cisco CCNA4 final exam
No. of qustions 55, total marks 40.
Time is 120 min.

Good luck :)
-Mohammed Jalal Gritli

Exam A

QUESTION 1
A small company with 10 employees uses a single LAN to share information between computers. Which type of connection to the Internet would be appropriate for this company?

A. a dialup connection that is supplied by their local telephone service provider
B. Virtual Private Networks that would enable the company to connect easily and securely with employees
C. private dedicated lines through their local service provider
D. a broadband service, such as DSL, through their local service provider

QUESTION 2
Which statement describes a characteristic of a WAN?

A. A WAN operates within the same geographic scope of a LAN, but has serial links.
B. WAN networks are owned by service providers.
C. All serial links are considered WAN connections.
D. A WAN provides end-user network connectivity to the campus backbone

QUESTION 3
Which connectivity method would be best for a corporate employee who works from home two days a week, but needs secure access to internal corporate databases?

A. cable
B. DSL
C. VPN
D. WiMAX

QUESTION 4
What can cause a reduction in available bandwidth on a cable broadband connection ?

A. smaller cells
B. number of subscribers
C. CIR
D. Internet Speed

QUESTION 5
A corporation is looking for a solution to connect multiple, newly established remote branch offices. Which consideration is important when selecting a private WAN connection rather than a public WAN connection?

A. Cost
B. CIR/MIR
C. Security during transfer
D. web browsing

QUESTION 6
Which WAN technology establishes a dedicated point-to-point connection between two sites ?

A. X25

B. Frame Relay
C. MPLS
D. Leased Line

QUESTION 7
Which Part of the PPP protocol communicates with different network layer protocols?

A. by negotiating with the network layer protocol
B. by encoding the information field in the PPP frame
C. by specifying the protocol during link establishment through LCP
D. by using NCPs

QUESTION 8
When configuring Multilink PPP, where is the IP address for the multilink bundle configured?

A. on a physical serial interface
B. on a subinterface
C. on a multilink interface
D. on a Tunnel interface

QUESTION 9
Refer to the exhibit.
A network administrator is configuring the PPP link between the two routers. However, the PPP link cannot be established. Based on the partial output of the show running-config command, what is the cause of the problem?

Case Study Title (Case Study):

```
ISP(config)# show running-config
<output omitted>

username BORDER password 0 Cisco
!
interface Serial0/0/0
 ip address 209.165.200.225 255.255.255.252
 encapsulation ppp
 ppp authentication chap
```

```
BORDER(config)# show running-config
<output omitted>

username ISP password 0 cisco
!
interface Serial0/0/0
 ip address 209.165.200.226 255.255.255.252
 encapsulation ppp
 ppp authentication chap
```

A. The usernames do not match
B. The passwords do not match.

C. The passwords should be longer than 8 characters
D. The interface IP addresses are in different subnets.

QUESTION 10
How much total bandwidth is provided by a E1 line?

A. 2 Mbps
B. 1.544 Mbps
C. 64 kbps
D. 43.736 Mbps

QUESTION 11
What are three components of PPP? (Choose three.) ?

A. PPPoE
B. authorization
C. LCP
D. parallel communications
E. NCP
F. HDLC-like framing

QUESTION 12
Which range represents all the IP addresses that are affected when network 10.120.160.0 with a wildcard mask of 0.0.7.255 is used in an ACE?

A. 10.120.160.0 to 10.127.255.255
B. 10.120.160.0 to 10.120.167.255
C. 10.120.160.0 to 10.120.168.0
D. 10.120.160.0 to 10.120.191.255

QUESTION 13
Which range represents all the IP addresses that are affected when network 10.120.1.0 with a wildcard mask of 0.0.3.255 is used in an ACE?

A. 10.120.160.0 to 10.120.191.255
B. 10.120.0.0 to 10.120.3.255
C. 10.120.0.0 to 10.120.7.255
D. 10.120.1.0 to 10.120.3.255

QUESTION 14
What two functions describe uses of an access control list? (Choose Three.)

A. ACLs assist the router in determining the best path to a destination
B. ACLs provide a basic level of security for network access.
C. ACLs can control which areas a host can access on a network
D. ACLs can permit or deny traffic based upon the MAC address originating on the router.
E. ACLs can be used to define a range of hosts who can access Internet
F.

QUESTION 15
Which two statements describe the effect of the access control list wildcard mask 0.0.0.15? (Choose two.)

A. The first 28 bits of a supplied IP address will be ignored.
B. The last four bits of a supplied IP address will be ignored.
C. The first 32 bits of a supplied IP address will be matched.
D. The first 28 bits of a supplied IP address will be matched.
E. The last five bits of a supplied IP address will be ignored.
F. The last four bits of a supplied IP address will be matched.

QUESTION 16
refer to the exhibt ! A network administrator is configuring an ACL to limit the connection to R1 vty lines to only the IT group workstations in the network 192.168.24.0/28. The administrator verifies the successful Telnet connections from a workstation with IP 192.168.24.5 to R1 before the ACL is appliedR. However, after the ACL is applied to the interface Fa0/0, Telnet connections are denied. What is the cause of the connection failure?

Case Study Title (Case Study):

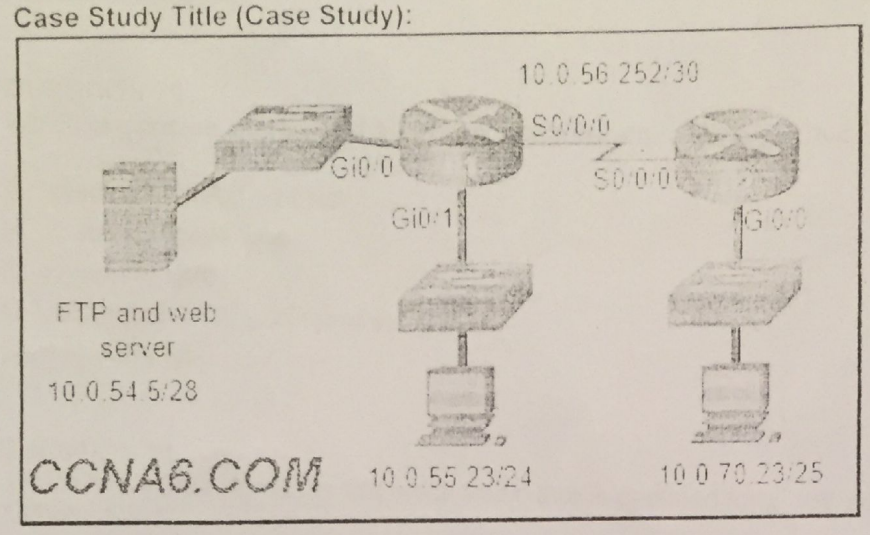
```
R1# configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
R1(config)# access-list 120 permit ip 192.168.20.0 0.0.3.255 10.0.10.0 0.0.0.255
R1(config)# access-list 120 permit tcp 192.168.22.0 0.0.0.15 10.0.10.0 0.0.0.15 eq 23
R1(config)# access-list 120 deny t ip any any
R1(config)# line vty 0 4
R1(config-line)# password admin-in
R1(config-line)# access-class 120 in
R1(config-line)# exit
R1(config)# interface fastEthernet 0/0
R1(config-if)# ip address 10.0.10.1 255.255.255.252
R1(config-if)# no shutdown
R1(config-if)# ip access-group 120 in
R1(config-if)# end
R1#

R1# show access-lists
Extended IP access list 120
    permit ip 192.168.20.0 0.0.3.255 10.0.10.0 0.0.0.255
    permit tcp 192.168.22.0 0.0.0.15 10.0.10.0 0.0.0.15 eq telnet
    deny ip any any (16 match(es))
R1#
```


A. The permit ACE specifies a wrong port number.
B. The enable secret password is not configured on R1.
C. The IT group network is not included in the permit statement and matched by deny any
D. The permit ACE should specify protocol ip instead of tcp.

QUESTION 17
Refer to the exhibit.
The network administrator that has the IP address of 10.0.70.23/25 needs to have access to the corporate FTP server (10.0.54.5/28). The FTP server is also a web server that is accessible to all internal employees on networks within the 10.x.x.x address. No other traffic should be allowed to this server. Which extended ACL

would be used to filter this traffic. and how would this ACL be applied? (Choose two.)

Case Study Title (Case Study):



A. access-list 105 permit ip host 10.0.70.23 host 10.0.54.5
access-list 105 permit tcp any host 10.0.54.5 eq www
access-list 105 permit ip any any

B. access-list 105 permit tcp host 10.0.54.5 any eq www
access-list 105 permit tcp host 10.0.70.23 host 10.0.54.5 eq 20
access-list 105 permit tcp host 10.0.70.23 host 10.0.54.5 eq 21

C. access-list 105 permit tcp host 10.0.70.23 host 10.0.54.5 eq 20
access-list 105 permit tcp host 10.0.70.23 host 10.0.54.5 eq 21
access-list 105 permit tcp 10.0.0.0 0.255.255.255 host 10.0.54.5 eq www
access-list 105 deny ip any host 10.0.54.5
access-list 105 permit ip any any

D. R2(config)# interface gi0/0
R2(config-if)# ip access-group 105 in

E. R1(config)# interface gi0/0
R1(config-if)# ip access-group 105 out

F. R1(config)# interface s0/0/0
R1(config-if)# ip access-group 105 out

QUESTION 18
A network administrator is designing an ACL. The networks 192.168.1.0/25, 192.168.0.0/25, 192.168.0.128/25, 192.168.1.128/26, and 192.168.1.192/26 are affected by the ACL. Which wildcard mask, if any, is the most efficient to use when specifying all of these networks in a single ACL permit entry?

A. 0.0.0.127
B. 0.0.0.255
C. 0.0.1.255
D. 0.0.255.255

QUESTION 19
Which Four values or sets of values are included when creating an extended access control list entry? (Choose Four.)

A. access list number between 1 and 99
B. source or destination port
C. destination address and wildcard mask

D. source address and wildcard mask*
E. destination subnet mask and wildcard mask
F. network protocol

QUESTION 20
Which two packet filters could a network administrator use on an IPv4 extended ACL? (Choose two.)

A. destination MAC address
B. ICMP message type
C. computer type
D. destination UDP port number
E. computer type

QUESTION 21
Which two ACE commands will block traffic that is destined for a web server which is listening to default ports? (Choose two.)

A. access-list 110 deny tcp any any eq 21
B. access-list 110 deny tcp any any eq https
C. access-list 110 deny tcp any any gt 443
D. access-list 110 deny tcp any any gt 75
E. access-list 110 deny tcp any any lt www

QUESTION 22
In applying an ACL to a router interface, which traffic is designated as outbound?

A. traffic that is coming from the source IP address into the router
B. traffic that is leaving the router and going toward the destination host
C. traffic that is going from the destination IP address into the router
D. traffic for which the router can find no routing table entry

QUESTION 23
Fill in the blanks. Use dotted decimal format.
The wildcard mask that is associated with the network 192.168.12.0/29 is _____

QUESTION 24
Which method is used by a PAT-enabled router to send incoming packets to the correct inside hosts?

A. It uses the destination TCP or UDP port number on the incoming packet.
B. It uses the source IP address on the incoming packet.
C. It uses the source TCP or UDP port number on the incoming packet.
D. It uses a combination of the source TCP or UDP port number and the destination IP address on the incoming packet.

QUESTION 25
What is RFC 1918 IP address ranges? (Choose Three)

A. 10.0.0.0 – 10.255.255.255

B. 172.16.0.0 – 172.31.255.255
C. 192.168.0.0 – 192.168.255.255
D. 19.254.0.0 - 169.254.255.255
E. 192.169.1.0 – 192.169.255.255
F. 209.200.0.0 - 209.200.255.255

QUESTION 26
Which command can be used to view the cable type that is attached to a serial interface?

A. Router(config)# show interfaces
B. Router(config)# show controllers
C. Router(config)# show ip interface
D. Router(config)# show ip interface brief

QUESTION 27
In which situation would the use of PAP be preferable to the use of CHAP?

A. when router resources are limited
B. when multilink PPP is used
C. when plain text passwords are needed to simulate login at the remote host
D. when a network administrator prefers it because of ease of configuration

QUESTION 28
Which is an advantage of using PPP on a serial link instead of HDLC?

A. option for authentication
B. higher speed transmission
C. fixed-size frames
D. option for session establishment

QUESTION 29
Which protocol responsible for intiating & terminatiing the PPP session?

A. NCP
B. LCP
C. IPCP
D. HDLC

QUESTION 30
Which two packet filters could a network administrator use on an IPv4 extended ACL? (Choose two.)

A. destination MAC address
B. ICMP message type
C. computer type
D. source TCP hello address
E. destination UDP port number

QUESTION 31
Refer to the exhibit. Which address or addresses represent the inside global address?

Case Study Title (Case Study):

```
Router1(config)# ip nat inside source static 192.168.0.100 209.165.20.25
Router1(config)# interface serial0/0/0
Router1(config-if)# ip nat inside
Router1(config-if)# ip address 10.1.1.2 255.255.255.0
Router1(config)# interface serial 0/0/2
Router1(config-if)# ip address 209.165.20.25 255.255.255.0
Router1(config-if)# ip nat outside
```

A. 10.1.1.2
B. 169.254.209.128
C. 192.168.0.100
D. 209.165.20.25

QUESTION 32
A network administrator is configuring a static NAT on the border router for a web server located in the DMZ network. The web server is configured to listen on TCP port 8080. The web server is paired with the internal IP address of 192.168.5.25 and the external IP address of 209.165.200.230. For easy access by hosts on the Internet, external users do not need to specify the port when visiting the web server. Which command will configure the static NAT?

A. R1(config)# ip nat inside source static tcp 192.168.5.25 80 209.165.200.230 8080
B. R1(config)# ip nat inside source static tcp 192.168.5.25 8080 209.165.200.230 80
C. R1(config)# ip nat inside source static tcp 209.165.200.230 80 192.168.5.25 8080
D. R1(config)# ip nat inside source static tcp 209.165.200.230 8080 192.168.5.25 80

QUESTION 33
Refer to the exhibit. Based on the output that is shown, what type of NAT has been implemented?

Case Study Title (Case Study):

```
R1# show ip nat translations
Pro Inside global          Inside local       Outside local      Outside global
tcp 209.165.200.225:1405 10.6.15.2:1405 209.165.202.141:80 209.165.202.141:80
tcp 209.165.200.225:1406 10.6.15.1:1406 198.51.100.3:80    198.51.100.3:80
```

A. dynamic NAT with a pool of two public IP addresses
B. PAT using an external interface
C. static NAT with one entry
D. static NAT with a NAT pool

QUESTION 34
What is the primary purpose of NAT?

A. conserve IPv4 addresses
B. increase network security
C. allow peer-to-peer file sharing
D. enhance network performance

QUESTION 35
What is a disadvantage of NAT?

A. There is no end-to-end addressing.
B. The router does not need to alter the checksum of the IPv4 packets.
C. The costs of readdressing hosts can be significant for a publicly addressed network.
D. The internal hosts have to use a single public IPv4 address for external communication.

QUESTION 36
Refer to the exhibit. What is the purpose of the command marked with an arrow shown in the partial configuration output of a Cisco broadband router?

Case Study Title (Case Study):

```
interface FastEthernet 0/0
 ip address 10.10.10.1 255.255.255.0
 ip nat inside
 no cdp enable
 hold-queue 32 in
 hold-queue 100 out
!
interface FastEthernet 0/1
 ip address dhcp
 ip nat outside
 no cdp enable
!
ip classless
ip http server
!
ip nat inside source list 102 interface fastethernet 0/1 overload
access-list 102 permit ip 10.10.10.0 0.0.0.255 any
no cdp run
!
```


A. defines which addresses can be translated
B. defines which addresses are allowed into the router
C. defines which addresses are assigned to a NAT pool

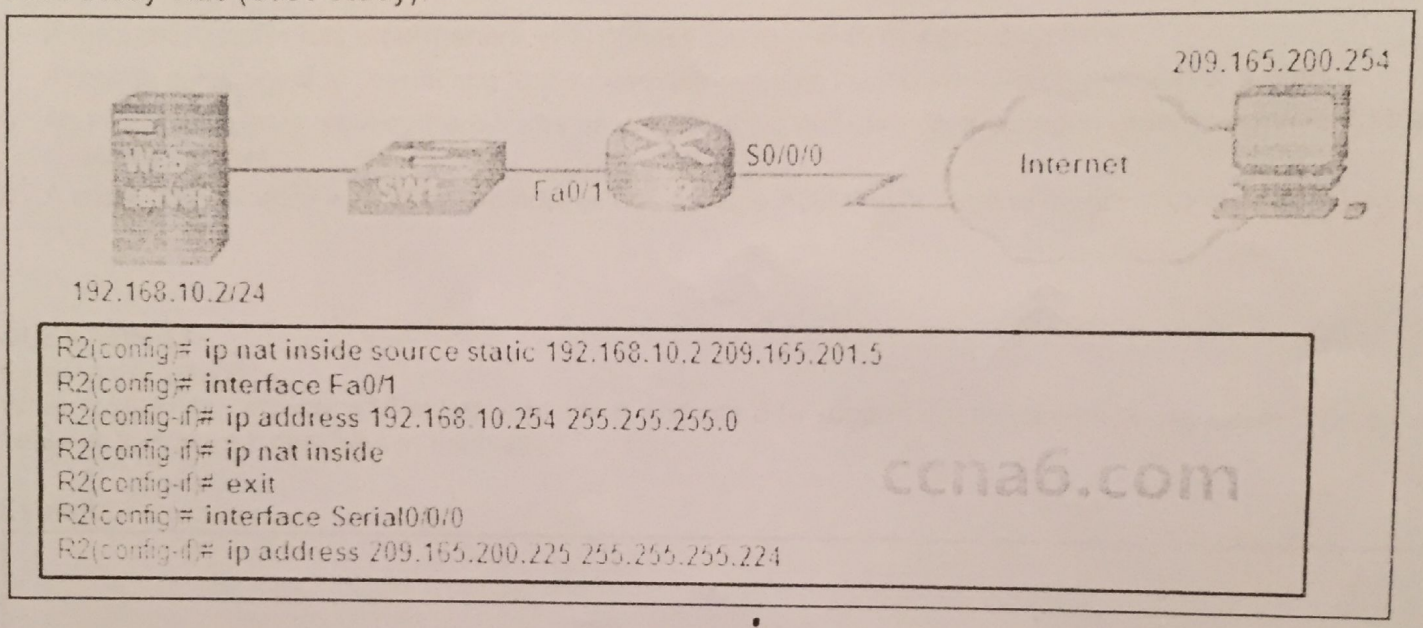
D. defines which addresses are allowed out of the router

QUESTION 37
What are two of the required steps to configure PAT? (Choose two.)

A. Define a pool of global addresses to be used for overload translation.
B. Create a standard access list to define applications that should be translated.
C. Identify the inside interface.
D. Create a standard access list to define applications that should be translated.

QUESTION 38
Create a standard access list to define applications that should be translated.

Case Study Title (Case Study):



A. Interface Fa0/1 should be identified as the outside NAT interface.
B. The IP NAT statement is incorrect.
C. Interface S0/0/0 should be identified as the outside NAT interface.
D. Interface Fa0/1 should be identified as the outside NAT interface.

QUESTION 39
What is a component of an ADSL connection that is located at the customer site?

A. DTE
B. CPE
C. SOHO
D. DSLAM

QUESTION 40
How can the use of VPNs in the workplace contribute to lower operating costs?

A. High-speed broadband technology can be replaced with leased lines.
B. VPNs can be used across broadband connections rather than dedicated WAN links.
C. VPNs prevents connectivity to SOHO users.

D. VPNs require a subscription from a specific Internet service provider that specializes in secure connections.

QUESTION 41
Which two statements describe a site-to-site VPN? (Choose two.)

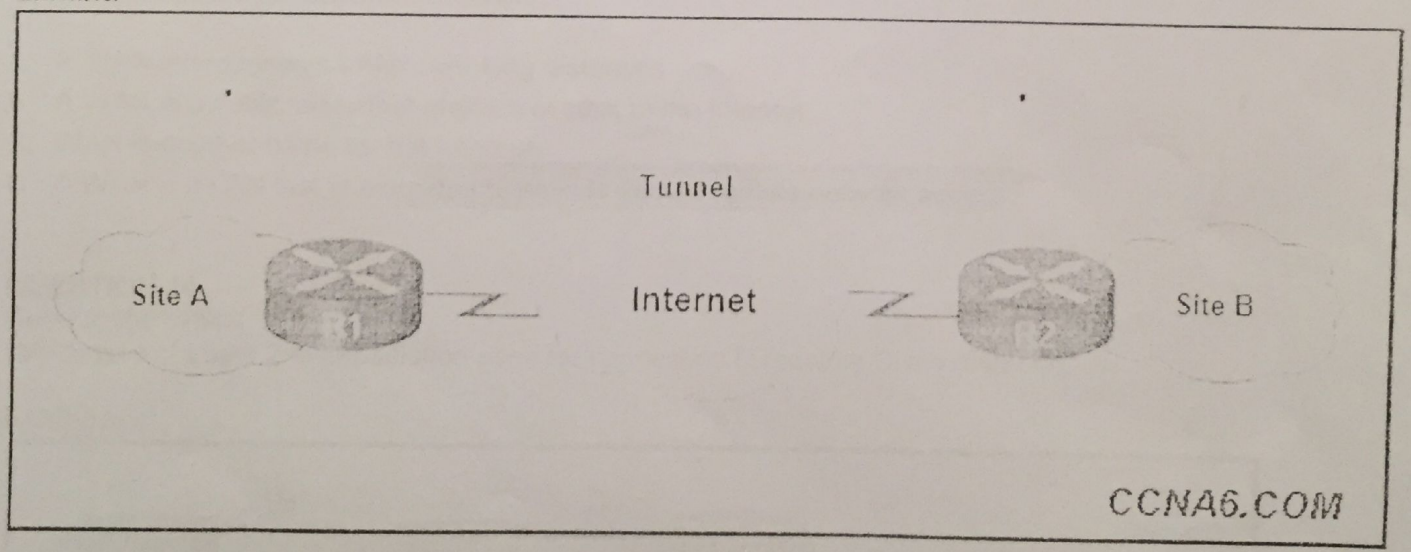
A. It connects entire networks to each other.
B. It requires hosts to send TCP/IP traffic through a VPN gateway.
C. It is used to connect individual hosts securely to a company network over the Internet
D. It may require VPN client software on hosts.
E. users aren't ware a VPN exists

QUESTION 42
Which two scenarios are examples of remote access VPNs? (Choose two.)

A. A toy manufacturer has a permanent VPN connection to one of its parts suppliers.
B. A mobile sales agent is connecting to the company network via the Internet connection at a hotel
C. An employee who is working from home uses VPN client software on a laptop in order to connect to the company network.
D. A small branch office with three employees has a Cisco ASA that is used to create a VPN connection to the HQ.

QUESTION 43
Refer to the exhibit.
What solution can provide a VPN between site A and site B to support encapsulation of any Layer 3 protocol between the internal networks at each site?

Exhibit:



A. an IPsec tunnel
B. a remote access tunnel
C. Cisco SSL VPN
D. a GRE tunnel

QUESTION 44
Which Four statements are characteristics of generic routing encapsulation (GRE)? (Choose three.)

A. GRE encapsulation supports both IPv4 and IPv6
B. GRE is stateless.
C. GRE does not have strong security mechanisms
D. GRE provides flow control by default.
E. GRE is the most secure tunneling protocol.
F. GRE runs at port 47 at the Transport L4 layer

QUESTION 45
Which is a requirement of a site-to-site VPN?

A. It requires a client/server architecture.
B. It requires the placement of a VPN server at the edge of the company network
C. It requires hosts to use VPN client software to encapsulate traffic
D. It requires a VPN gateway at each site encrypt and decrypt traffic

QUESTION 46
What is the recommended technology to use over a public WAN infrastructure when a branch office is connected to the corporate site?

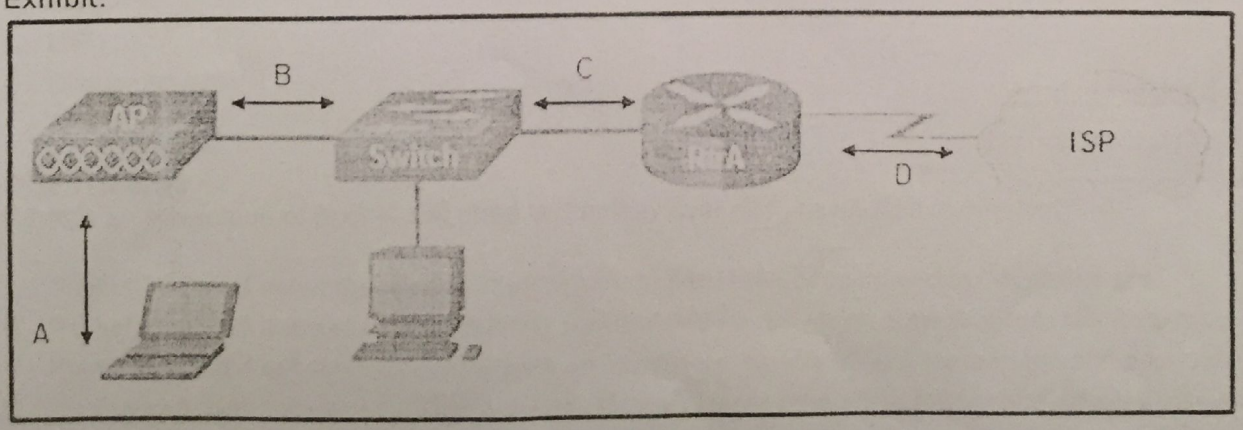
A. ATM
B. ADSL
C. VPN
D. Wi-Fi

QUESTION 47
Which statement best describes a WAN?

A. A WAN interconnects LANs over long distances
B. A WAN is a public utility that enables access to the Internet
C. WAN is another name for the Internet.
D. A WAN is a LAN that is extended to provide secure remote network access.

QUESTION 48
Refer to the exhibit.
Which type of Layer 2 encapsulation used for connection D requires Cisco routers?

Exhibit:



A. Ethernet
B. PPPOE
C. HDLC
D. PPP

QUESTION 49
Which three statements are true about PPP? (Choose three.)

A. PPP can use synchronous and asynchronous circuits.
B. PPP can only be used between two Cisco devices
C. PPP carries packets from several network layer protocols in LCPs.
D. PPP uses LCPs to establish, configure, and test the data-link connection.
E. PPP uses LCPs to agree on format options such as authentication, compression, and error detection.

QUESTION 50
What function is provided by Multilink PPP?

A. spreading traffic across multiple physical WAN links
B. dividing the bandwidth of a single link into separate time slots
C. enabling traffic from multiple VLANs to travel over a single Layer 2 link
D. creating one logical link between two LAN switches via the use of multiple physical links

QUESTION 51
Which IPv4 address range covers all IP addresses that match the ACL filter specified by 172.16.2.0 with wildcard mask 0.0.1.255?

A. 172.16.2.0 to 172.16.2.255
B. 172.16.2.1 to 172.16.3.254
C. 172.16.2.0 to 172.16.3.255
D. 172.16.2.1 to 172.16.255.255

QUESTION 52
Which two devices are needed when a digital leased line is used to provide a connection between the customer and the service provider? (Choose two.)

A. Remote Access Server
B. CSU
C. DSU
D. Dialup modem

QUESTION 53
What is an advantage of packet-switched technology over circuit-switched technology?

A. Packet-switched networks are less susceptible to jitter than circuit-switched networks are.
B. Packet-switched networks can efficiently use multiple routes inside a service provider network.
C. Packet-switched networks do not require an expensive permanent connection to each endpoint.
D. Packet-switched networks usually experience lower latency than circuit-switched networks experience.

QUESTION 54
Which WAN technology establishes a dedicated constant point-to-point connection between two sites?

A. ATM
B. MPLS
C. ISDN
D. Leased Lines
E. Frame Relay

QUESTION 55
Which 2 options are correct
NAT is a way to let users access the internet, its usually done in the edge devices, like (choose two)

A. Routers
B. Firewalls
C. Switches
D. Servers

الفصل السابع اتصالات

كلية التقنية الالكترونية
College of Electronic Technology - Tripoli
طرابلس

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لطلبة الفصل: ..السابع والاستدراكي الثاني... رمز المادة CM404التاريخ: ---------
الفصل الدراسي :ربيع 2018.. اسم الأستاذ/المنسق : عبدالجواد ابراهيم الطاهر المزوغي .....الزمن 120 دقيقة
اسم الطالب :..... رقم القيد ..... المجموعة : .....

Q1-A) -(8 points):

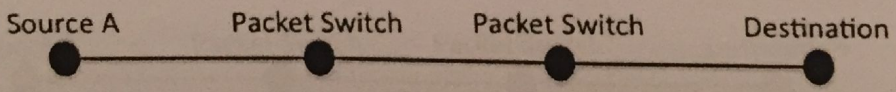
Through two block diagrams explain the difference between Space division and time division switching.

Q1-B)-(7 points)

What are the advantages and disadvantages of packet switching over circuit switching?

Q2) (12 points)

Consider a message that is 8Mbits long that has to be sent from source to destination as shown in the below figure. Suppose each link has a maximum capacity of 2 Mbps. Ignore propagation, queueing and processing delays.



a. **[4 points] Consider sending the message from source to destination without message segmentation. Keeping in mind that each switch uses store-and-forward packet switching, low long does it take to move the message from source host to destination host?**
b. **[6 points] Now suppose that the message is segmented into 4,000 packets, which each packet being 2,000 bits long. How long does it take to move the**