



Online Exams

Sri Lanka Institute of Information Technology

Which of these is not applicable for IP protocol ?

Select one or more:

- ☐ Offer reliable service
- ☐ Does not offer error reporting
- ☐ Connection-less.
- ☐ Offer unreliable service
- ☐ Connection - Oriented
- ☐ Operate at the layer 4



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Question 39

Not yet answered

Marked out of 1.00

Flag question

Which of the following VTP modes allow VLANs to be configured on a switch?

Select one or more:

- ☐ Dynamic
- ☒ Server
- ☐ Static
- ☒ Client
- ☒ Transparent

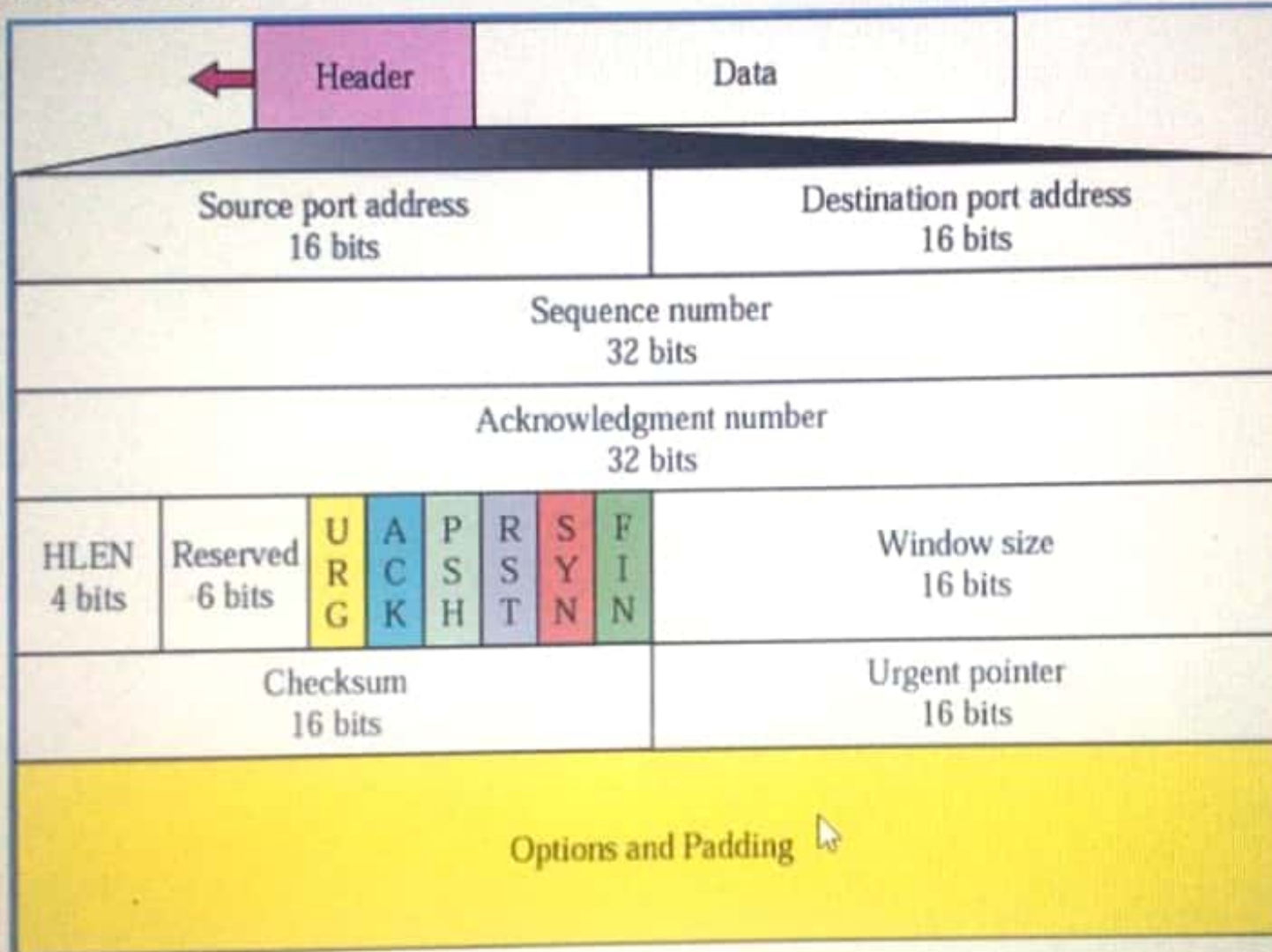
- a) An organization has obtained the IP address block 200.30.40.0/24 and there is a requirement to create 11 subnets as follows:
- 2 subnets with 50 addresses in each.
 - 2 subnets, with 25 addresses in each.
 - 3 subnets with 10 addresses in each
 - 4 subnets with 2 addresses in each.

Write down all the subnetwork addresses with the subnet masks using Variable Length Subnet Masking. (10 Marks)

- b) Write the three types of IPv6 addresses. (3 Marks)
- c) What is the EUI-64 interface ID of the IPv6 address corresponding to the MAC address 6CA5:BFFE:024C. (2 Marks)
- d) Write down the complete IPv6 addresses of the following compressed IPv6 addresses.
- i. 52:8d30:0:2345::190
 - ii. Fe80::1 (2 Marks)
- e) Write down the three methods of IPv4 and IPv6 coexistence (3 Marks)

a.		
2 subnets with 50 addresses		
2 subnets, with 25 addresses		
3 subnets with 10 addresses		

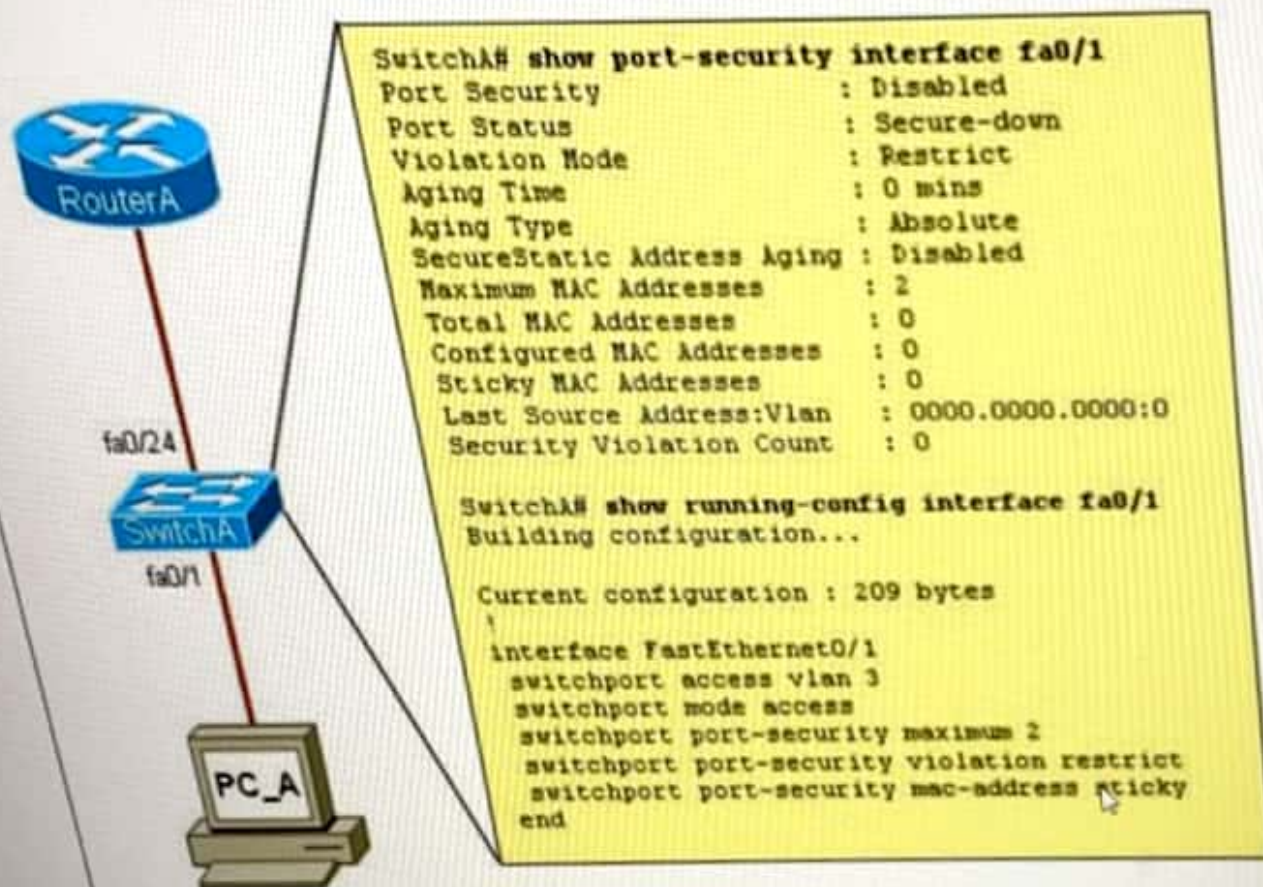
TCP Header Format.



1. The Acknowledgement number is (In Decimal):

2. The Sequential number is (In Decimal):

or network administrator was given the task of configuring port security on SwitchA to allow only PC_A to access the switched network through port fa0/1. If any other device is detected, the port is to drop frames from this device. The administrator configured the interface and tested it with successful pings from PC_A to RouterA, and then observes the output from these two show commands.

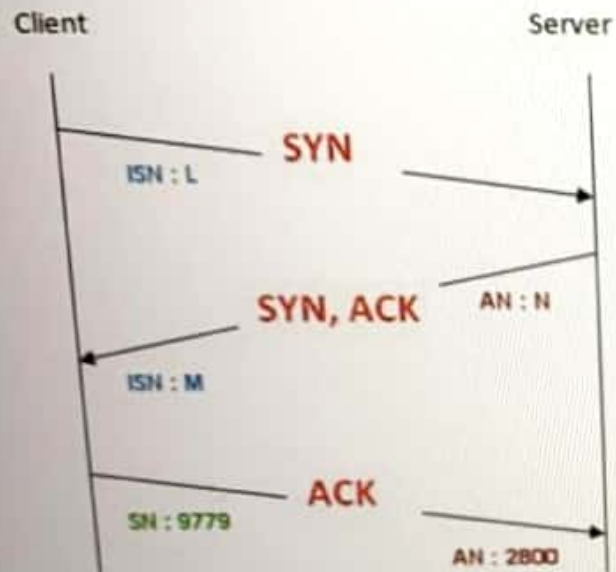


Which of these changes are necessary for SwitchA to meet the requirements?

Select one or more:

- ☐ Port security interface counters need to be cleared before using the show command
- ☐ Port security needs to be globally enabled for the Switch.
- ☐ Port security needs to be configured to allow only one learned MAC address.
- ☐ The port security configuration needs to be saved to NVRAM before it can become active.

Identify the values of L, M, N respectively for the following connection establishment process between a client and a server.



Select one:

- ☐ 9777 , 2799 , 9779
- ☐ 9778 , 2799 , 9779
- ☐ 9779 , 2799 , 9779
- ☐ 9778 , 2799 , 9778
- ☐ 2799 , 9778 , 9779

Which of the following statement/s is/are FALSE regarding Access Control Lists ?

Select one or more:

The standard Access-list is generally applied close to the source

Improve network availability

Improve network performance

As there is an implicit deny at the end of every access list

Provides security as administrator can configure the access list according to the needs and deny the unwanted packets from entering the network

Every new rule which is added into the access list will be placed at the top of the access list

In which of the following modes in Cisco's IOS can issue show commands **normally** ?

Select one or more:

- ☐ Administrative
- ☐ Privileged
- ☐ Interface Configuration
- ☐ Line Configuration
- ☐ User
- ☐ Global Configuration

Question 14
Not yet answered
Marked out of 1.00
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Online Examination

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Which type of cable is used to connect to a Cisco Console port?

Select one:

- ☐ Rollover
- ☐ Crossover
- ☐ Straight Through
- ☐ TIA 568B



ONLINE EXAMS

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In IPv6, Which special address type have been eliminated ?

Select one:

- ☐ Dualcast
- ☐ Multicast
- ☐ Unicast
- ☐ Anycast
- ☐ Broadcast

Which of the following bridge IDs wins election as root, assuming that the switches with these bridge IDs are in the same network?

Select one:

- ☐ 32769:0200.2222.2222
- ☐ 40961:0200.1111.1111
- ☐ 4097:0200.1111.1111
- ☐ 4097:0200.2222.2222
- ☐ 32769:0200.1111.1111

Which of the following remains same in the IP header of the packet in a network during the entire journey of the packet?

Select one or more:

- ☐ TTL
- ☐ Identification Number
- ☐ D Bit
- ☐ Header Checksum
- ☐ Destination address
- ☐ Source Address



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Where does a Router store routing tables, ARP cache, and packet buffers ?

Select one:

- ☐ NVRAM
- ☐ RAM
- ☐ ROM
- ☐ Flash Memory



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Which of the following fields cannot be compared based on an extended IP ACL?

Select one or more:

- ☐ Protocol
- ☐ URL
- ☐ Credentials for remote access
- ☐ Filename for FTP transfers
- ☐ Source and Destination IP addresses

Next page

Question 29

Not yet answered

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1.00

Flag question

Which of the following steps below are required to enable IP RIP?

- A - Configure privileged level password
- B - Specify the routing protocol
- C - Specify the given destination network
- D - Specify directly connected networks
- F - Configure static Rip routes

Select one:

- ☐ B and D only
- ☐ F and D only
- ☐ All the steps are needed
- ☐ B only



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A router has the following IP address on Ethernet0: 172.16.2.1/23. Which of the following can be valid host addresses on the LAN attached to the router?

1. 172.16.1.100
2. 172.16.1.198
3. 172.16.2.255
4. 172.16.3.0

Select one:

- ☐ None of the above
- ☐ 1 and 3 only
- ☐ 3 and 4 only
- ☐ 1 only

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If the first byte of a Datagram is 2000 :

Select one or more:

- ☐ The fragmentation offset of the datagram is 2000
- ☐ The datagram is 2000 Bytes in size.
- ☐ The datagram has been fragmented
- ☐ The fragmentation offset of the datagram is 16000
- ☐ The D bit value is Zero
- ☐ The datagram has not been fragmented
- ☐ The fragmentation offset of the datagram is 250.

Which of the following statement would best describe the 192.192.192.56 IP address and 255.255.255.240 subnet?

Select one:

- ☐ This is a Class C address that is using 4 host bits which creates 16 usable subnets with 16 usable hosts per subnet.
- ☐ This is a Class B address that is masking 12 bits for subnetting, yielding 14 valid subnets.
- ☐ The subnet mask is borrowing 4 host bits which creates 16 usable subnets with 14 usable hosts per subnet.
- ☐ This is a Class C address that is using 4 host bits which creates 14 subnets with 14 hosts per subnet.

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A network administrator is configuring an ACL with the command `access-list 45 permit 172.18.32.0 0.0.15.255`. Which of the following IPv4 address matches the ACE?

Select one or more:

- ☐ 172.18.48.5
- ☐ 172.18.47.254
- ☐ 172.18.36.255
- ☐ 172.18.20.2
- ☐ 172.18.20.253

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Question 32

Not yet answered

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1.00

Flag question

Which TCP based timer/timers prevents a long idle connection between two devices.

Select one or more:

- ☐ Retransmission
- ☐ Keepalive
- ☐ Time waited
- ☐ Persistence



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Question **21**

Not yet answered

Marked out of
1.00

Flag question

The Administrator needs to prevent unauthorized users from plugging their laptops into the router. What type of password will help prevent this issue?

Select one:

- ☐ Console
- ☐ Secret
- ☐ Telnet
- ☐ Enable
- ☐ Line

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Question 31

Not yet answered

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Flag question

Which of the following statement/s is/are FALSE regarding Access Control Lists ?

Select one or more:

- ☐ As there is an implicit deny at the end of every access list
- ☐ Improve network performance
- ☐ Provides security as administrator can configure the access list according to the needs and deny the unwanted packets from entering the network.
- ☐ The standard Access-list is generally applied close to the source
- ☐ Every new rule which is added into the access list will be placed at the top of the access list
- ☐ Improve network availability

Question **27**

Not yet answered

Marked out of
1.00

Flag question

Which two statements describe the IP address 10.16.3.65/23?

1. The subnet address is 10.16.3.0
2. The lowest host address in the subnet is 10.16.2.1
3. The last valid host address in the subnet is 10.16.2.254
4. The broadcast address of the subnet is 10.16.3.255

Select one:

- ☐ 1 and 4
- ☐ 2 and 4
- ☐ 2 and 3
- ☐ 1 and 3

Question 23

Not yet answered

Marked out of
1.00

Flag question

Switch SW1 sends a frame to switch SW2 using 802.1Q trunking. Which of the answers describes how SW1 changes or adds to the Ethernet frame before forwarding the frame to SW2?

Select one:

- ☐ Inserts a 4-byte header and does change the MAC addresses
- ☐ Inserts a 4-byte header and does not change the MAC addresses
- ☐ Encapsulates the original frame behind an entirely new Ethernet header
- ☐ Decapsulates the original frame behind an entirely new Ethernet header
- ☐ Add VLAN ID field, which identifies the VLAN associated with the frame.
- ☐ None of the above

Next page

A router with a Maximum Transmission Unit (MTU) of 196 bytes has received an IP packet of size with an IP header of length 20 bytes. Some values of the fields in the IP header of the fragments are given below .

	<table><tr><td>20</td><td>176</td></tr></table>	20	176	<table><tr><td>20</td><td>176</td></tr></table>	20	176	<table><tr><td>20</td><td>148</td></tr></table>	20	148
20	176								
20	176								
20	148								
Fragment Offset	0	22	44						

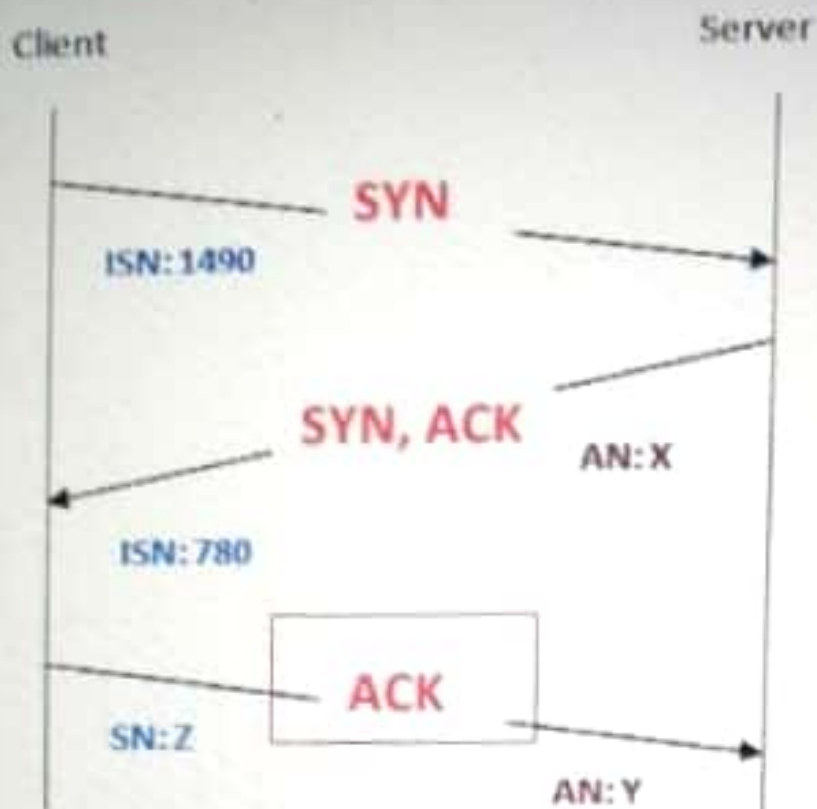
What is the size (in Bytes) of the IP packet received from the upper layer ?

Select one:

- ☐ 520
- ☐ 176
- ☐ 500
- ☐ 216
- ☐ 480
- ☐ 196

The interface ID of the IPv6 address generated by EUI64 method is 8ff8:40ff:feb2:28ca

The MAC Address of the device is



The Control fields of TCP header.

URG: Urgent pointer is valid	RST: Reset the connection
ACK: Acknowledgment is valid	SYN: Synchronize sequence numbers
PSH: Request for push	FIN: Terminate the connection



Select one:

- ☐ 000010
- ☐ 001010
- ☐ 000001
- ☐ 010000



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Question 35

Not yet answered

Marked out of
1.00

Flag question

In a LAN, which of the following terms best equates to the term VLAN?

Select one or more:

- ☐ Single Switch
- ☐ Collision Domain
- ☐ Broadcast domain
- ☐ Trunk
- ☐ Subnet

The following is a dump of a TCP header in hexadecimal format.

05320017 00000001 00000000 500207FF 00000000

Source port address 16 bits							Destination port address 16 bits						
Sequence number 32 bits													
Acknowledgement number 32 bits													
HLEN 4 bits		Reserved 6 bits		U R G	A C K	P S H	R S T	S Y N	F I N	Window size 16 bits			
Checksum 16 bits									Urgent pointer 16 bits				
Options & padding													

What is the destination port number in Decimal ?

Answer:

red

ion

The interface ID of the IPv6 address generated by EUI64 method is 02BB:CCFF:FEDD:1122

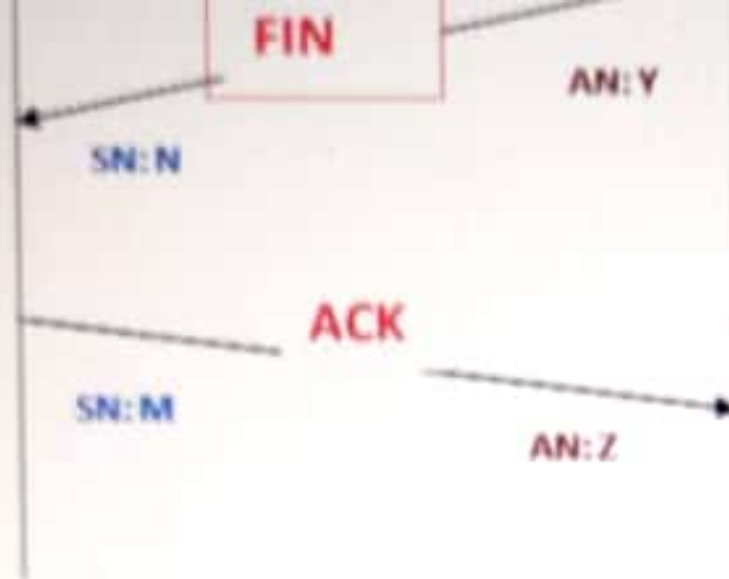
The MAC Address of the device is

enough usable addresses while wasting the fewest addresses? Which subnet address should this network use to provide



Select one:

- ☐ 192.168.1.56/26
- ☐ 192.168.1.64/26
- ☐ 192.168.1.64/27
- ☐ 192.168.1.56/27



The Control fields of TCP header.

URG: Urgent pointer is valid	RST: Reset the connection
ACK: Acknowledgment is valid	SYN: Synchronize sequence numbers
PSH: Request for push	FIN: Terminate the connection



Select one:

- ☐ 000001
- ☐ 000010
- ☐ 010000
- ☐ 010001

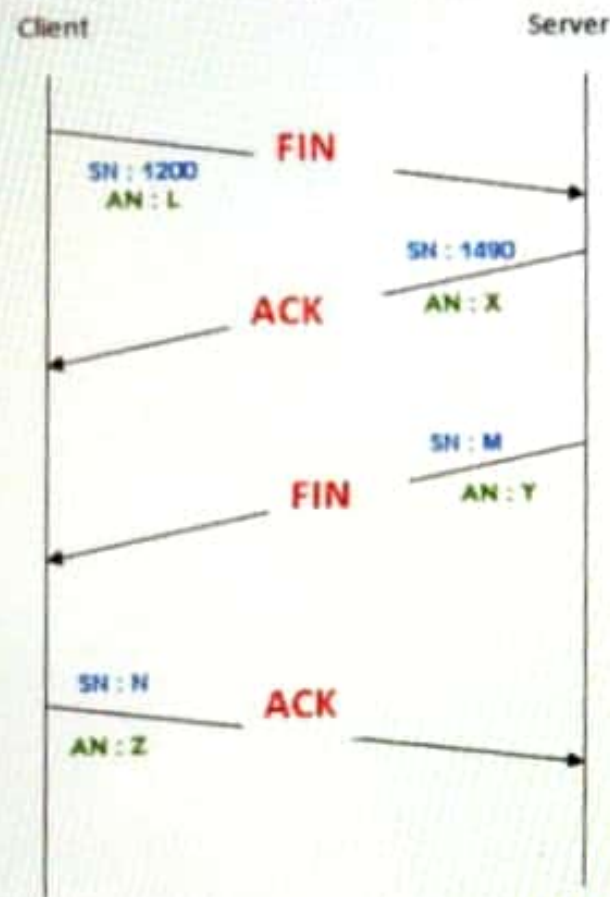
Question 37

Not yet answered

Marked out of 1.00

Flag question

Identify the values of **M,Y,Z** respectively for the following connection termination process between a client and a server.



Select one:

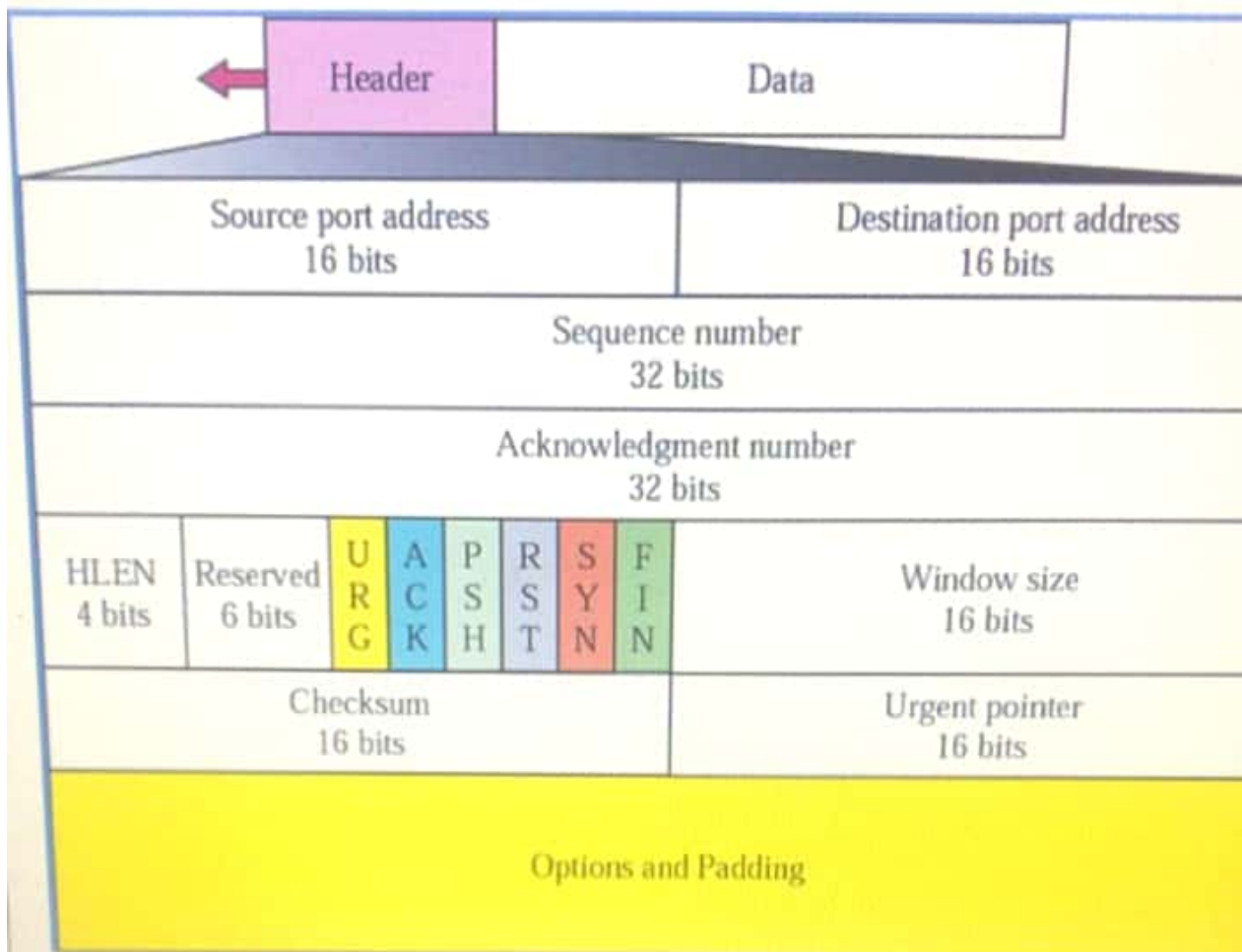
- ☐ 1491,1201,1491
- ☐ 1201,1201,1492
- ☐ 1201,1201,1491
- ☐ 1201,1491,1492
- ☐ 1491,1201,1492

What is the clock rate on a serial interface?

Select one:

- ☐ When the interface is terminated using the DCE end of the cable.
- ☐ When the interface is terminated using a Category 3 Cable.
- ☐ When the interface is terminated using a loopback adapter.
- ☐ When the interface is terminated with the DTE end of the cable.

CP Header Format.



1. The Acknowledgement number is (in Decimal):

2. The Sequential number is (in Decimal):

The following is a dump of a TCP header in hexadecimal format.

05A50017 00000001 00000000 D00207FF 00000000

Source port address 16 bits				Destination port address 16 bits			
Sequence number 32 bits							
Acknowledgement number 32 bits							
HLEN 4 bits	Reserved 6 bits	U R G	A C K	P S H	R S T	S Y N	F I N
Checksum 16 bits				Window size 16 bits			
				Urgent pointer 16 bits			
Options & padding							

What is the size of the options field in Bytes (in Decimal) ?

Answer:

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Quiz

DISCLAIMER

1

MULTIPLE CHOICE

1

2

9

10

17

18

25

26

33

34

STRUCTURED

41

42

FEEDBACK

44

Finish attempt

Time left



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Question 30

Not yet answered

Marked out of
1.00

Flag question

A device has the IP address of 192.168.20.166/26.

What is the last usable IP address of the network of the above device?

Select one:

- ☐ 192.168.20.158
- ☐ 192.168.20.159
- ☐ 192.168.20.190
- ☐ 192.168.20.254
- ☐ 192.168.20.191
- ☐ 192.168.20.255

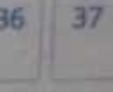
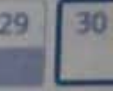
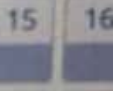
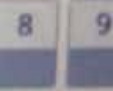
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An IP packet contains 6800 bytes of standard header and data. Identification number of this IP packet is 25200. Ethernet protocol is used in the Data Link Layer and the MTU of the Ethernet frame is 1500 bytes.

How many IP Fragments are created?

Select one:

- ☒ 4
- ☐ 6
- ☐ 7
- ☐ 5
- ☐ 4.5

Based on the routing table shown below, when the router receives a packet destined to 10.10.20.18 where will the router forward it to?

Router#show ip route

Codes: C - connected, S - static, R - RIP, M - mobile, B - BGP

D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area

N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2

E1 - OSPF external type 1, E2 - OSPF external type 2

O - ODR, * - candidate default

Gateway of last resort is 10.22.18.1 to network 0.0.0.0

10.0.0.0/8 is variably subnetted, 4 subnets, 4 masks

C 10.22.18.1/24 is directly connected, FastEthernet0/0

S 10.0.0.0/8 [1/0] via 10.22.18.21

S 10.10.0.0/16 [1/0] via 10.22.18.31

S 10.10.10.0/24 [1/0] via 10.22.18.41

S 10.10.10.10/32 [1/0] via 10.22.18.51

S* 0.0.0.0/0 [1/0] via 10.22.18.1

Router#

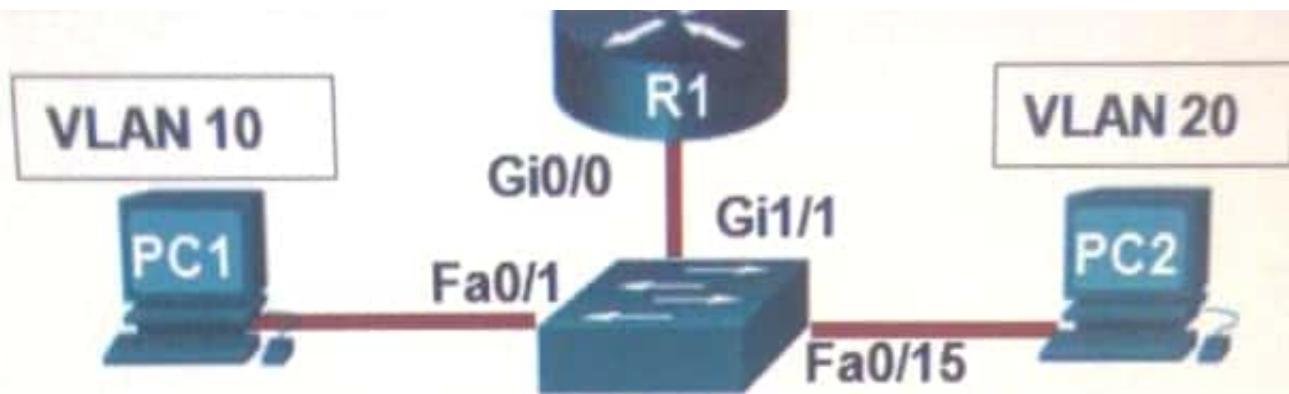
Select one:

☐ 10.22.18.31

☐ 10.22.18.41

☐ 10.22.18.51

☐ 10.22.18.1



R1# show running-config

```
interface GigabitEthernet0/0
  no ip address
!
interface GigabitEthernet0/0.5
  encapsulation dot1Q 5
  ip address 172.16.10.254 255.255.255.0
!
interface GigabitEthernet0/0.20
  encapsulation dot1Q 20
  ip address 172.16.20.254 255.255.255.0
!
<output omitted>
```

Select one:

- ☐ There is no IP address configured on the interface Gi0/0
- ☐ Gi0/0 is not configured as a trunk port
- ☐ The encapsulation dot1Q 5 command contains the wrong VLAN
- ☐ The no shutdown command is not entered on subinterfaces
- ☐ The command interface GigabitEthernet0/0.5 was entered incorrectly



Online Exams

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Question 18

Not answered

1 out of 1

Question

In distance vector routing, each node periodically shares its routing table with _____

Select one:

- ☐ Every other node
- ☐ Its immediate neighbours
- ☐ One neighbour
- ☐ Selected Multiple Neighbours



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fe80:0000:0000:0000:0000:000A:000b:0100

The abbreviated version of the above IPv6 address is :

31

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2001:0db8:003e:ef11:0000:0000:c100:004d

The abbreviated version of the above IPv6 address is :



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In distance vector routing, each node periodically shares its routing table with _____.

Select one:

- ☒ Every other node
- ☐ Its immediate neighbours
- ☐ One neighbour
- ☐ Selected Multiple Neighbours

You are a system administrator and you want to deny access to a group of computers with addresses 172.30.16.0 to 172.30.31.0 Which wildcard mask would you use?

Select one:

- ☐ 0.0.15.255
- ☐ 0.0.255.255
- ☐ 0.0.31.255
- ☐ 0.0.127.255
- ☐ 0.0.255.255

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An IP fragment has arrived with an offset value of 370. How many bytes of data were sent in the previous fragment/s?

Select one:

- ☐ 3000
- ☐ 2960
- ☐ 370
- ☐ 740
- ☐ 0

You type the following command into the router and receive the following:

```
Router(config)#show serial 0/0
```

```
^
```

% Invalid input detected at '^' marker.

Why was this error message displayed?

Select one or more:

- ☐ Part of the command is missing
- ☐ You cannot have a space between serial and 0/0
- ☐ You need to be in privileged mode
- ☐ The router does not have a serial0/0 interface
- ☐ Administrator only can issue this command

A router with a Maximum Transmission Unit (MTU) of 196 bytes has received an IP packet of size with an IP header of length 20 bytes. Some values of the fields in the IP header of the fragments are given below .

Fragment Offset	20	176	20	176	20	148
	0	22	44			

What is the last byte number of the data field of the second fragment ?

Select one:

- ☐ 352
- ☐ 176
- ☐ 195
- ☐ 196
- ☐ 351
- ☐ 175

Quiz navigation

DISCLAIMER

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MULTIPLE CHOICE QUESTIONS

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STRUCTURED QUESTIONS

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Which of the following statement would best describe the 192.192.192.56 IP address and 255.255.255.240 subnet?

Select one:

- ☐ The subnet mask is borrowing 4 host bits which creates 16 usable subnets with 14 usable hosts per subnet.
- ☐ This is a Class B address that is masking 12 bits for subnetting, yielding 14 valid subnets.
- ☐ This is a Class C address that is using 4 host bits which creates 16 usable subnets with 16 usable hosts per subnet.
- ☐ This is a Class C address that is using 4 host bits which creates 14 subnets with 14 hosts per subnet.

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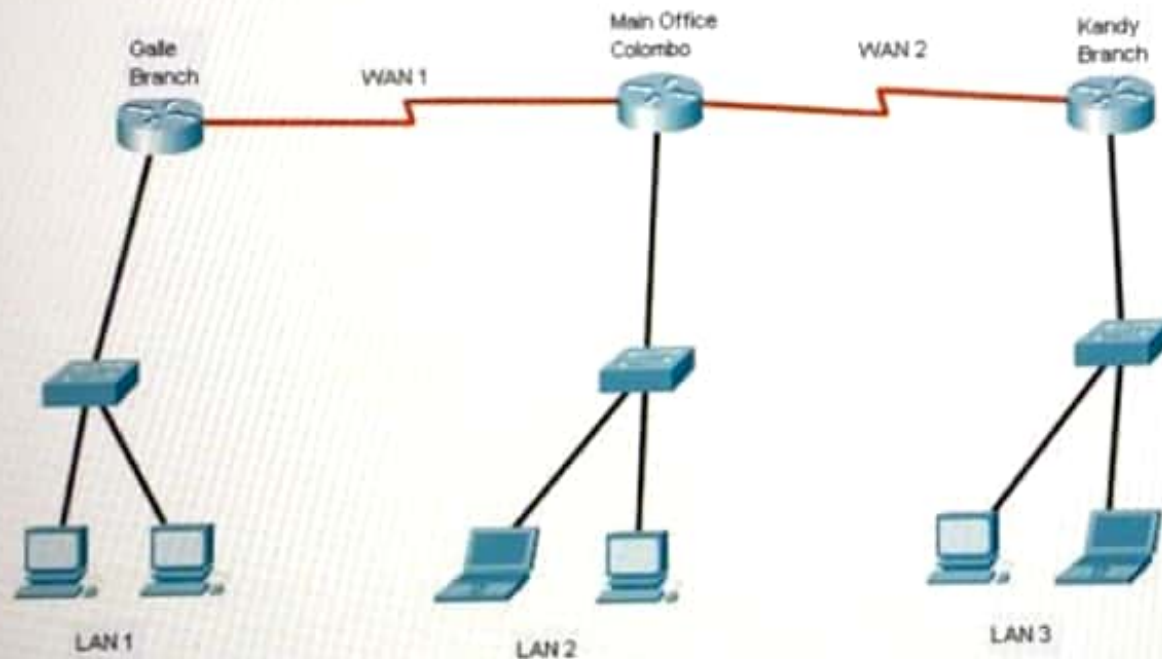
LAN 1 : 192.168.10.0/26

LAN 2 : 192.168.10.64/26

LAN 3 : 192.168.10.128/26

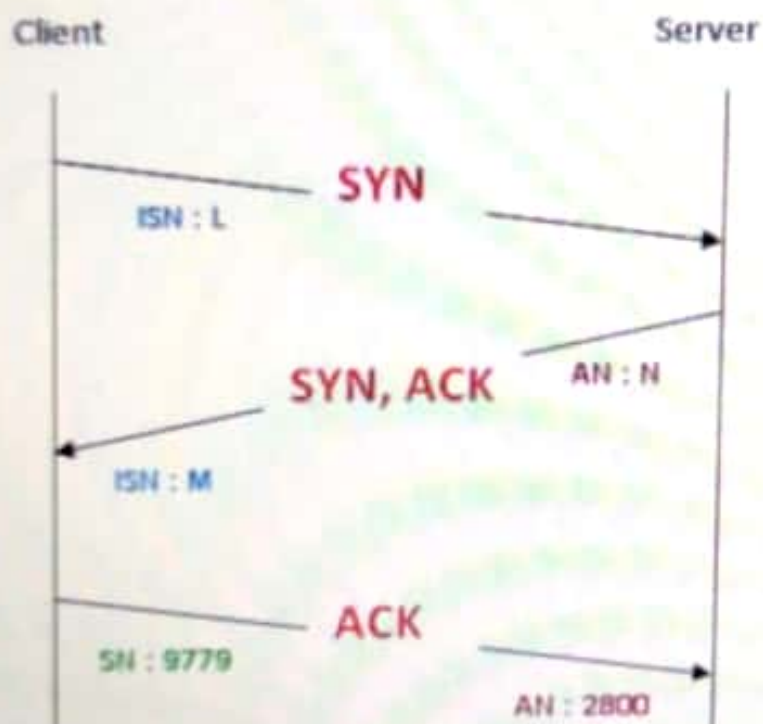
WAN 1 : 192.168.10.192/30

WAN 2 : 192.168.10.196/30



- a) Write down the configuration commands needed to configure the following in the routers. Indicate the router prompt in your answers.
- Set the name of the router in Colombo as Router_Col. (2 Marks)
 - Set the privilege level password of 'COL123' to Router_Col. (2 Marks)
 - Configure IP addresses for Ethernet/Fast Ethernet and serial interfaces of Router_Col based on network diagram. Apply the clock rate 64000 to the serial interface. (3 Marks)
 - Configure a suitable Routing Protocol to Router_Col. (3 Marks)
 - Save the configuration. (2 Marks)
 - Briefly explain how you would test the connectivity between the routers. (2 Marks)
- b) Explain the reason for selecting the routing protocol that you have mentioned in the answer to above 'a) IV'. (2 Marks)
- c) Compare and contrast Distance Vector Routing Protocols and Link State routing protocols. (4 Marks)

Identify the values of L, M, N respectively for the following connection establishment server.



Select one:

- ☐ 9778, 2799, 9778
- ☐ 2799, 9778, 9779
- ☐ 9779, 2799, 9779
- ☐ 9778, 2799, 9779
- ☐ 9777, 2799, 9779

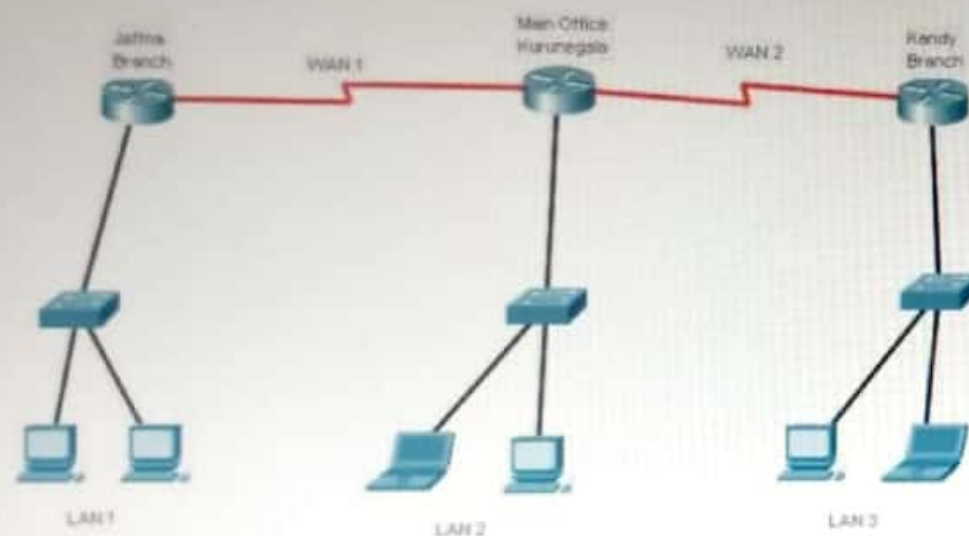
LAN 1 : 192.168.10.0/26

LAN 2 : 192.168.10.64/26

LAN 3 : 192.168.10.128/26

WAN 1 : 192.168.10.192/30

WAN 2 : 192.168.10.196/30



- a) Write down the configuration commands needed to configure the following in the routers. Indicate the router prompt in your answers.
- Set the name of the router in Kurunegala as Router_KNG. (2 Marks)
 - Set the privilege level password of 'KNG123' to Router_KNG. (2 Marks)
 - Configure IP addresses for Ethernet/Fast Ethernet and serial interfaces of Router_KNG based on network diagram. Apply the clock rate 64000 to the serial interface. (3 Marks)
 - Configure a suitable Routing Protocol to Router_KNG. (3 Marks)
 - Save the configuration. (2 Marks)
 - Briefly explain how you would test the connectivity between the routers. (2 Marks)
- b) Explain the reason for selecting the routing protocol that you have mentioned in the answer to above 'a) IV'. (2 Marks)
- c) Compare and contrast Distance Vector Routing Protocols and Link-State routing protocols. (4 Marks)

Question 37

Not yet answered

Marked out of 1.00

Flag question

The following table indicates the values of the M bit and the Fragmentation Offset field of the IP header.

MF	Fragment Offset	
1	0	→ P
1	$\neq 0$	→ Q
0	$\neq 0$	→ R
0	0	→ S

From the above four types of packets (denoted as P, Q, R and S), which packet can be the sample values of a last fragment?

Select one:

- ☐ S
- ☐ P
- ☐ Q
- ☐ R

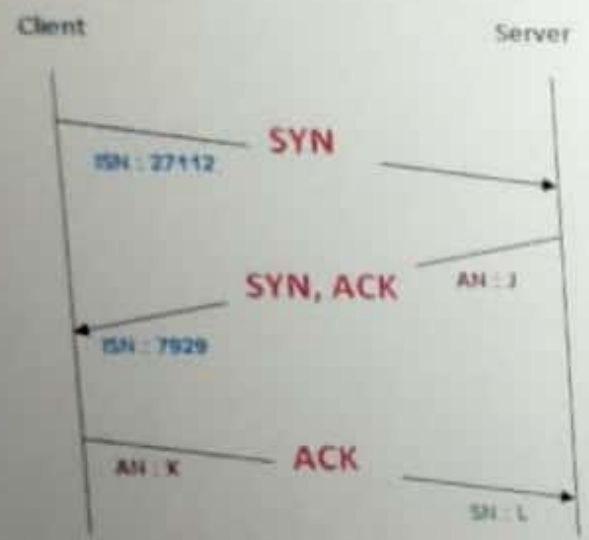
- a) Discuss the advantages of TCP over UDP protocol. (4 Marks)
- b) Briefly explain the Registered port numbers including the number range. (3 Marks)
- c) Explain how a Server TCP process goes through different states when establishing a connection with a Client and exchange data and terminate the connection. Start from the LISTEN state. (5 Marks)
- d) Briefly explain the 'Persistence Timer.' (4 Marks)
- e) Briefly explain the three situations in which the Reset control field in the TCP header ("Reset" control field is set to 1) is used. (4 Marks)



Online Exams

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Identify the values of J, K, L respectively for the following connection establishment process between a client and a



Select one:

- ☐ 27113, 7931, 27113
- ☐ 27112, 7930, 27112
- ☐ 27113, 7930, 27114
- ☐ 27112, 7931, 27113
- ☐ 27113, 7930, 27113

Which of the following statement/s is/are TRUE regarding the Spanning Tree Algorithm ?

Select one or more:

- ☐ A designated port is the port that has the lowest port cost value to get on a given network, compared to other ports on that segment.
- ☐ Path cost is an accumulated value of the port costs from the Root Bridge to other switches in the network.
- ☐ STP (Spanning Tree Protocol) automatically removes layer 2 switching loops by creating the redundant links.
- ☐ The Root port is the port that directly connects to the Root Bridge, or has the shortest path to the Root Bridge.
- ☐ A non-designated port is a port that has the higher port cost than the designated port. STP marks the non-designated port as the forwarding port.