Homework chapter1

1-

Q. What is the total size of the minimum TCP MTU, including TCP and IP overhead but not including data link layer overhead?
A. _____ bytes

2-

22. What is the total size of the minimum TCP MTU, including TCP and IP overhead but not including data link layer overhead?

If the window size field of the acknowledgement TCP segment is 50 KB, and the congestion window size is 50 KB, how many bytes could the sender transmit next time?
_____ KB

Points possible: 10
Unlimited attempts.

Q. Consider the effect of using slow start on a line with a 10-msec round-trip time and no congestion. The receive window is 24 KB and the maximum segment size is 2 KB. How long does it take before the first full window can be sent?
A. _____ msec

Points possible: 10
Unlimited attempts.

140/1140=0.1228

3-ch1-22 20m

Q. Suppose that the TCP congestion window is set to 18 KB and a timeout occurs. How big will the window be if the next four transmission bursts are all successful? Assume that the maximum segment size is 1 KB.
A. _____ KB

Points possible: 10
Unlimited attempts.

Q. A TCP machine is sending full windows of 65,535 bytes over a 1-Gbps channel that has a 10-msec one-way delay. What is the maximum throughput achievable? What is the line efficiency? (give your answer as xx.x)

maximum througput: _____ MB/s

line efficiency: _____ %

Box 1: Enter your answer as a number. Examples: 3, -4, 5.5
Enter DNE for Does Not Exist, oo for Infinity

Box 2: Enter your answer as a number. Examples: 3, -4, 5.5
Enter DNE for Does Not Exist, oo for Infinity

Points possible: 10
Unlimited attempts.

coax同轴电缆

Vaccum 真空 3*10^8

1bit 需 1/10^7s

2*10^8m/s

=20m

4-

What is used at the transport layer to stop a receiving host's buffer from overflowing?

- Segmentation
- Packets
- Acknowledgments
- Flow control

Box 1: Select the best answer

Points possible: 10
Unlimited attempts.

Satellite

Request and response all need to go up and down

Which type of service is provided by TCP?

- request-reply
- acknowledged datagram
- reliable message stream
- reliable byte stream

Box 1: Select the best answer

Points possible: 10
Unlimited attempts.

Submit

TCP uses _____ handshake scheme to establish connections.

- one-way
- two-way
- three-way
- four-way

Box 1: Select the best answer

Points possible: 10
Unlimited attempts.

5-

Which socket primitive is used to block the caller until a connection attempt arrives?

- bind
- listen
- connect
- accept

Box 1: Select the best answer

Points possible: 10
Unlimited attempts.

10247683*8/56000=337.042

10247683*8/1000000=18.874

10247683*8/10000000=1.887

10247683*8/100Mb=0.189 ok

If the window size field of the acknowledgement TCP segment is 50 KB, and the congestion window size is 50 KB, how many bytes could the sender transmit next time?
_____ KB

Points possible: 10
Unlimited attempts.

 . The image is 1600 x 1200 x 3 bytes or 5,760,000 bytes. This is 46080000 bits. At 56,000 bits/sec, it takes about 822.857 sec. At 1,000,000 bits/sec, it takes 46.080 sec. At 10000000 bits/sec, it takes 4.608 sec. At 100000,OOO bits/sec, it takes about 0.461 sec. At bits/sec it takes about 46

6-1048576

 Q. A collection of five routers is to be connected in a point—to—point subnet. Between each pair of routers, the designers may put a high— speed line, a medium—speed line, a low—speed line, or no line. If it takes 100 ms of computer time to generate and inspect each topology, how long will it take to inspect all of them? (give your answer as xxx.xx) seconds

 . Five routers are to be connected in a point-to-point subnet. Between each pair of routers, the designers may put a high-speed line, a medium-speed line, a low-speed line, or no line. If it takes 100 ms of computer time to generate and inspect each topology, how long will it take to inspect all of them?

 Call the routers A, B, C, D, and E. There are ten potential lines: AB, AC, AD, AE, BC, BD, BE, CD, CE, and DE. Each of these has four possibilities (three speeds or no line), so the total number of topologies is 4 At 100 ms each, it takes 104,857.6 sec, or slightly more than 29 hours to inspect them all.

 img

- B

Which of the following description about OSI layers is incorrect? The physical layer is concerned with transmitting raw bits over a communication channel The data link layer is a true end—to—end layer, all the way from the source to the destination The network layer controls the operation of the subnet and determines how packets are routed from source to destination The application layer contains a variety of protocols that are commonly needed by users

待办事项 8-A

Which service model is connection—oriented service? virtual circuit service acknowledged datagram service client—server service datagram service Box 1: Select the best answer

9-ok

What is the name of PDU at the network layer of the OSI reference model? message frame o packet segment Box I: Select the best answer

待办事项 10-C

Some network systems support transmission to a subset of the machines. This mode of operation is called: flow control congestion control multicasting O broadcasting Box I: Select the best answer

Multicasting

Broadly two types of transmission technology are in widespread use – Broadcastlinks(Multicasting)

Broadcasting-mode of operation is called:

physical layer

1-10 |

If the window size field of the acknowledgement TCP segment is 50 KB, and the congestion window size is 50 KB, how many bytes could the sender transmit next time?
_____ KB

Points possible: 10
Unlimited attempts.

2B log2V(2level provide 1bit)=12

Q. Consider the effect of using slow start on a line with a 10-msec round-trip time and no congestion. The receive window is 24 KB and the maximum segment size is 2 KB. How long does it take before the first full window can be sent?
A. _____ msec

Points possible: 10
Unlimited attempts.

Q. Suppose that the TCP congestion window is set to 18 KB and a timeout occurs. How big will the window be if the next four transmission bursts are all successful? Assume that the maximum segment size is 1 KB.
A. _____ KB

Points possible: 10
Unlimited attempts.

Q. A TCP machine is sending full windows of 65,535 bytes over a 1-Gbps channel that has a 10-msec one-way delay. What is the maximum throughput achievable? What is the line efficiency? (give your answer as xx.x)
maximum througput: _____ MB/s
line efficiency: _____ %

Box 1: Enter your answer as a number. Examples: 3, -4, 5.5
Enter DNE for Does Not Exist, oo for Infinity

Box 2: Enter your answer as a number. Examples: 3, -4, 5.5
Enter DNE for Does Not Exist, oo for Infinity

Points possible: 10
Unlimited attempts.

2-10| bandwith*2

Q. In a network that has a maximum TPDU data size of 128 bytes, a maximum TPDU lifetime of 30 sec, and an 8-bit sequence number, what is the maximum data rate per connection?
A. _____ kbps

Points possible: 10
Unlimited attempts.

SNR= 10^1.8=63.0957

Blog2（1+SNR）=13k*6=78

What is used at the transport layer to stop a receiving host's buffer from overflowing?

- Segmentation
- Packets
- Acknowledgments
- Flow control

Box 1: Select the best answer

Points possible: 10
Unlimited attempts.

Ok 3:10| FDM 19600

Which type of service is provided by TCP?

- request-reply
- acknowledged datagram
- reliable message stream
- reliable byte stream

Box 1: Select the best answer

Points possible: 10
Unlimited attempts.

Submit

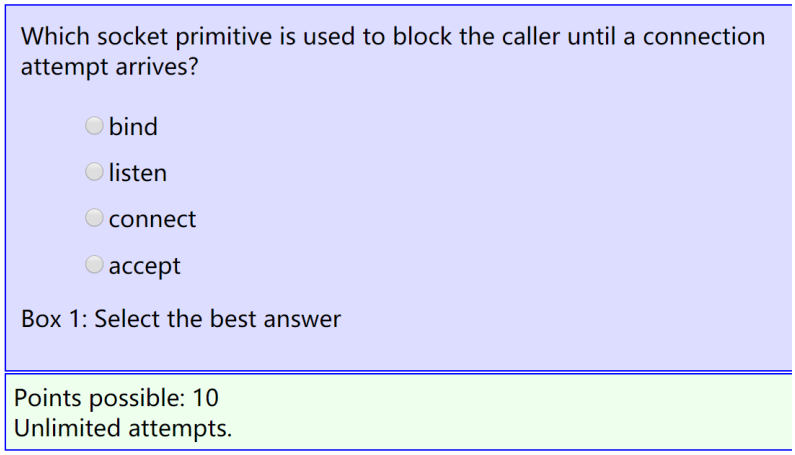
92000+8200=19600

TCP uses _____ handshake scheme to establish connections.

- one-way
- two-way
- three-way
- four-way

Box 1: Select the best answer

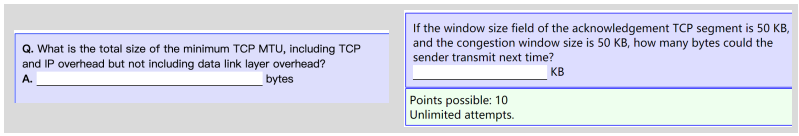
Points possible: 10
Unlimited attempts.



Guard bands 为中间间隔

CMDA +13

4-5|(+3,+1,+1,-1,-3,-1,-1,+1)



5-8|1 0 s 1

Q. A CDMA receiver gets the following chips: (—1 +1 —3 +1 1 — Assuming the chip sequences defined in figure following, 000101110 c:0101'100 001000010 a -1-1-1-1+1-1) which stations transmitted, and which bits did each one send? A. Choise the best answer • • • Station A send Station B send Station C send Station D send sent bit I sent bit 1 sent bit 1 sent bit I sent bit O sent bit O sent bit O sent bit O silence silence silence silence

6-6| 128000x 32?

Q. A signal is transmitted digitally over a 4—kHz noiseless channel with one sample every 125 psec. How many bits per second are actually sent for each of these encoding methods? A. 1) CCITT 2.048 Mbps standard: kbps A. 2) DPCM with a 4—bit relative signal value: kbps A. 3) Delta modulationard: kbps

8000sample/s

2-34. A signal is transmitted digitally over a 4-kHz noiseless channel with one sample every 125 gsec. How many bits per second are actually sent for each of these encoding methods? (a) CCITT 2.048 Mbps standard. (b) DPCM with a 4-bit relative signal value. (c) Delta modulation 'x . , 1/125ps=8000 (a)CCITT 8 , : 80000 = 64Kbpso DPCM , , : = 32Kbps. (c)Delta , : = 8Kbpso

Telephon1

Ok 7-6|13 6

Q. What is the percent overhead on a Tl carrier; that is, what percent of the 1.544 Mbps are not delivered to the end user? How about the El carrier ? A. For the TI carrier: your answer as an integer) A. For the El carrier: your answer as an integer) % (give % (give

. What is the percent overhead on a Tl carrier? That is, what percent of the 1.544 Mbps are not delivered to the end user? How does it relate to the percent overhead in OC-I or OC-768 lines?

37. The end users get 7 x 24 = 168 of the 193 bits in a frame. The overhead is therefore 25/193 = 13%. From Figure 2-41, percent overhead in OC-I is (51.84 - 49.536)/51.84 = 3.63%. In OC-768, percent overhead is (39813.12 -

E1 2/32=0.0625

8-10|50000

Q. A simple telephone system consists of two end offices and a single toll office to which each end office is connected by a I—MHz full-duplex trunk. The average telephone is used to make four calls per 8—hour workday. The mean call duration is 6 min. Ten percent of the calls are long—distance (i.e., pass through the toll office). What is the maximum number of telephones an end office can support? (Assume 4 kHz per circuit.)

 , A simple telephone system consists of two end offices and a single toll office to which each end office is connected by a I-MHz full-duplex trunk. The average telephone is used to make four calls per 8-hour workday. The mean call duration is 6 min. Ten percent of the calls are long distance (i.e., pass through the toll office). What is the maximum number of telephones an end office can support? (Assume 4 kHz per cir- cuit.) Explain why a telephone company may decide to support a lesser number of telephones than this maximum number at the end office.

 . Each telephone makes 0.5 calls/hour at 6 minutes each. Thus, a telephone occupies a circuit for 3 minutes/hour. Twenty telephones can share a circuit, although having the load be close to 100% (p = 1 in queuing terms) implies very long wait times. Since 10% of the calls are long distance, it takes 200 telephones to occupy a long-distance circuit full time. The interoffice trunk has 1,000,000/4000 = 250 circuits multiplexed onto it. With 200 telephones per circuit, an end office can support 200 x 250 = 50,000 telephones. Sup- porting such a large number of telephones may result in significantly long wait times. For example, if 5,()()() (10% of 50,000) users decide to make a long-distance telephone call at the same time and each call lasts 3 minutes, the worst-case wait time will be 57 minutes. This will clearly result in unhappy customers.

1phone 3min/hour--20phone share circuit

200-long distance 支持/curcit

interface：1M/4k=250circuit multiplex on

250*200=50000phones

Ok 9-A

 What is the transmission unit for the physical layer? bit frame packet segment Box 1: Select the best answer

sample

10-5| D

 A noiseless 2—k Hz channel is sampled every I msec. What is the maximum data rate? 1000 bps 2000 bps 4000 bps Can be infinite Box I: Select the best answer

ok11-5| B

 The cable between toll office and the end office of telephone company are known as the local loop trunk microwave line coaxial cable Box I: Select the best answer

 Telephone o Local loop End Office Toll connecting trunk Toll Intermediate switching Office(s) Very high bandwidth intertoll trunks Toll End Office Toll connecting trunk Telephone O Local loop

- 5|B

 An TI channel contains 24 PCM signals, its data rate is 2.048 Mbps 1.544 Mbps 64 kbps 100 Mbps Box 1: Select the best answer

-85

13-A

 An El channel contains 32 PCM signals, its data rate is 2.048 Mbps 1.544 Mbps 64 kbps 10 Mbps Box 1: Select the best answer

14-C

 An El channel contains 32 PCM time slots, the data rate of each time slot channel is 2.048 Mbps 1.544 Mbps 64 kbps 10 Mbps Box 1: Select the best answer

datalink

1 ok CRCs

01111 01111 10011 111010

2 CRCs ok

22. What is the total size of the minimum TCP MTU, including TCP and IP overhead but not including data link layer overhead?

111

3 stopandwait ?

If the window size field of the acknowledgement TCP segment is 50 KB, and the congestion window size is 50 KB, how many bytes could the sender transmit next time?
_____ KB

Points possible: 10
Unlimited attempts.

Q. Consider the effect of using slow start on a line with a 10-msec round-trip time and no congestion. The receive window is 24 KB and the maximum segment size is 2 KB. How long does it take before the first full window can be sent?
A. _____ msec

Points possible: 10
Unlimited attempts.

Q. Suppose that the TCP congestion window is set to 18 KB and a timeout occurs. How big will the window be if the next four transmission bursts are all successful? Assume that the maximum segment size is 1 KB.
A. _____ KB

Points possible: 10
Unlimited attempts.

160

4 ?

1 6781

7 47470.2

15 64kbps

Q. In a network that has a maximum TPDU data size of 128 bytes, a maximum TPDU lifetime of 30 sec, and an 8-bit sequence number, what is the maximum data rate per connection?
A. _____ kbps

Points possible: 10
Unlimited attempts.

What is used at the transport layer to stop a receiving host's buffer from overflowing?

- Segmentation
- Packets
- Acknowledgments
- Flow control

Box 1: Select the best answer

Points possible: 10
Unlimited attempts.

Which type of service is provided by TCP?

- request-reply
- acknowledged datagram
- reliable message stream
- reliable byte stream

Box 1: Select the best answer

Points possible: 10
Unlimited attempts.

Submit

5 ?

TCP uses _____ handshake scheme to establish connections.

- one-way
- two-way
- three-way
- four-way

Box 1: Select the best answer

Points possible: 10
Unlimited attempts.

Which socket primitive is used to block the caller until a connection attempt arrives?

- bind
- listen
- connect
- accept

Box 1: Select the best answer

Points possible: 10
Unlimited attempts.

If the window size field of the acknowledgement TCP segment is 50 KB, and the congestion window size is 50 KB, how many bytes could the sender transmit next time?
_____ KB

Points possible: 10
Unlimited attempts.

772


重要 6 CRCs ok


A CRC generator polynomial is G(X)= many bits will the checksum be? 14 15 16 17 Box 1: Select the best answer How

C

7 sliding window s


Assume the sequence number has 5 bits. What is the maximum number of outstanding sending frames for a go back N protocol? Box 1: Enter your answer as a number. Examples: 3, —4, 5.5 Enter DNE for Does Not Exist, 00 for Infinity

sequence number

 An Example (Il) • Basically, the solution lies in allowing the sender to transmit up to w frames before blocking, instead of l. • How to find an appropriate value for w ? — 1) This capacity is determined by the bandwidth in bits/sec multiplied by the one-way transit time, or the bandwidth- delay product of the link. 50 x 103 x 250 x 10-3 = 12.5 x 103 bits — 2) We can divide this quantity by the number of bits in a frame to express it as a number of frames. —BD = 12.5 x 103 bits / 1000 bits/frame = 12.5 frames — 3) w should be set to 2BD + l. (w = 26 frames) Twice the bandwidth-delay is the number of frames that can be outstanding if the sender continuously sends frames when the round-trip time to receive an acknowledgement is considered. The "+1 " is because an acknowledgement frame will not be sent until after a complete frame is received.

8 selective repeat protocol

 Assume the sequence number has 4 bits. What is the maximum number of outstanding sending frames for a selective repeat protocol? Box 1: Enter your answer as a number. Examples: 3, —4, 5.5 Enter DNE for Does Not Exist, 00 for Infinity

9 CSMA B?

 Which is not the CSMA / CA rule of 802.11? If station X received RTS of station A, X must remain silent for a short time If station X received RTS, but did not receive CTS, then X may not transmit its data. If station X has not received RTS, but received CTS, then X may not transmit its data If station X has received both RTS and CTS, then X may not transmit its data Box 1: Select the best answer

10 gobackn 6ok

 After the sender first sends frames from 0 to 6 and at the end of timeout receives the acknowledgements for frame 1, 3, and 5, the next frame it will re—transmit is frame the protocol is go—back-n) 2 5 6 Box I: Select the best answer . (assume

MAC

HW

1 1030

ch4-2. A group of N stations share a 56-kbps pure ALOHA channel. Each station outputs a 1000-bit frame on an average of once every 100 sec, even if the previous one has not yet been sent (e.g., the stations can buffer outgoing frames). What is the maximum value of N?

Q. What is the total size of the minimum TCP MTU, including TCP and IP overhead but not including data link layer overhead?
A. _____ bytes

1bandwidth = 0.184*56kb/s=10304b/s

每个站 1000/100=10b/s

N=10304/10=1030

2 20ok

Q. What is the baud rate of the standard 10-Mbps Ethernet?

A. 20 Mbaud

What is the baud rate of the standard 10-Mbps Ethernet

3 ok

Q. Consider building a CSMA/CD network running at 100 Mbps over a 1-km cable with no repeaters. The signal speed in the cable is 200,000 km/sec. What is the minimum frame size?

//Consider building a CSMA/CD network running at 100 Mbps over a 1-km cable with no repeaters. The signal speed in the cable is 200,000 km/sec. What is the minimum frame size?

22. What is the total size of the minimum TCP MTU, including TCP and IP overhead but not including data link layer overhead?

1000b

3ge1000

0.01+0.001

4 C

The reason for binary exponential backoff//二进制指数倒退ppt56 in the classical Ethernet is that___

- this algorithm is　simple
- this algorithm is fast
- this algorithm is　adaptive to network load
- this algorithm is　scalable to network size

如果传输失败超过一次，将采用退避指数增长时间的方法（退避的时间通过截断二进制指数退避

算法(truncated binary exponential backoff)来实现

1）确定基本退避时间（基数），一般定为2τ，也就是一个争用期时间，对于以太网就是51.2μs

2）定义一个参数K，为重传次数，K＝min[重传次数，10]，可见K≤10

3）从离散型整数集合[0，1，2，……，(2^k－1)]中，随机取出一个数记做R

那么重传所需要的退避时间为R倍的基本退避时间：即：T＝R×2τ。

4）同时，重传也不是无休止的进行，当重传16次不成功，就丢弃该帧，传输失败，报告给高层协议

5 B

When binary exponential backoff is used, a random number between 0 and ___ is chosen and that number of slots is skipped

- 511
- 1023
- 2047
- 4095

If the window size field of the acknowledgement TCP segment is 50 KB, and the congestion window size is 50 KB, how many bytes could the sender transmit next time?
_____ KB

Points possible: 10
Unlimited attempts.

6 A

A network interface card mainly works at the ___ layer(s)

- physical and data link
- data link and network
- physical and network
- data link and transport

7 D

Which is not one of the important functions provided by **bridges**?

- reducing the collision domain
- increasing the data rate
- increasing the length of domain
- reducing the broadcast domain

8 C-ok

There is a 10 Mbps Ethernet switch with 10 ports each of which is connected to a single computer. Then every computer's data rate is ___Mbps.

- 1
- 2
- 10
- 100

9 B

___ work at the physical layer while ___ work at the data link layer. //ppt107

- Hubs, routers
- Hubs, switches
- Bridges, routers
- Repeaters, hubs

physical：repeater hub

datalink：Bridge switch

network：Router

10 C

What kind of media used by 1000Base-F network?

- Coaxial Cable

- Twisted Pairs
- Fiber Optics
- Power Lines

Network

HW5

IPv4-mask子网

240=1111 0000

100

Q. What is the total size of the minimum TCP MTU, including TCP and IP overhead but not including data link layer overhead?
A. _____ bytes

1 194.47.21.130

22. What is the total size of the minimum TCP MTU, including TCP and IP overhead but not including data link layer overhead?

8points

If the window size field of the acknowledgement TCP segment is 50 KB, and the congestion window size is 50 KB, how many bytes could the sender transmit next time?
_____ KB

Points possible: 10
Unlimited attempts.

//8*16+0=128

Ans=194.（32+15）.（16+5）.(128+2)=194.47.21.130

Q. What is the total size of the minimum TCP MTU, including TCP and IP overhead but not including data link layer overhead?
A. _____ bytes

2 CIDR

![计算机生成了可选文字: Q.Arouterhasthefollowin Address/mask 135，46，56．0/22 135，46，60．0/22 192，53，40，0/23 default (CIDR)entriesinitsroutingtable: Nexthop 211，90，0．1 159，48，0．1 192，188，0，1 220．20，0．1 Foreachofthefollowing甲 addresses,whatdoestherouterdoifa packetwiththataddressarrives? A.Writecorrect丨Paddressofnextho No.《]135，46，57，14 「《《《《氵）135，46，522 印《]19253，40，7《]19253，56，7 Pointspossible:10 Unlimitedattempts. Nexthop](file:///C:/Users/黄琳铃/AppData/Local/Temp/msohtmlclip1/01/clip_image004.png)

根据子网掩码

Q. Suppose that the TCP congestion window is set to 18 KB and a timeout occurs. How big will the window be if the next four transmission bursts are all successful? Assume that the maximum segment size is 1 KB.
A. _____ KB

Points possible: 10
Unlimited attempts.

Q. A TCP machine is sending full windows of 65,535 bytes over a 1-Gbps channel that has a 10-msec one-way delay. What is the maximum throughput achievable? What is the line efficiency? (give your answer as xx.x)
maximum througput: _____ MB/s
line efficiency: _____ %

Box 1: Enter your answer as a number. Examples: 3, -4, 5.5
Enter DNE for Does Not Exist, oo for Infinity

Box 2: Enter your answer as a number. Examples: 3, -4, 5.5
Enter DNE for Does Not Exist, oo for Infinity

Points possible: 10
Unlimited attempts.

Q. In a network that has a maximum TPDU data size of 128 bytes, a maximum TPDU lifetime of 30 sec, and an 8-bit sequence number, what is the maximum data rate per connection?
A. _____ kbps

Points possible: 10
Unlimited attempts.

What is used at the transport layer to stop a receiving host's buffer from overflowing?

- Segmentation
- Packets
- Acknowledgments
- Flow control

Box 1: Select the best answer

Points possible: 10
Unlimited attempts.

3 ok 子网掩码 4094

Which type of service is provided by TCP?

- request-reply
- acknowledged datagram
- reliable message stream
- reliable byte stream

Box 1: Select the best answer

Points possible: 10
Unlimited attempts.

Submit

··· 1111 0000 0000 0000

2的12次 =4096-2

全0全1不能用

TCP uses _____ handshake scheme to establish connections.

- one-way
- two-way
- three-way
- four-way

Box 1: Select the best answer

Points possible: 10
Unlimited attempts.

What is used at the transport layer to stop a receiving host's buffer from overflowing?

- Segmentation
- Packets
- Acknowledgments
- Flow control

Box 1: Select the best answer

Points possible: 10
Unlimited attempts.

4

Which socket primitive is used to block the caller until a connection attempt arrives?

- bind
- listen
- connect
- accept

Box 1: Select the best answer

Points possible: 10
Unlimited attempts.

900bytes

20bytes header

If the window size field of the acknowledgement TCP segment is 50 KB, and the congestion window size is 50 KB, how many bytes could the sender transmit next time?

_____ KB

Points possible: 10
Unlimited attempts.

 Il' datagram Will be tragmented Into wo IY datagrams at ll. No other fragmentation will occur. Link A-RI: Length = 940; x; DF O; MF -O, • Offset = 0 • I Offset = O • I Offset = 0 Link RI-R2: (l) Length (2) Length Link R2-B: (l) Length (2) Length 500, • ID = 460, • ID = 500; ID = 460; ID DF MF = O; Offset = 60 = 0; Offset = 60

5 CIDR

 Q. A large number of consecutive IP address are available starting at 198.16.0.0. Suppose that four organizations, A, B, C, and D, request 4000, 2000, 4000, and 8000 addresses, respectively, and in that order. For each of these, give the first IP address assigned, the last IP address assigned, and the mask in w.x.y.z/s notation. A. Fill your answer in the blank Org# c First IP Last IP net/mask Points possible: 10 Unlimited attempts.

198.16.0.0		**255.255.240.0 /20**
198.16.16.0	**198.16.15.255**	**255.255.248.0 /21**
198.16.23.255	**198.16.23.255**	**255.255.240.0 /20**
		255.255.224.0

 198. 16. o. 0/20 198. 16. 15. 255 198. 16. 23. 255 c 198. 16. 47. 255 198. 16. 95. 255 198. 16.0 0 198. 16. 16. o 198. 16. 32. o 198. 16. 64. o 198. 16. 16. 0/21 198. 16. 32. 0/20 198. 16. 64. 0/19

19

从194.24.0.0开始

![大学剑桥爱丁堡（可用）牛津第一个地址194．24 0 194．24．&0 194．24」2．0]94．24」6．0 最后一个地址 194．24，7．255 194．2生1L255 194．24，巧，255 194．24．3 L255 多少地址 2048 1024 1024 4096 前缀 194．24．0．0/21 194．24．8．0/22 194．24」2．0觇2 194．24．]6．0/20](file:///C:/Users/黄琳铃/AppData/Local/Temp/msohtmlclip1/01/clip_image016.png)

6 IPv6ok 128

 How many bits does the address of IPv6 have? 32 64 128 256 Box 1: Select the best answer

12points？

32*4=128

7 Bx Dok

Without using IPv6, which can solve the problem of running out of IP addresses? class full addressing subnetting class addressing NAT Box I: Select the best answer

5points

Q. What is the total size of the minimum TCP MTU, including TCP and IP overhead but not including data link layer overhead?
A. _____ bytes

8 D

为什么16不行 11110000 00000000

What is the valid host range for subnet 172.16.10.16, mask 255.255.255.240?

 What is the valid host range for subnet 172.16.10.16, mask 255.255.255.240? 172.16.10.20 through 172.16.10.22 172.16.10.16 through 172.16.10.23 172.16.10.17 through 172.16.10.31 172.16.10.17 through 172.16.10.30 Box 1: Select the best answer Points possible: 5 Unlimited attempts.

0001 0000

16+15=31

Valid 全0/1不能作为ip地址 16-31（31代表1111 不能作为地址）17-30

9 A ok

 The checksum in the IP packet covers just the header just the data the header and the data just the source and destination addresses Box I: Select the best answer Points possible: 5 Unlimited attempts.

10 D

A router has two IP interfaces, one IP address is 192.168.11.25/24, and the other IP address is 192.168.13.0 192.168.11.26 192.168.13.255 192.168.13.26 (assume use same subnet mask). Box I: Select the best answer Points possible: 5 Unlimited attempts.

B和25是同一个IP interfaces

全**0**/全**1** 不是有效的**IP**地址

11 B ok

Suppose two hosts A and B have IP address 10.10.1.10 and 10.10.2.10 respectively. If they are in a same subnet, what is the subnet mask? 255.0.o.o 255.255.0.0 255.255.255.0 255.255.255.255 Box 1: Select the best answer Points possible: 5 Unlimited attempts.

12 Cok

Which IP address is a loopback address? I.o.o.l 192.168.0.1 127.0.0.1 172.0.0.1 Box 1: Select the best answer Points possible: 5 Unlimited attempts.

13 Dok

哪个不是不会出现在Internet数据报中的专用地址？

Datagram通过网络传输的数据的基本单元 个报头（header）和数据本身

Which is not the private address that will not appear in Internet datagram? 10.3.18.82 192.168.8.3 10.214.0.1 172.33.8.8 Box 1: Select the best answer Points possible: 5 Unlimited attempts.

The organizations that distribute IP addresses to the world reserves a range of IP addresses for *private networks*.

10.0.0.0 - 10.255.255.255

172.16.0.0 - 172.31.255.255

192.168.0.0 - 192.168.255.255

14 Bok

 Which protocol is used in command ARP ICMP RARP ECHO Box I: Select the best answer Points possible: 5 Unlimited attempts. "ping 10.214.8.9"?

ping 使用的是ICMP协议

15 B

 Which is not a legal IPV6 address? Box I: Select the best answer Points possible: 5 Unlimited attempts.

Transport

1

Q. What is the total size of the minimum TCP MTU, including TCP and IP overhead but not including data link layer overhead?
A. _____ bytes

22. What is the total size of the minimum TCP MTU, including TCP and IP overhead but not including data link layer overhead?

5.5.5 packet fragmentation-

Maximum payloads

1500 bytes for Ethernet and 2272 bytes for 802.11. IP is more generous, allows for packets as big as 65,515 bytes.

A source don't know how small packets must be to get there

This packet size is called the **Path MTU** (**Path Maximum Transmission Unit**). Even if the source did know the path MTU, packets are routed independently in a connectionless network such as the Internet.

If the window size field of the acknowledgement TCP segment is 50 KB, and the congestion window size is 50 KB, how many bytes could the sender transmit next time?
_____ KB

Points possible: 10
Unlimited attempts.

2

Q. Consider the effect of using slow start on a line with a 10-msec round-trip time and no congestion. The receive window is 24 KB and the maximum segment size is 2 KB. How long does it take before the first full window can be sent?
A. _____ msec

Points possible: 10
Unlimited attempts.

3

Q. Suppose that the TCP congestion window is set to 18 KB and a timeout occurs. How big will the window be if the next four transmission bursts are all successful? Assume that the maximum segment size is 1 KB.
A. _____ KB

Points possible: 10
Unlimited attempts.

4

Q. A TCP machine is sending full windows of 65,535 bytes over a 1-Gbps channel that has a 10-msec one-way delay. What is the maximum throughput achievable? What is the line efficiency? (give your answer as xx.x)

maximum througput: _____ MB/s

line efficiency: _____ %

Box 1: Enter your answer as a number. Examples: 3, -4, 5.5
Enter DNE for Does Not Exist, oo for Infinity

Box 2: Enter your answer as a number. Examples: 3, -4, 5.5
Enter DNE for Does Not Exist, oo for Infinity

Points possible: 10
Unlimited attempts.

5

Q. In a network that has a maximum TPDU data size of 128 bytes, a maximum TPDU lifetime of 30 sec, and an 8-bit sequence number, what is the maximum data rate per connection?

A. _____ kbps

Points possible: 10
Unlimited attempts.

6

What is used at the transport layer to stop a receiving host's buffer from overflowing?

- Segmentation
- Packets
- Acknowledgments
- Flow control

Box 1: Select the best answer

Points possible: 10
Unlimited attempts.

7d

Which type of service is provided by TCP?

- request-reply
- acknowledged datagram
- reliable message stream
- reliable byte stream

Box 1: Select the best answer

Points possible: 10
Unlimited attempts.

Submit

8 c

TCP uses _____ handshake scheme to establish connections.

- one-way
- two-way
- three-way
- four-way

Box 1: Select the best answer

Points possible: 10
Unlimited attempts.

9

Which socket primitive is used to block the caller until a connection attempt arrives?

- bind
- listen
- connect
- accept

Box 1: Select the best answer

Points possible: 10
Unlimited attempts.

d

If the window size field of the acknowledgement TCP segment is 50 KB, and the congestion window size is 50 KB, how many bytes could the sender transmit next time?
_____ KB

Points possible: 10
Unlimited attempts.

80-80：answer80

根据后面的数值

window size 官方定义是：在未收到对方确认报文时，发送端能发送的字节（八字节）数；

MSS(Max Segment Size) 是TCP数据包每次能够传输的最大数据分段，其中并不包括TCP首部。而且MSS只出现在syn报文段中。一般来说，MSS的值在不分段的情况会越大越好，比如一个外出接口的MSS值是MTU减去IP和TCP首部长度。

Q. What is the total size of the minimum TCP MTU, including TCP and IP overhead but not including data link layer overhead?
A. _____ bytes

Q. What is the total size of the minimum TCP MTU, including TCP and IP overhead but not including data link layer overhead?
A. _____ bytes