

Which protocol is better for real-time video application over the Internet in term of minimizing the delay?

[A]
UDP

[B]
TCP

[C]
ARP

[D]
ICMP

A datagram is fragmented into three smaller datagrams. Which of the following is true?

[A]

none is correct

[B]

The more fragment bit is set to 0 for all three datagrams.

[C]

The identification field is the same for all three datagrams.

[D]

The do not fragment bit is set to 1 for all three datagrams.

_____ audio/video refers to the broadcasting of radio and TV programs through the Internet.

[A]

Interactive

[B]

Streaming stored

[C]

none is correct

[D]

Streaming live

The second phase of JPEG is _____.

[A]
data compression

☒ [B]
quantization

[C]
none is correct

[D]
DCT transformation

In the DNS, the names are defined in _____ structure

[A]
a linear list

[B]
an inverted-tree

[C]
none is correct

[D]
a graph

In Datagram networks and in Virtual-Circuit networks:

[A]

All are correct

[B]

All packets follow one unique path for the same source-destination pair

[C]

One has all packet to route in one path; One has each packet to route independently

[D]

One has each packet to route independently; one has all packet to route in one path

Assume that the IP address has only 8 bits; first 5 bits are used for network and the remaining bits are used for host. How many subnets and hosts in each subnets can be addressed?

[A]
64 subnets and 32 hosts

[B]
64 subnets and 64 hosts

☒ [C]
32 subnets and 8 hosts

[D]
32 subnets and 32 hosts

In _____ resolution, the resolver expects the server to supply the final answer.

[A]
none is correct

[B]
iterative

[C]
straight

[D]
recursive

What is the combination of an IP address and a port number called?

[A]
A checksum

[B]
A sequence number

[C]
A socket

[D]
A data offset

NAT used at the router to

[A]

Translate the IP address to MAC address

[B]

All of them

[C]

translate the port number of the host in the subnet side to the port number outside the subnet

[D]

translate the IP address of hosts in the subnet to the IP address outside the subnet

Maximum number of data flow through in N-port switch (LAN switch L2):

[A]
 $N-1$

[B]
 $N/4$

[C]
 $N/2$

[D]
 N

The advantage of UDP is

[A]

Providing congestion control

[B]

Providing reliable communication

[C]

None is correct

☒ [D]

Faster than the TCP

In the OSI model, which of the following is an application layer service?

[A]

mail service

☒ [B]

all are correct

[C]

file transfer, access, and management

[D]

network virtual terminal

Urgent data requires the urgent pointer field as well as the URG bit in the _____ field.

[A]
sequence number

☒ [B]
control

[C]
offset

[D]
None is correct

What are general functions of router?

[A]

Determine the next node to receive the message

[B]

All are correct

[C]

Store and forward packets

[D]

Find path for packets and transfer them

Because the sending and the receiving processes may not write or read data at the same speed, TCP _____.

[A]
speeds up the slower process

[B]
none is correct

[C]
uses buffers

[D]
slows down the faster process

A user needs to send the server some information. The request line method is ____

[A]
PATCH

[B]
none of them

☒ [C]
POST

[D]
OPTION

The purpose of MTA (Mail Transfer Agent) is_

[A]

Transferral of message across the Internet

[B]

Envelope creation

[C]

Message preparation

[D]

(Message preparation) and (Envelope creation)

In the _____ encoding scheme, 24 bits become 4 characters, and eventually are sent as 32 bits.

[A]
binary

[B]
8bit

[C]
none is correct

☒ [D]
base64

NAT table in router

[A]

Store the IP address without the port number

[B]

None of them

☒ [C]

Store pairs of the IP address of the host with the port number in form of (IP address, port #)

[D]

Store the MAC addresses with port number

Those followings: a) Slow start; b) Congestion avoidance; c) Fast retransmit; d) Fast recovery, are mechanisms of _____

[A]

TCP flow control

[B]

All of them

[C]

UDP congestion control

[D]

TCP congestion control

In error reporting the encapsulated ICMP packet goes to

[A]

None of them

[B]

the original sender

[C]

the receiver

[D]

a router

Which of the following statement is correct?

[A]
Half-Duplex: Communications that can go only one direction

[B]
Full-Duplex: Communications that can go only one direction

[C]
Half-Duplex: Communications in which both sender and receiver can send at the same time

[D]
Full-Duplex: Communications in which both sender and receiver can send at the same time

Which field in the IP header is used to prevent an IP packet from continuously looping through a network?

- [A]
Identifier
- [B]
Header Checksum
- [C]
Hop Count
- ☒ [D]
Time-to-Live (TTL)

What does NAT stand for?

☒ [A]

Network Address Translation

[B]

Network Address Table

[C]

Network Address Transfer

[D]

Network Address Taking

The local host and the remote host are defined using IP addresses. To define the processes, we need second identifiers called

[A]
Transport number

[B]
none of them

[C]
UDP addresses

☒ [D]
Port number

Jitter is introduced in real-time data by the _____.

[A]
both (error caused during transmission) and (Difference of the delay among packets)

[B]
Difference of the delay among packets

[C]
none is correct

[D]
error caused during transmission

Which ones are correct about Layer 2 Switch?

[A]

None are correct

[B]

It can know the socket number

[C]

Both of them

[D]

It can know the IP addresses

How many collision domains has the computer network with 88 computers, 10 hubs and 2 repeaters

[A]
12

[B]
1

[C]
100

[D]
10

Bridges work in the _____ layers.

[A]
network and transport

[B]
data link and network

☒ [C]
physical and data link

[D]
none is correct

A TCP machine is sending full windows of 65,535 bytes over a 1-Gbps channel that has a 4-msec one-way delay. What is the line efficiency?

☒ [A]
2.6%

☐ [B]
13.1%

☐ [C]
0.8%

☒ [D]
6.5%

What is the data unit used in Internet Protocol (IP)?

[A]

Frame

☒ [B]

Datagram

[C]

Message

[D]

Segment

An HTTP request message always contains _____.

[A]
a status line, a header, and a body

[B]
a header and a body

[C]
none is correct

[D]
a request line and a header

DNS can use the services of _____ using the well-known port 53.

☒ [A]

either (UDP) or (TCP)

☐ [B]

TCP

☐ [C]

none of them

☐ [D]

UDP

The _____ domains define registered hosts according to their generic behavior.

[A]
none is correct

☒ [B]
generic

[C]
country

[D]
inverse

TCP assigns a sequence number to each segment that is being sent. The sequence number for each segment is the number of the _____ byte carried in that segment.

[A]
last

☒ [B]
first

[C]
None is correct

[D]
middle

A set of rules which is used by computers to communicate with each other across a network is called _____

[A]

Network protocols

[B]

Network policies

[C]

Network architectures

[D]

Network conventions

In a Datagram networks,

- [A]
No state about end-to-end connections at the routers
- [B]
Packets may take different paths for the same source-destination pair
- ☒ [C]
All are correct
- [D]
No call setup at network layer

Which one(s) is (are) routing algorithm(s) for IP?

- [A]
None of them
- ☒ [B]
Both (Distance vector algorithms (DVA)) and (Link-state algorithms (LSA))
- [C]
Distance vector algorithms (DVA)
- [D]
Link-state algorithms (LSA)

What is the default subnet mask for a Class C network?

[A]
255.255.0.0

[B]
255.0.0.0

[C]
0.0.0.225

☒ [D]
255.255.255.0

The OSI model consists of _____ layers.

[A]
eight

☒ [B]
seven

[C]
five

[D]
three

In Congestion avoidance of TCP congestion control, when timeout occurs, the congestion window_____

[A]
Reduces by half

☒ [B]
Reduces to 1

[C]
Remains the same

[D]
None is correct

Parity checking _____.

[A]

can detect a single bit error in a transmission

[B]

can detect an even number of bit errors

[C]

adds an odd bit, even if no errors occurred, for safety

[D]

is not used if the circuits are at parity with one another

Many coding systems include an extra bit, called a _____, for error detection purposes.

[A]

parity bit

[B]

checking bit

[C]

control bit

[D]

padding bit

Network layer does not provide reliable transmission because

[A]

none is correct

[B]

There is no acknowledgment process in the network layer

[C]

It uses acknowledgement for every transmitted packet

[D]

It does not use the sequence number

Which part of the mail created by the UA(User Agent) contains the sender and receiver names?

- [A]
envelope
- [B]
address
- ☒ [C]
header
- [D]
none of them

What does that mean by Carrier Sense in CSMA/CD (Carrier Sense Multiple Access/Collision Detection)?

☒ [A]
The station listens for the carrier signal before any transmission

☐ [B]
The station waits for carrier signal arrive before any transmission

☐ [C]
None of them

☐ [D]
Both of them

Those five primitives (Operations): LISTEN, CONNECT, RECEIVE, SEND, and DISCONNECT are for implementing

[A]

Flow control in the Transport Layer

[B]

Connectionless services in the Transport Layer

[C]

None of these

[D]

Connection-Oriented services in the Transport Layer

Flow control ____.

[A]
is a type of Error Detection

☒ [B]
ensures the sender does not too much data that may overwhelm the receiver

[C]
None of them

[D]
controls the congestion of network

Which ones are correct for Repeaters?

[A]

To increase the transmission distance

[B]

Work at physical layer

[C]

All of them

[D]

To amplify the transmitted signal

Relating to CRC, a sequence of bits 100101 can be presented as polynomial

[A]
None of them

[B]
 $x^3 + x^2 + 1$

[C]
 $x^2 + x + 1$

☒ [D]
 $x^5 + x^2 + 1$

Which cable type used for segment length more than 2000 meters?

[A]

Thick coax

[B]

Twisted pair

[C]

Fiber optics

[D]

Thin coax

This command identifies the sender of the message.

[A]
RCPT TO

[B]
HELO

[C]
MAIL FROM

[D]
none of them

Assume that Seoul National University is assigned with IP addresses written as 194.6.96.0 /30, what is the first address and the last address of the university

[A]

194.6.96.0 and 194.6.96.255

[B]

194.6.96.250 and 194.6.96.255

[C]

194.6.96.0 and 194.6.96.3

[D]

194.6.96.1 and 194.6.96.255

With WWW as an example of client-server computer software, the server is:

[A]

The machine that makes WWW documents available.

[B]

The machine that enables you to connect to the internet.

[C]

The machine that you use to display WWW documents.

[D]

All are correct.

What is the service that the UDP protocol provides?

[A]
Error detection

[B]
Flow control

☒ [C]
None is correct

[D]
Guaranteed delivery

A system has an n -layer protocol hierarchy. Applications generate messages of length M bytes. At each of the layers, an h -byte header is added. What fraction of the network bandwidth is filled with headers?

- [A]
 $nh/(M+hn)$
- [B]
None of them
- [C]
 $n/(M+hn)$
- [D]
 $nh/(M+hn-1)$

A three-character data frame: A FLAG B when framing methods using byte stuffing, the output will be

[A]

A FLAG FLAG B

[B]

A B FLAG FLAG

[C]

A ESC FLAG B

[D]

A B ESC FLAG

What is the protocol that network devices (for example: modem ADSL) use to assign IP address to PCs in LAN automatically?

[A]
IGRP

[B]
HTTP

[C]
DHCP

[D]
OSPF

In CRC, if the generator is x^4+x+1 , then which one is added in to the frame before dividing

[A]
11111

[B]
0000

[C]
1111

[D]
00000