NWC203c-Fullkey - course

Networking (FPT University)

Course 1

Week 1

Practize quiz

1. Which of the following networks use store-and-forward switching operation?

Telegraph networks

Computer networks

2. There are similarities between message switching and packet switching. Which of following that applies to packet switching but not to message switching?

Supporting multiple applications

3. Which of the following networks can be connection-oriented?

Telephone networks

Computer networks

4. A *protocol* is a set of precise and unambiguous rules that governs

All of the above

5. DNS is a domain-name-service that responds to queries of domain name to IP address or IP address to domain name. DNS uses services provided by

UDP

6. A network used to join the individual networks at different sites into one extended network is called

VPN

7. Upon receipt of a bad segment, UDP?

It doesn't do flow and error control

Summative Quiz

1. Which of following protocol is HTTP built upon?

TCP

2. Which of following requirements are necessary for packet networks to support multiple and diverse applications?

All of above

3. What was the concern of the telephone system that motivated the ARPANET design?

Vulnerability

4. Which of the following is an application layer protocol?

HTTP

5. Which of the following are features of ARPANET design?

All of the above

6. Bluetooth is an example of

Personal area network

7. In the layer hierarchy as the data packet moves from the upper to the lower layers, headers are

Added

8. The _____ is the physical path over which a message travels

Medium

9. Three or more devices share a link in _____ connection

Multipoint

10. Which of the following is true for Transport Control Protocol

Connection oriented

Week 2

Practize quiz

1. Which OSI layer is responsible for providing end-to-end communication with reliable service?

Transport layer

2. Which OSI layer is responsible for dividing the transmitted bit stream into frames?

Data link layer

3. Which OSI layer is responsible for determining which route through the network to use?

Network layer

4. Which feature does the data link layer and transport layer have in common?

Flow control

5. Which protocol glues the network of networks together as the Internet?

IP

Summative Quiz

1. In a LAN, which address is used to transfer frames to appropriate destination?

Physical address

2. Suppose an application layer entity wants to send an L-byte message to its peer process, using an existing TCP connection. The TCP segment consists of the message plus 20 bytes of header. The segment is encapsulated into an IP packet that has an additional 20 bytes of header. The IP packet in turn goes inside an Ethernet frame that has 18 bytes of header and trailer. What is the bandwidth utilization in terms of the percentage of the transmitted bits in the physical layer corresponds to message information if L = 500 bytes?

90%

3. Of the following services, which service(s) does the IP layer provides?

None of the above

4. Which of the following is true about the ways in which the OSI reference model and TCP/IP reference model differ.

All of the above

5. Which of following statements is true about how the data link layer and transport layer differ?

Data link layer is concerned with framing and the transport layer is not

6. This layer is an addition to OSI model

Presentation layer and session layer

7. The functionalities of presentation layer includes

All of the above

Week 3

Practize quiz

1. Which of the following applications would you select TCP protocol for?

File transfer

Web browsing

2. In BSD socket API, which *type* of socket is used to create a TCP socket?

SOCK_STREAM

3. In BSD socket API, which *type* of socket is used to create a UDP socket?

SOCK_DGRAM

4. In BSD socket API, which system call is used to assign a network address to the socket?

bind()

5. In BSD socket API, if a client knows the server name but not server's network address, what system call should the client use to get server's network address?

gethostbyname()

6. In a transmission system, which of the following statement is true for a receiver

Recieves energy from medium

Converts recieved signal into a form suitable for delivery use

7. In digital transmission, long distance digital communications require the use of a generator to recover original data sequence and re-transmits on next segment

True

8. In twisted pair, a category 5 UTP cable can support a data rate of up to 16MHz

False

9. Which of the following statement is true for optical fiber

All of above

10. Which of the following are advantages of optical fiber

Noise immunity

No corrosion

Summative Quiz

1. In BSD socket API, which call is usually used for transmitting data in the connectionless mode?

sendto()

2. Which of following statement about TCP/UDP sockets is wrong?

TCP is faster than UDP

3. Which of following are commonly used as digital communication medium?

All of the above

4. Consider a network link that has distance of 100 meters, and signal traverses at the speed of light in cable 2.5 x 10^8 meters per second. The link has transmission bandwidth of 100 megabits/second (100 x 10^6 bits per second). The packet size is 400 bits. What is the signal propagation delay?

4 x 10^-7 second

5. Consider a network link that has distance of 100 meters, and signal traverses at the speed of light in cable 2.5 x 10^8 meters per second. The link has transmission bandwidth of 100 megabits/second (100 x 10^6 bits per second). The packet size is 400 bits. What is the packet transmission delay?

4 x 10^-6 second

6. An API allows application programs to access certain resources through a predefined interface?

True

7. In transport protocol, which of the following statements is true for User Datagram Protocol

It enables best-effort connectionless transfer of individual block of information

8. Which of the following sentences are true for connectionless stream mode of service

No setup overhead and delay

Multiple write/read between peer processes

Destination address with each block

9. In transmission delay, in order to reduce the number of bits in a message we use data compression

True

10. Which of the following is true of data compression algorithms

Represent the information using fewer bits

Recover original information exactly

Recover information approximately

Week 4

Practize quiz

1. Given a 7-bit information frame (0, 1, 0, 1, 1, 0, 1), what is the even parity bit?

0

2. Which of following statements are true for single-bit parity error detection?

It can detect all single bit errors in an information frame

It can detect all triple bit errors in an information frame

3. Which of following statements are true for two-dimensional parity error detection?

All of above

4. Assume bit errors occur at random. If each bit has 50% probability to be in error by transmission. What is the probability of a four-bit frame to be in error by transmission?

1/16

5. What is the binary sequence that corresponds to polynomial code X^3 + x^2 + 1?

1101

6. Block codes are generated using _____. || A cyclic code can be generated using _____.

Generator matrix || Generator polynomial

7. Which of the following is true for two-dimensional parity check

Arrange information in columns

More parity bit to improve coverage

8. Polynomial codes are implemented using shift register circuits

True

9. Polynomial codes are implemented using shift register circuits

11100101

10. Using Euclidean Division, what will be the remainder of 70 by 999 where 70 is the divisor and 999 is the dividend

19

Summative Quiz

1. Given an information polynomial code I(x) = X^7 + x^6 + x^1 + 1, which is its corresponding per-bit information frame?

11000011

2. What is the remainder obtained by dividing x^7 + x^5 + 1 by the generator polynomial x^3 + 1?

x^2 + x + 1

3. Given a generator polynomial g(x) = x^3 + x + 1. Consider the information sequence 1001. By CRC method, what is the resulted codeword for transmission?

1001110

4. Which of following generator polynomial can detect all single bit errors in an information frame?

g(x) = x + 1

5. Internet protocols use check bits to detect errors, instead of using CRC polynomial. The primary rationale is

Simplicity of implementation

6. The two basic approaches in error control are error prevention and detection, and error correction and re-transmission

False

7. Find parity bit for 1001011

0

8. The divisor in a cyclic code is normally called the _____.

Generator

9. The checksum of 0000 and 0000 is

1111

10. In ASCII, a single parity bit code can detect _____ errors.
An odd number of

Course 2

Week 1

Practice Quiz

1. In networks where errors are infrequent, which approach is favored for efficiency?

End to end approach

2. Which of the following statements is true about the stop-and-wait ARQ protocol?

Stop-and-wait is only efficient if the link delay-bandwidth product is small

3. Consider a situation where an interactive application produces a packet to send each keystroke from the client and the server echoes each keystroke that it receives from the client. Which of following strategies for sending ACK frames in a Go-Back-N is appropriate for the situation?

send an ACK frame when the next piggyback opportunity arises

4. Consider a bulk data transfer application where a server sends a large file that is segmented in a number of full-size packets that are to be transferred to the client. Assume the channel has a low probability of error. Which of following strategies for sending ACK frames in a Go-Back-N is appropriate for the situation?

send an ACK frame after every other frame is received

5. Consider Selective Repeat ARQ flow control protocol. In the following scenario, what should be the value of frame number *x* at receiver B?

4

6. ARQ protocols combine error detection, retransmission and sequence numbering to provide reliability

True

7. A service model specifies a level of performance that can be expected in the transfer of information.

True

8. A service offered at a given layer can include which of the following feature(s)

All of the above

9. Digital communication technologies may introduce errors in communication, which of the following can be used to provide reliable communication

TCP

HDLC

10. Ensuring that information is not altered during transfer is associated with

Intergrity

Summative Quiz

1. Given 3 bits for sequence numbers, what is the maximum sliding window size at the receiver in Go Back 3 ARQ?

7

2. Given 3 bits for sequence numbers in Selective Repeat ARQ. If the sender already set the sliding window size to be 4, what is the maximum sliding window size at the receiver?

None of above

3. Consider Selective Repeat ARQ flow control protocol. In the following scenario, what should be the value of frame number *x* at receiver B?

2

4. In the scenario above, what should be the value of frame number *y* at receiver B?

7

5. If the probability of error is very low in a communication link, which of the following statements is true about performance of ARQ protocol?

Go-back-N ARQ and Selective Repeat ARQ protocols have similar performance

6. In peer-to-peer protocol, the purpose of Automatic Repeat Request is

to ensure a sequence of infomation packet is delivered in order

to ensure a sequence of infomation packet is delivered without errors or duplication despite transmission errors and losses

7. Which of the basic elements of ARQ is associated with negative acknowledgement

NAKs

8. In Go-Back-N ARQ, a procedure where transmission of a new frame is begun before the completion of time of the previous frame transmission is called

Pipelining

9. In Stop-and-Wait protocol, sequence number are not required

False

10. The disadvantage of Stop-and-Wait protocol

All of above

Week 2

Practice Quiz

1. Which of the following statements are true for the best-effort service of IP?

All of the above

2. Which of following services belong to the data link layer?

All of the above

3. Which ARQ flow control protocol is used by TCP?

Selective repeat

4. By framing, frame boundaries can be determined using

All of the above

5. Which of following statements are true about framing protocols?

All of the above

6. In IP network, which of the following statement is incorrect

Packets always arrive on time

7. Framing involves identifying the beginning and end of a block of information within a digital stream

True

8. Which of the following statements are true for PPP byte stuffing

All of the above

9. In PPP authentication, which of the following is true for *Password Authentication Protocol*

Initiator must send ID and password

After several attempts, LCP closes link

Transmitted unencrypted, susceptible to eavesdropping

10. In HDLC frame format, flag is used to identify secondary station (1 or more octets)

False

Summative Quiz

1. Perform the bit stuffing procedure for the following binary sequence: 1101111111011111110101. What is the outcome?

1101111101101111110110101

2. Perform bit de-stuffing for the following sequence: 1110111110111111001111110.

11101111111111011111

3. PPP is a data link protocol for point-to-point lines in Internet. Its framing is based on which of the following?

Byte stuffing

4. HDLC is another data link control protocol widely in use. Its framing is based on which of the following?

Bit stuffing

5. Which of following statements are true for HDLC?

All of above

6. In PPP authentication, which of the following is true for Challenge-Handshake Authentication Protocol (CHAP)

Authenticator can reissue challenge during session

Initiator and authenticator share a secret key

7. In error detection and loss recovery, which of the following statement is correct

All of above

8. In multiplexing, Last IN First Out (LIFO) is used to determine the order of packet transmission

False

9. Generic Framing Procedure (GFP) allows the implementation of multiple transport modes that may coexist within the same transport channel

True

10. In Generic Framing Procedure (GFP), which of the following sentences are correct

GFP uses a variation of HEC-based self delineation technique

GFP uses an explicit payload length indicator provided in its frame header to accommodate variable length PDUs

GFP provides flexible encapsulation framework that supports either a fixed or variable length frame structure

Week 3

Practice Quiz

1. What is the primary function of medium access control?

It is to minimize or eliminate the incidence of collisions of a shared communication link.

2. What is the primary benefit provided by the Slotted ALOHA compared to ALOHA?

Higher maximum throughput

3. What is the vulnerable period of collisions in ALOHA?

Two frame transmission time

4. What is the vulnerable period of collisions in Slotted ALOHA?

One frame transmission time

5. What is the vulnerable period of collisions in Carrier Sense Multiple Access (CSMA)?

One propagation delay

6. The primary function of Media Access Control is to minimize or eliminate the instance of the collisions to achieve a reasonable utilization of the medium

True

7. In media sharing techniques, which of the following are channelization approaches

Time Division Multiple Access

Frequency Division Multiple Access

Code Division Multiple Access

8. Corresponding box of Carrier Sense Multiple Access/Collision Detection can be replaced by one of the

Persistent process

9. Random access is also called the

Connection methods

10. In Carrier Sense Multiple Access (CSMA), possibility of collision still exist because of

Propagation delay

Summative Quiz

1. Polling is a scheduling approach for dynamic medium access control. Which of following statements are correct?

All of above

2. In a collision-free reservation system that has a large number of light-traffic stations, and the delay-bandwidth product is larger than 1. Which of following MAC protocol is a good fit for stations to reserve mini-slots?

Slotted ALOHA

3. In Carrier Sense Multiple Access with collision detection (CSMA-CD), how long will it take a collision to be detected and resolved?

Round trip propagation delay

4. Suppose that the ALOHA protocol is used to share a 56 kbps satellite channel. Suppose that frames are 1000 bits long. What is the maximum throughput of the system in number of frames per second.

10 frames per second

5. Consider building a CSMA/CD network running at 1Gbps over a 1-km cable. The signal speed in the cable is 200,000 km/sec. What is the minimum frame size?

1250 bytes

6. Consider building a CSMA/CD network running at 1Gbps over a 1-km cable. The signal speed in the cable is 200,000 km/sec. What is the minimum frame size?

Does not scale well to large numbers of users

Inflexible in allocating bandwidth to users with different requirements

Inefficient for bursty traffic

7. Time-out period is equal to maximum possible propagation delay of

Round trip

8. In Carrier Sense Multiple Access (CSMA), if station senses medium before trying to use it then chance of collision can be

Reduced

9. Carrier Sense Multiple Access (CSMA) is based on medium called

Sense before transmit

10. Which of the following is not true for MAC scheduling

Reduced computational or procedural complexity

Week 4

Practice Quiz

1. Which of following features are typically true for local area networks?

All of the above

2. Use HDLC and Ethernet to identify similarities between medium access control and data link control protocols. Which of following statements are true?

Both contains framing information that delineates the beginning and end of each frame.

Both check the CRC in the received frames for errors

3. Use IEEE 802.3 and IEEE 802.11 to discuss differences between wired and wireless LANs. Which of following statements are true about the differences?

All of the above

4. Which of following is not a primary responsibility of the MAC sublayer in LANs?

Reliable connection-oriented service

5. In Ethernet, slot time that is at least the round-trip propagation delay, is the critical system parameter for

All of the above

6. Which one of the following event is not possible in wireless LAN.

Collision detection

7. In 802.11 protocol, MAC can alternate between Contention Periods (CPs) and Contention-Free Periods (CFPs)

True

8. CSMA/CD is not used in DCF because

a station is unable to listen to the channel for collisions while transmitting

9. In infrastructure network supporting voice and data traffic, data traffic is transported through the CP and voice traffic through the CFP

False

10. In 802.11 protocol, which of the following statements are true for Basic Service Set (BSS)

Stations in BSS can communicate with each other

Location in a Basic Service Area (BSA)

Summative Quiz

1. Consider a Gigabit Ethernet hub with stations at a 100-meter distance and average frame size of 512 bytes. Assume the propagation speed is at 2/3 of light speed. What is the value of normalized delay-bandwidth product?

0.122

2. Wireless data communication is compelling, because of

Its easy and low-cost deployment

Its support to personal and mobile devices

3. Why not use CSMA/CD in a wireless LAN? The primary reason is

The hidden station problem

4. In IEEE 802.11 MAC for wireless LANs, which of following inter-frame space (IFS) is used to transmit high-priority frames such as ACKs?

SIFS

5. Which of following statements identifies the similarity between HDLC (data link control) and Ethernet (medium access control)

Both contain framing information that delineates the beginning and end of each frame

6. Which multiple access technique is used by IEEE 802.11 standard for wireless LAN?

CSMA/CA

7. Which of the following are management services offered by the MAC sublayer in wireless LAN

Roaming within ESS

Power management

8. In CSMA/CA, An amount of time divided into slots called

Contention Window

9. In medium access control sublayer, medium usage is mediated by the access control during contention period

False ^^

10. In Carrier Sense Multiple Access/Collision Detection (CSMA/CD), to continue transmission process we use a

Loop

Course 3

Week 1

Practice Quiz

1. Which layer LAN bridges work on?

Medium access control

2. One can use repeaters, bridges and routers to interconnect two LANs. Which of the following approaches will make local traffic stay in its own LAN?

Bridges

Routers

3. Of the following network layer functions, which one is optional?

Congestion control

4. Of the following, which is a basic function of transparent bridge?

All of the above

5. It is possible for a network layer to provide a choice of services to the user of the network. Which of following the IP network layer offers

Best-effort connectionless service

6. The network layer is considered the most complex layer because of the following reasons

Requires coordinated actions of multiple, geographically distributed network elements

Challenges such as addressing and routing

User scalability

7. An end-to-end function is best implemented at a lower level than at a higher level

False

8. Which of the following is an essential network function

All of the above

9. In network layer, which of the following statement is true for packet networks

All of the above

10. The main purpose of access multiplexer is to combine the typically bursty traffic flows from the individual computers into aggregate flows

True

Summative Quiz

1. Which of the following functions can a home router perform?
All of the above
2. Consider a three hop network from the source to the destination. Let *m* be the packet transmission time at each hop. Let *n* be the propagation delay at each hop. Assume there is no

queuing delay and processing time at each hop. Based on store-and-forward, what is the total time for the packet to be transmitted to the destination?
3m + 3n
3. Consider a three hop network from the source to the destination. Let *m* be the message transmission time at each hop. Let *n* be the propagation delay of each hop. Assume there is no queueing delay and processing time at each hop. Based on store-and-forward, what is the total time for three packets to be transmitted to the destination by packet pipelining?
5m + 3n
4. Six stations (S1-S6) are connected to an extended LAN through transparent bridges (B1 and B2), as shown in the following figure. Initially, the forwarding tables are empty. Both bridges use backward learning to build their tables. Suppose station S2 transmits a frame to S1. Which of following statements is correct?
The frame will reach both bridges B1 and B2
5. Following the above question. Suppose stations S 3 transmits a frame to S5. Which of following statements is correct?

The frame will reach both bridges B1 and B2

6. One can use repeaters, bridges and routers to interconnect two LANs. Which of the following approaches will make local traffic appear in both LANs?

Repeater

7. Packet pipelining can lead to latency in message delivery

False

8. In internet, switching is done by using datagram approach to packet switching at the

Network layer

9. A transparent bridge's duties include

All of the above

10. For a 10Mbps Ethernet link, if the length of the packet is 32bits, the transmission delay is(in microseconds)

3.2

Week 2

Practice Quiz

1. Which of following networks represents an example of virtual circuit switching at the network layer?

ATM

2. Consider a three hop network from the source to the destination. Let *m* be the message transmission time at each hop. Let *n* be the propagation delay of each hop. Assume there is no queueing delay and processing time at each hop. Based on **cut-through** switching, what is the total time for three packets to be transmitted to the destination?

3m + 3n

3. Which of following issue exists in virtual-circuit subnet but not in datagram subnet?

State information

4. Which of following describe general goals in a routing algorithm?

All of the above

5. Which of following describe benefits of flooding, a specialized routing approach?

All of the above

6. A Virtual-Circuit Network (VCN) is normally implemented in the

Data link layer

7. In routing approaches, which of the following statement is true for deflection routing

Fixed, preset routing procedures

No route synthesis

8. To reduce size of routing table, routers do lookup table on MAC address

False

Summative Quiz

1. Flooding may easily swamp the network as one packet creates multiple packets, possibly in exponential growth rate. What are possible means to reduce resource consumption in the network?

All of the above

2. What are possible metrics for routing?

All of the above

3. Consider the network as shown in the figure. We use the Bellman-Ford algorithm to find the set of shortest paths from all nodes to the destination node 2. Each node maintains an entry (n, cost) about the next node along the current shortest path and the current minimum cost from the node to the destination. Initially, each node has entry (-1, infinity).

1

5

4. Following the above question, in the second algorithm iteration, which nodes will update their entries and inform their neighbors?

All of the above

5. Following the above question, in the third algorithm iteration, which nodes will update their entries and inform their neighbors?

6

6. In link state routing, after the construction of link state packets new routes are computed using

Dijkstra's algorithm

7. A subset of a network that includes all the routers but contains no loops is called

Spanning tree

8. In a router, which of the following statement is true for creating routing tables

All of the above

9. In a virtual-circuit packet network, routing is determined during connection set-up

True

10. In deflection routing, bufferless operation is considered a disadvantage due to packet loss

False

Week 3

Practice Quiz

1. What is the root problem of Bellman-Ford algorithm for distance vector approach?

Counting to infinity

2. What is the root problem of link state routing?

Flooding overhead

3. Which of following describe the benefits of link state routing compared to distance vector routing?

All of the above

4. Which of following is the implementation of distance vector approach in the IP routing protocol?

RIP

5. Which of following is the implementation of link state approach in the IP routing protocol?

OSPF

6. In Routing Information Protocol (RIP), the use of max number limited to 15 limits the count-to-infinity problem

True

7. In an OSPF network, routers in area only knows complete topology inside area and limits the flooding of link-state information to area

True

8. In link state routing, which of the following are possible steps taken to resolve the problem of old update messages

Add time stamp to each update message

Add sequence number to each update message

9. In Asynchronous Transfer Mode (ATM), which of the following is an examples of supported services

All of the above

10. In Asynchronous Transfer Mode (ATM), the packet structure attribute simplifies implementation and ensures high speed transfer

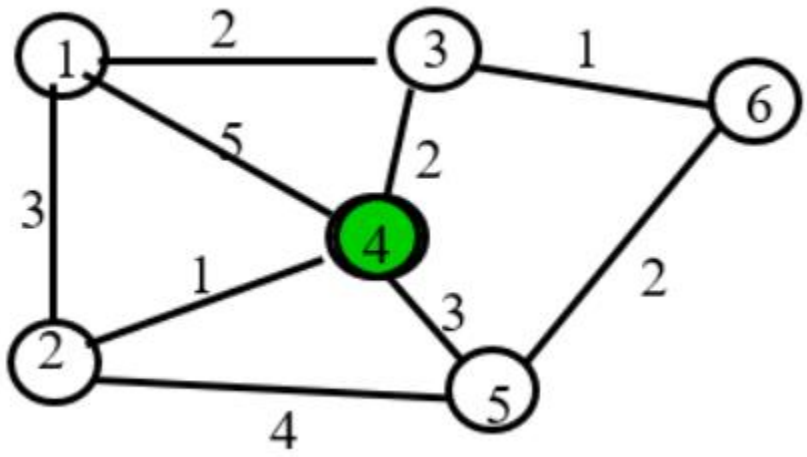
False

Summative Quiz

1. Which of the following features are true for asynchronous transfer mode (ATM)?

All of the above

2. Consider the network as shown in the figure. We use the Dijkstra's algorithm to find the set of shortest paths from all nodes to the destination node 4. In Dijkstra's algorithm, each iteration the next closet node is added to the set with the root node.



At the first iteration, which node will be added to the set N?

2

3. Following the question above, at the second iteration, which node will be added to the set N?

3

4. Following the question above, at the third iteration, which node will be added to the set N?

5

5. Following the question above, at the fourth iteration, which node will be added to the set N?

6

6. In RIP operation, which of the following statement is correct

All of the above

7. What are the limitations of RIP protocol

Limited metric use

Slow convergence

8. In Open Shortest Path First (OSPF), which of the following statements are correct

Each router builds an identical link-state database

Enables each router to learn complete network topology

Allows routers to build shortest path tree with router as root

9. Which of the following is a type of router defined in OSPF

All of the above

10. In a distance vector routing, if a link fails

Neighboring routers exchange routing tables that may use failed links

Week 4

Practice Quiz

1. Based on traffic granularity, which of the following levels is traffic management not usually classified into?

Byte level

2. Which of following statements is true for FIFO queueing?

All of the above

3. Which of following is not a packet-level mechanism?

Idealized system assumes fluid flow from queues

4. What are typical end-to-end Quality-of-Service factors?

All of the above

5. By Random Early Detection (RED), when a given source transmits at a higher rate than others, the source will

Suffers a higher packet-dropping rate

6. The simplest approach to queue scheduling is First-In, First-out queueing, where all packet flow make use of different buffer

False

7. In FIFO queueing, delay and loss of packets depends on _____ and _____

inter-arrival, packet lengths

8. Which of the following is a feature of fair queueing

Idealized system assumes fluid flow from queues

9. In buffer management, drop priorities requires packet to drop when buffer is full

False

10. What are the key mechanisms in Open-Loop Control

Traffic shaping

Admission control

Policing

Summative Quiz

1. Which of the following statements is wrong about fair queuing?

Fair queueing attempts to provide equal-size buffers to flows

2. To guarantee network performance during the lifetime of admitted flows, open-loop control relies on the following mechanism except:

Head-of-Line queueing

3. Which of following statements about leaky bucket is wrong?

In the leaky bucket, the packet output rate can be variable

4. Consider a token bucket approach for traffic shaping. A token is generated every 5 micro-seconds. Each packet can hold 48 bytes of data. What is the sustainable data transmission rate by the token bucket?

76.8 Mbps

5. Upon which of the following condition is token bucket and leaky bucket the same?

Token bucket size is zero

6. In Head of Line (HOL) priority queueing, which of the following statement is a feature for this approach

All of the above

7. In buffer management, which feature requires packet to drop when buffer is full

Drop strategy

8. In buffer management, which of the following statement is correct for Random Early Detection (RED) technique

Improves performance of cooperating TCP sources

Packets produced by TCP will reduce input rate in response to network congestion

9. In Closed-Loop flow control, which of the following mechanism is used in congestion control to regulate the flow from sources into network

Buffer length

Link utilization

10. In congestion warning, the feedback mechanism can be implicit or explicit. Which of the following is an example of implicit feedback

A time-out due to missing acknowledgement

Course 4

Week 1

Practice Quiz

1. Which of the following protocols work at IP layer?

All of the above

2. Which of the following packet header length cannot be used in an IPv4 packet header?

30 bytes

3. How many bits used for header checksum in IPv4 packets?

16 bits

4. What is the dotted notation of an IP address of 10000000 10000111 01000100 00000101 ?

128.135.68.5

5. Given a network address 128.100.0.0, what is its network class type?

Class B

6. Which of the following is provided at the IP layer

Both of the above

7. You need to subnet a network that has 5 subnets, each with at least 16 hosts. Which will be your closest choice

255.255.255.224

8. What is the subnetwork number of a host with an IP address of 172.16.66.0/21

172.16.64.0

9. What is the first valid host on the subnetwork that the node 172.30.190.198/24 belongs to?

172.30.190.1

10. Based on 1.1.1.0/24, the IP address would be:

Class A

Summative Quiz

1. Which of following is the range of IPv4 addresses spanned by Class C?

192.0.0.0 to 223.255.255.255

2. If a subnet needs to accommodate up to 500 hosts. How many bits for HostID would be sufficient?

9

3. Consider a Class B network, where the subnet ID takes 9 bits. What will be the subnet mask?

11111111 11111111 11111111 10000000

4. Given a subnet mask 255.255.255.240, how many hosts the subnet can support?

14

5. A host in an organization has an IP address 150.32.64.34 and a subnet mask 255.255.240.0. What is the address of this subnet?

150.32.64.0

6. What is the maximum number of IP addresses that can be assigned to hosts on a local subnet that uses the 255.255.255.224 subnet mask

30

7. When calculating usable hosts per subnet, the following formula is used 2^bits - 2. For what reason is two subtracted? (choose two)

Broadcast

Network

8. How many hosts can be addressed on 10.0.0.0/16?

65534

9. Which of the following is a valid IP host address given the network ID of 191.254.0.0 while using 11 bits for subnetting?

191.254.1.29

10. DISCO Corporation has been assigned the Class B network address 165.87.0.0. DISCO needs to divide the network into eight subnets. What subnet mask should be applied to the network to provide the most hosts per subnet?

255.255.240.0

Week 2

Practice Quiz

1. Which class of IP addresses does CIDR performs aggregation on?

Class C

2. Using a CIDR notation, a prefix 205.100.0.0 of length 22 is written as 205.100.0.0/22. What network mask that the /22 notation indicates?

255.255.252.0

3. Perform CIDR aggregation on the following /24 IP addresses: 128.58.24.0/24, 128.58.25.0/24, 128.58.26.0/24, 128.58.27.0/24. What is the CIDR outcome?

128.58.24.0/22

4. Which protocol provides conversion from an IP address to a physical address?

ARP

5. Which protocol is used to assign temporary IP addresses to hosts?

DHCP

6. In order to maximize the usage of limited IP addresses, which of the following protocol is commonly used

Both of the above

7. The internet protocol allows IP fragmentation so that datagrams can be fragmented into pieces small enough to pass over a link with a smaller MTU than the original datagram size

True

8. Which of the following statement is correct for IPv6

Broadcast in IPv4 have been replaced with multicast in IPv6

9. Bootstrap Protocol (BOOTP) allows a diskless workstation to be remotely booted up in a network with TCP port designation for both client and server

False

10. In NAT operations, which of the following statements are correct (Select 3)

Translation table allows packets to be routed unambiguously

NAT maps each private IP address and port number into shared global IP address and available port number

Hosts inside private networks generate packets with private IP address and TCP/UDP port numbers

Summative Quiz

1. Packet is to be forwarded to a network with MTU of 592 bytes. The packet has an IP header of 20 bytes and a data part of 1484 bytes. Which of following maximum data length per fragment is legitimate?

568

2. What information is used as the entry of the lookup table in a Network Address Translation box?

All of the above

3. IPv6 allows fragmentation at

Source only

4. Which of following fields that IPv6 dropped from IPv4?

All of the above

5. in practical IPv6 application, a technology encapsulates IPv6 packets inside IPv4 packets, this technology is called

IP tunneling

6. Which fields in IP packet provide for fragmentation of datagrams to allow differing MTUs in the internet

Identification

Flags

Fragmentation offset

7. IPv6 has a much larger space of

2^128

8. Which of these statements are true of IPv6 representation

Every IPv6 interface contains at least one loopback address

A single interface may be assigned multiple IPv6 addresses of any type

9. Which of the following statement is true for DHCP

All of the above

10. In Network Address Translation (NAT), which of the following statement is true for a packet with an associated private IP address at the routers in the global internet

Discarded due to the nature of the packet address

Week 3

Practice Quiz

1. Which of following control is enabled in UDP?

None of the above

2. Which of following information is not used in UDP de-multiplexing?

Source port number

3. TCP adopts selective repeat ARQ protocol for flow control. In TCP flow control implementation, the window slides at

Per-byte basis

4. Which flag bit in TCP header must be set when a TCP client initiates a three-way handshake?

SYN

5. TCP adopts selective repeat ARQ protocol for flow control. In TCP flow control implementation, the window slides at

FIN

6. In Transmission Control Protocol (TCP), When a segment carries a combination of data and control information, it uses a

Sequence number

7. Transmission Control Protocol (TCP), has same Checksum controlling like

UDP

8. In TCP connection management, which of the following statements are true

Select initial sequence numbers (ISN) to protect against segments from prior connections

High bandwidth connection pose a problem

9. In phases of congestion behavior, when arrival rate is greater than outgoing line bandwidth

Congestion collapse

10. Which of the following services are provided by UDP

All of the above

Summative Quiz

1. When a TCP client initiates a three-way handshake with a sequence number x, what will be the acknowledgement number when the TCP server replies?

X + 1

2. TCP header has a field called window size. What value is the value window size set to?

None of the above

3. In general, there are three phases of congestion behavior, i.e., light traffic, knee, congestion collapse. Which phase does TCP congestion avoidance maps to?

Knee

4. When three duplicate acknowledgements arrive before timeout expires, what will TCP congestion control algorithm reset congestion threshold to for fast re-transmission and fast recovery?

Reset congestion threshold to half of the current congestion window size

5. Assume a TCP source writes a 1200-byte message in one write. Which of following is possible for the destination to receive the message?

All of the above

6. The process of combining multiple outgoing protocol streams at the Transport and Network layers in TCP/IP is called Multiplexing

True

7. TIMELY provides a framework for rate control that depends on transport layer protocol for reliability

False

8. The operation of TCP congestion control can be divided into three phases, which phase requires that the congestion window size be increased by one segment upon receiving an ACK from receiver

Slow start

9. In a router, the control of the transmission rate at the sender's side such that the router's buffer will not be over-filled is called _____ if sender is transmitting too fast

Network congestion

10. Congestion control is associated with the window size field

False

Week 4

Practice Quiz

1. Which of following protocol allows a host to signal its multicast group membership to its attached routers?

IGMP

2. Which of following statements most accurately describes the reverse-path broadcasting?

It assumes that the shortest path from the source to a given router should be the same as the shortest path from the router to the source

3. Which class of IP address does the reverse-path broadcasting uses?

Class D

4. Attackers attempt to gain unauthorized access to server. What type of network security threat it imposes?

Client imposter

5. In mobile IP, when a home agent wants to send a packet to a mobile host in a foreign network, each IP packet at the home agent will be encapsulated with an outer IP header. What is the destination IP address in the outer IP header?

Care of address

6. An IP address associated with a mobile node while visiting a foreign link

Care of address

7. TCP SYN flood attack exploits the TCP three-way handshake

True

8. In multicast communication, relationship is

One to many

Summative Quiz

1. What is the security requirement in case of Denial of Service?

Availability

2. In a software defined network (SDN), which of the architectural layer is responsible for switch configuration and forwarding instruction?

Middle layer

3. What is the security requirement in case of Malicious Code?

All of the above

4. Which of the following is not a general misconception of SDN?

SDN is a framework to solve a set of problems

5. Which component of NFV comprises of hardware and software required to deploy, manage and execute VNFs

NFVI

6. In Reverse-Path Broadcasting (RPB) scenario, assume each router knows current shortest path to source node. Which of the following statement denotes the router's action

If shortest path to source is through different port, router drops the packet

If shortest path to source is through the same port, router forwards the packet to all other ports

7. A peer with which a mobile node is communicating is called

Correspondent node

8. Reverse Path Multicasting (RPM) is used to increase

Efficiency

9. In Reverse Path Forwarding, router receives a packet and extracts the

Source address

10. A network can receive a multicast packet from a particular source only through a

designated parent router