

Week 2 Summary Exercises

Due Oct 13 at 11:59pm**Points** 82**Questions** 20**Available** Oct 6 at 12am - Oct 13 at 11:59pm 8 days**Time Limit** 360 Minutes**Allowed Attempts** 2

Attempt History

	Attempt	Time	Score
KEPT	Attempt 1	254 minutes	82 out of 82
LATEST	Attempt 2	27 minutes	77 out of 82
	Attempt 1	254 minutes	82 out of 82

Score for this attempt: **77** out of 82

Submitted Oct 13 at 9:50pm

This attempt took 27 minutes.

Question 1

2 / 2 pts

Convert the following units. Your answer should be a whole number with no text in the answer field:

27 B = _____ bits

Correct!**Correct Answer**

216

Question 2

2 / 2 pts

Convert the following units. Your answer should be a whole number with no text in the answer field:

89.12 Kbps = _____ bits per second

Correct!

Correct Answer

89,120

Question 3

5 / 5 pts

What is the total utilization of a circuit-switched network, accommodating five users with equal bandwidth share, and the following properties:

- Three users each using 57% of their bandwidth share
- Two users each using 17% of their bandwidth share

Give answer in percent, with one decimal place (normal rounding) and no percentage sign (e.g. for 49.15% you would enter "49.2" without the quotes).

Correct!

Correct Answer

41 margin of error +/- 0.1

Question 4

0 / 5 pts

Suppose there are 4 routers in sequence between Host A and Host B, all of which use store-and-forward routing. What is the total end-to-end delay for a packet originating from Host A with destination Host B, under the following conditions.

Each of the link transmission rates are 9.4 Mbps

The total distance from Host A to Host B along its path of transmission is 123.4 km

The speed of propagation through the transmission medium is 2.7×10^8 m/s

The packet size is 2 KiB

Remember that you must also uplink from Host A to the first router. Give answer in milliseconds, rounded to 1 decimal place, without units (e.g. for 0.12345 seconds you would enter "123.5" without the quotes).

You Answered

Correct Answer

9.2 margin of error +/- 0.1

Question 5

8 / 8 pts

Given a link with a maximum transmission rate of 57.6 Mbps. Only two computers, X and Y, wish to transmit starting at time $t = 0$ seconds. Computer X sends **fileX** (5 MiB) and computer Y sends **fileY** (90 KiB), both starting at time $t = 0$.

- Statistical multiplexing is used, with details as follows
 - Packet Payload Size = 1000 Bytes
 - Packet Header Size = 24 Bytes (overhead)
- Ignore Processing and Queueing delays
- Assume partial packets (packets consisting of less than 1000 Bytes of data) are padded so that they are the same size as full packets.
- Assume continuous alternating-packet transmission.
- Computer X gets the transmission medium first.

At what time ($t = ?$) would *FileX* finish transmitting?

Give answer in seconds, without units, and round to two decimal places (e.g. for an answer of 12.4567 seconds you would enter "12.46" without the quotes)

Correct!

Correct Answer

0.76 margin of error +/- 0.02

Question 6**4 / 4 pts**

In the Internet protocol stack, the Application Layer is responsible for assembling user data to be sent.

Answer 1:

Application Layer

Correct!**Question 7****4 / 4 pts**

Merging multiple communication streams into the same media is called _____?

☐ interoperability

☐ encapsulation

☒ multiplexing

☐ morphing

Correct!**Question 8****4 / 4 pts**

Please select all examples of systems using unguided media.

☒ Global Positioning System (GPS)

☐ Cable television/internet

☐ ADSL

Correct!

Correct!☒ Signal flares☐ Fiber-Optic Internet☐ Ethernet Home Networks**Correct!**☒ 802.11 Wifi Home Networks**Correct!**☒ Human speech**Question 9****4 / 4 pts**

In the Internet protocol stack, the Application Layer is responsible for finding the destination IP address.

Answer 1:**Correct!**

Application Layer

Question 10**4 / 4 pts**

In the Internet protocol stack, if a data transfer is connection-oriented, it is implemented at the Transport Layer .

Answer 1:**Correct!**

Transport Layer

Question 11**4 / 4 pts**

Please select all examples of systems using guided media.

Correct!☒ Ethernet Home Networks☐ Global Positioning System (GPS)**Correct!**☒ Fiber-Optic Internet☐ Human speech☐ Signal flares**Correct!**☒ ADSL☐ 802.11 Wifi Home Networks**Correct!**☒ Cable television/internet**Question 12****4 / 4 pts**

Please place the following in the order of the OSI layering model.

Layer 7: [Select] ▼

Layer 6: [Select] ▼

Layer 5: [Select] ▼

Layer 4: [Select] ▼

Layer 3: Network Layer

Layer 2: [Select] ▼

Layer 1: [Select] ▼

Answer 1:**Correct!**

Application Layer

Answer 2:

Correct!

Presentation Layer

Answer 3:**Correct!**

Session Layer

Answer 4:**Correct!**

Transport Layer

Answer 5:**Correct!**

Network Layer

Answer 6:**Correct!**

Link Layer

Answer 7:**Correct!**

Physical Layer

Question 13**4 / 4 pts**

A third party intercepting a packet and downloading its information before it is sent onward toward its destination is called _____

Correct!

- ☐ a DoS attack
- ☐ malware
- ☒ a packet sniffer
- ☐ a virus infection
- ☐ an IP spoofer

Question 14**4 / 4 pts**

In the internet, an application-level protocol implementing web browsing would most likely utilize TCP as its transport-layer protocol.

Answer 1:

TCP

Correct!

Question 15**4 / 4 pts**

In the internet, an application-level protocol implementing live-streaming video would most likely utilize UDP as its transport-layer protocol.

Answer 1:

UDP

Correct!

Question 16**4 / 4 pts**

The minimum necessary information for identifying a process on a remote host would be (check all that apply):

☐ Local Port Number

☒ Remote Host IP

☐ Gateway Router IP

☐ Local Host IP

☐ Local Socket Info

Correct!

Correct!☒ Remote Port Number**Question 17****4 / 4 pts**

What transport-layer services are provided by the base TCP protocol?
(Check all that apply)

Correct!☒ Flow control**Correct!**☒ Connection-oriented service☐ Minimum bandwidth☐ Message security**Correct!**☒ Congestion control**Correct!**☒ Reliable data transmission☐ Jitter minimization**Question 18****4 / 4 pts**

A program running on a host is called a process

Answer 1:

Correct!

process

Question 19**4 / 4 pts**

Which of the following are application-layer protocols?

- ☐ Internet Protocol (IP)
- ☐ User Datagram Protocol (UDP)
- ☐ Transmission Control Protocol (TCP)
- ☒ Telnet
- ☒ Domain Name Service (DNS)
- ☒ Post Office Protocol v3 (POP3)
- ☒ File Transfer Protocol (FTP)
- ☒ Secure Shell (SSH)

Correct!

Correct!

Correct!

Correct!

Correct!

Question 20

4 / 4 pts

In the internet, an application-level protocol implementing email service would most likely utilize TCP as its transport-layer protocol.

Answer 1:

TCP

Correct!

Quiz Score: **77** out of 82