ECS 152B Computer Networks
Instructor: Liu

Name:

Student ID #:

Mid Exam:

Duration: 5 Minutes
1. The exam is closed book. However, you may refer to one sheet of A4 paper (double sided) of your own notes.
2. Try to solve as many as can.
3. Be brief.
4. Show your reasoning clearly. If your reasoning is correct, but the final answer is wrong, you will receive most of the credit.
5. Write your solution on this paper. If you need extra paper, use plain white paper. Write your name on any extra paper.

Good Luck!

Do not write in this box.

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The idea of the sample exam is to let you look at different question types.
1. True or false (points).

1) RTP usually runs on top of UDP.

2) Randomness (in service and arrival) is what causes queuing at buffers.
2. (6 points) Consider the following scenario. A student brings a laptop into CS building and uses the wireless LAN in CS building. She reads news from cnn.com. Name the networking protocols that the laptop is involved in and describe their functionalities briefly. You only need to specify protocols we discussed in class. You get full credit if you name and describe at least 6 correctly. (Note: irrelevant protocols will get negative credits.)
3. (10 points) Filling the blanks using the following terms: a modem, a telephone network, Ethernet, AM radio, a codec, analog transmission, digital transmission, digital signaling, analog signaling, physical layer, data link layer, network layer, transport layer, application layer, ADSL, cable, TDMA, FDMA, connection-oriented, connection-less, circuit-switching, and packet-switching. (Note that there are more terms than blanks.)

1) Among the five layers, ___________________, ___________________, and ___________________ are implemented on all end hosts and on all routers.

2) FM radio stations use ________________ to separate different stations.
4. Short questions.
   1) Explain briefly how multimedia traffic reduces the impact of delay jitter.
Extra questions:
Chpt. 5, p. 32, p. 35
Chpt. 7, p. 22, p. 23
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The idea of the sample exam is to let you look at different question types.
1. True or false (points).

   1) RTP usually runs on top of UDP. 
   True

   2) Randomness (in service and arrival) is what causes queuing at buffers. 
   True
2. (6 points) Consider the following scenario. A student brings a laptop into CS building and uses the wireless LAN in CS building. She streams a stored video from cnn.com website. Name the networking protocols that the laptop is involved in and describe their functionalities briefly. You only need to specify protocols we discussed in class. You get full credit if you name and describe at least 6 correctly. (Note: irrelevant protocols will get negative credits.)
ARP, DNS, HTTP, TCP, IP, RTP, RTCP, RTSP,
3. (10 points) Filling the blanks using the following terms: a modem, a telephone network, Ethernet, AM radio, a codec, analog transmission, digital transmission, digital signaling, analog signaling, physical layer, data link layer, network layer, transport layer, application layer, ADSL, cable, TDMA, FDMA, connection-oriented, connection-less, circuit-switching, and packet-switching. (Note that there are more terms than blanks.)

1) Among the five layers, __________________, __________________, and __________________ are implemented on all end hosts and on all routers.

Physical, link, network

2) FM radio stations use ________________ to separate different stations.

FDMA
4. Short questions.
   1) Explain briefly how multimedia traffic reduces the impact of delay jitter. Use buffer and adaptive playout.