CSI 470 - Networks - Review Sheet II

Chapter 3 - Transport Layer

segments, (p198)
best-effort delivery service, (p202)
unreliable service, reliable data transfer (p202)
congestion control, sockets (202,203)
multiplexing and demultiplexing (203)
source port,destination port (204)
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   -immediate send (211)
   -no handshake (212)
   -no connection state (212)
   -small overhead (212)
   -checksum (214-215)
Reliable Data Transfer
    -bidirectional, full-duplex (217)
    -ACK, NAK, ARQ (219)
    -ARQ : error detection, feedback, retransmission (220)
    -stop-and-wait protocol (221)
    -sequence number (222)
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    -utilization (229)
    -go back N (230), cumulative ack (234)
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    -three-way handshake and shutdown (244, 264-268)
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    -connection management - closing connections with FIN 267
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    -offered load (274)
    -four senders and the overlapping "owned" router problem (276)

-congestion control approaches (278)
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    - network assisted (choke packets or header field/flag) (278-279)
-congestion window (282)
-self-clocking (283)
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-congestion avoidance, cwnd+1MSS per RTT (285)
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-finite state machine of TCP congestion control (286)

-AIMD (288)
-TCP average throughput 0.75 W / RTT (289)

-Fairness 290
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     - transmission rate = cwnd/RTT (291)
     - K connections should get R/K average transmission rate (291)
     - Smaller RTT result in better transmission rates (293)
     - Parallel TCP connections can hog bandwidth (per host)(293)
     - UDP may crowd out TCP (293)

Review Questions (296-299)
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