CSE204 Computer Networks
2017/2018 Spring - Midterm Exam

Name and Surname: Student Number:

Multiple Choice (Single Answer) Questions (50 pts, 5 points each)

Q1: Suppose Host A wants to send a large file to Host B. The path from Host A to Host B has three links, of rates R1 = 0.5 Mbps, R2 = 100Kbps, and R3 = 1 Mbps. Assuming no other traffic in the network.

What is the throughput for the file transfer?

a. 2 Mbps b. 1.6 Mbps c. 533 Kbps d. 500 kbps e. 100 Kbps

Q2: Network layer packet is called _____.

a. segment b. data c. frame d. datagram e. none of above

Q3: Which one is **not** true for web caching?

a. Reduce response time for client request.

b. Satisfy client request with involving origin server.

c. Reduce traffic on an institution's access link.

d. Local web cache reduces packet delay.

Q4: The ability to inject packets into the Internet with a false source address (someone else is imitating you) is known as _____.

a. IP Spoofing b. DoS Attack c. Packet Sniffing d. Virus

Q5: Which one is **not** true, for typical usage?

a. Mobile phone – Server interaction is an example of client-server architecture.

b. ADU laboratory PC – Server interaction is an example of client-server architecture.

c. Home PC – ADU laboratory PC interaction is an example of P2P architecture.

d. Home PC – ADU laboratory PC interaction is an example of client-server architecture.

e. Laptop – Home PC interaction is an example of P2P architecture.

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Q6: Directory service that translates hostnames to IP addresses called _____.

a. HTTP b. SMTP c. Web service d. DNS

Q7: Which one is **not** true?

a. File transfer requires no data loss, elastic throughput and no time sensitivity.

b. E-mail application requires no data loss, elastic throughput and no time sensitivity.

c. Internet telephony requires some loss, elastic throughput and no time sensitivity.

d. Stored video requires some loss, fixed throughput and time sensitivity.

Q8: Which one is **not** true?

a. TCP provides a reliable byte-stream between client and server but UDP does not.

b. You would use TCP if you wanted to do a transaction as fast as possible.

c. Nether TCP nor UDP guarantee that data will be delivered within a specified amount of time.

d. Nether TCP nor UDP provide confidentiality (via encryption).

e. Nether TCP nor UDP guarantee that a certain value for throughput will be maintained.

Q9: _____ protocol downloads emails into folders and emails in the local machine, poses a problem for the nomadic user where server does not keep user state across sessions.

a. POP3 b. SMTP c. IMAP d. HTTP

Q10: Suppose Host A wants to send a 1Mbyte packet on a 500Kbps link what is the transmission delay of the packet.

a. 2 sec b. 1.6 sec c. 32 sec d. 0.002 sec e. 16 sec

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General Format Questions

Q11: (15 pts) Suppose a user enters URL “www.someSchool.edu/home.index” and page contains references of 5 jpeg images. Please draw and briefly explain each step between client and server in terms of non-persistent HTTP.

Q12: (15 pts) Please explain (with reasons) utilization, throughput, packet drop, end-to-end delay and give typical measurement unit of all (i.e. Kbps, microseconds).

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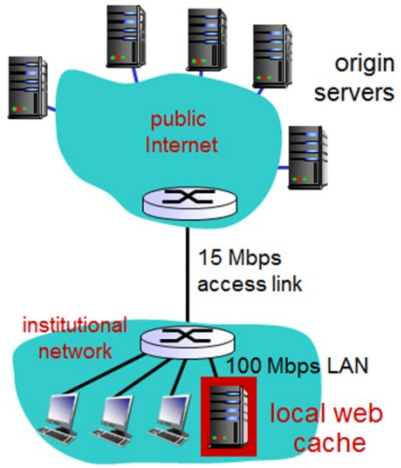
Q13: (20 pts) Assume that web cache is located at the institution LAN shown in the figure below and user within intuition LAN connecting to origin server to request HTTP contents. Users requests average object size is 1000 Kbps, average request rate from browsers to origin servers is 30/sec, RTT from institutional router to any origin server is 2 sec (uplink) and 40% requests satisfied at cache, 60% requests satisfied at origin. Please calculate the utilisation for LAN and access link and total delay that whether it requires administrator to increase the access link bandwidth or not.



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