Homewo 1 Sp25

Quiz submitted

- Due Feb 25 at 11:59pm
- Points 5
- Questions 5
- Available Feb 18 at 12am - Feb 25 at 11:59pm
- Time Limit None
- Allowed Attempts 5

Take the Quiz Again

Attempt History

	Attempt	Time	Score
KEPT	Attempt 4	6 minutes	5 out of 5
LATEST	Attempt 4	6 minutes	5 out of 5
	Attempt 3	9 minutes	5 out of 5
	Attempt 2	28 minutes	4 out of 5
	Attempt 1	5,856 minutes	3.5 out of 5

Correct answers are hidden.

Score for this attempt: 5 out of 5
Submitted Feb 24 at 9:09pm
This attempt took 6 minutes.

Question 1
1 / 1 pts

Suppose users share a 323 Mbps link. Also suppose each user requires 732 kbps when transmitting but each user transmits only 0.32 of the time.

Answer the following questions and for the final answer enter the answer like : Question 1a answer + Question 1b answer. For example, if for first part the answer is 10 and for second part is 256, please enter 266

a- When circuit switching is used, how many users can be supported? each 1 Mbps is 1024 kbps

b- Assume we want to use packet switching instead of circuit switching, suppose there are 9 users. Find the probability that at any given time,
exactly 7 users are transmitting simultaneously.

451.85

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Question 2
1 / 1 pts

Which of the following statements are true regarding the comparison of packet switching and circuit switching? (Choose all that apply)

- [x] Packet switching allows multiple users to share the same communication path simultaneously, while circuit switching requires a dedicated path for each communication.
- [ ] Packet switching generally offers lower latency compared to circuit switching due to the dedicated paths used in circuit switching.
- [x] In packet switching, data is divided into packets that may take different routes to reach the destination, whereas in circuit switching, data follows a fixed route throughout the communication.
- [x] Packet switching can handle variable data rates more effectively, while circuit switching may waste resources when no data is being transmitted.
- [x] Circuit switching is more efficient than packet switching when handling bursty traffic, as it provides a constant dedicated bandwidth.

Question 3
1 / 1 pts

Consider a client and a server connected through one router. Assume the router can start transmitting an incoming packet after receiving its first 86 bytes instead of the whole packet. Suppose that the link rates are 889 byte/s and that the client transmits one packet with a size of 121 bytes to the server. What is the end-to-end delay in seconds with 5 routers between the server and client? Assume the propagation, processing, and queuing delays are negligible.

0.62

Question 4
1 / 1 pts

Which of the following protocols are application layer protocols?

- [x] SSH
- [ ] NAT
- [ ] BGP
- [x] POP3

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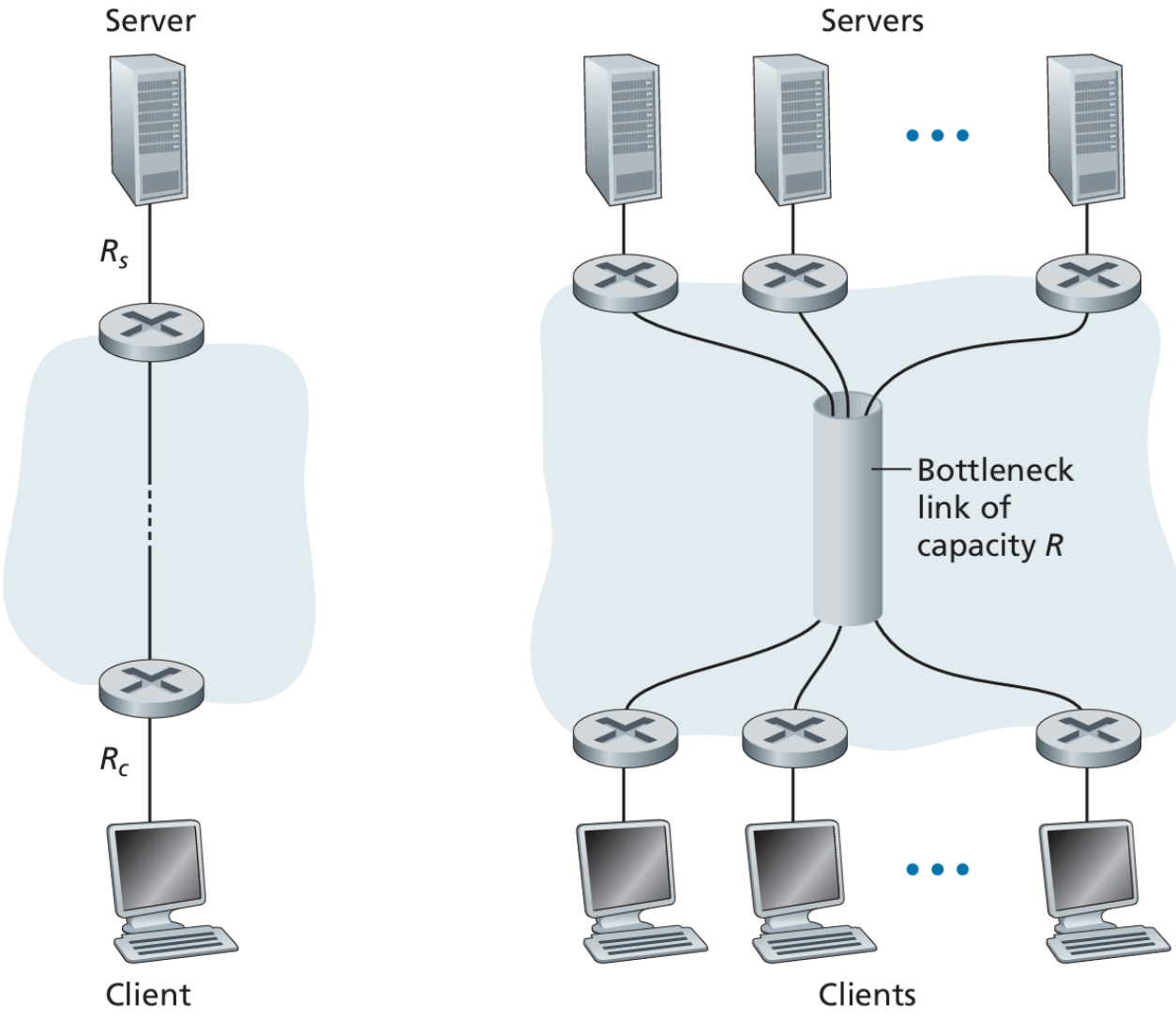
Question 5
1 / 1 pts

Suppose that there are 36 client-server pairs.

Denote Rs=97, Rc=38, and R=52 for the rates of the server links, client links, and network link. Assume
all other links have abundant capacity and that there is no other traffic in the network besides the traffic generated by the 36 client-server pairs. Derive What is the total throughput of this system in Mbps?



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Quiz Score: 5 out of 5