

NAME: \_\_\_\_\_

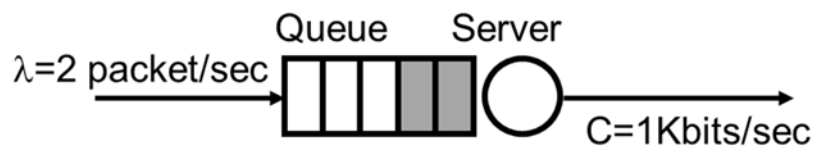
**EE444 Introduction to Computer Networks**

**February 27, 2018**

**Quiz #1 A GROUP**

**CLEARLY STATE YOUR ASSUMPTIONS, SHOW ALL YOUR WORK**

- 1) Consider the queuing system below.



Average packet size=100 bits/packet

- a) What is the average service rate ( $\mu$ )?

- b) What is the utilization of the server ( $\rho$ )?

- 2) a) Which layer's service does Transport layer use?  
b) Which layer uses Transport Layer's services?

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**Quiz #1 B GROUP**

**CLEARLY STATE YOUR ASSUMPTIONS, SHOW ALL YOUR WORK**

- 1) Consider the queuing system below. The average interarrival time is 0.25 sec/packet.



Average packet size=100 bits/packet

- a) What is the expected service time ( $E[S]$ )?

- b) What is the utilization of the server ( $\rho$ )?

- 2)    a) Which layer's service does Network layer use?  
      b) Which layer uses Network Layer's services?