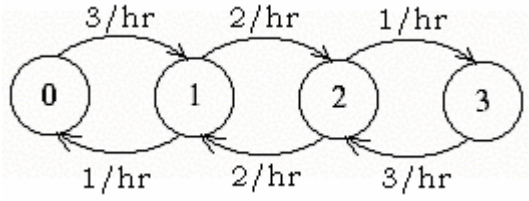
Name _____

57:022 Principles of Design II
Quiz #11 - 10 May 2002

True (+) or False (o)?

__ 1. "Balking" in a queueing system occurs when a potential customer is discouraged from joining the queue to be served.
__ 2. Little's Law states that the time spent in a queueing system has Erlang distribution.
__ 3. In a birth/death model of a queueing system, the population size includes not only the waiting customers, but also any customers currently being served.
__ 4. "Reneging" in a queueing system occurs when a server sends a customer away without its having been served.
__ 5. In a birth/death model of a queueing system, a "death" refers to the departure of a customer from the system.
__ 6. The "utilization" of the server in an M/M/1 system is equal to $1-\pi_0$.
__ 7. Little's Law applies to <u>any</u> queueing system in steady state, whether or not it is a birth/death process.
__ 8. An M/M/1 queueing system is a birth/death process.
__ 9. The notation W generally refers to the average time that a customer spends waiting in the queueing system, exclusive of time being served.
__ 10. In an M/M/1 queueing system, the number of customers arriving per unit time has Poisson distribution.

Consider the birth-death process on the right:



__ 11. The arrival process suggests a "finite source population."
__ 12. The departure process suggests a single server.
__ 13. A steady state exists for this system.
__ 14. This might be classified as an M/M/3/3/3 queueing system.
__ 15. The probability π_0 is equal to 1/6.
__ 16. All states are equally likely in steady state.
__ 17. State 1 is 3 times as likely as state 0 in steady state.

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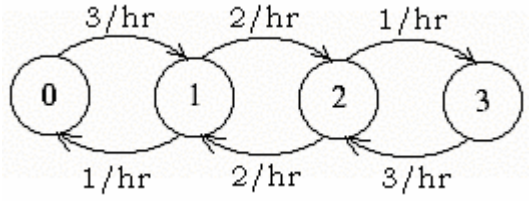

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