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旁听访问入口过期 三月 20, 2020

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Week's class Quiz :check your understanding

Question 1

0 points possible (ungraded)

The PASTA property means that, for a queue with Poisson input traffic:

the probability of losing a client is the probability that the server is empty,

☐ True

☐ False

the probability that the server is occupied is equal to the load in Erlang,

☐ True

☐ False

the service times are exponentially distributed,

☐ True



☐ False

the probabilities seen by clients at the time that they arrive correspond to the stationary probabilities,

☐ True☐ False

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Question 2

0 points possible (ungraded)

A system is modelled by a FIFO finite queue with a single server. The probability that the system is full is observed to be (10^{-3}) . The client rejection probability is observed to be (10^{-4}) .

The inter-arrival may be exponentially distributed.

☐ True☐ False

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Question 3

0 points possible (ungraded)

Consider the following state transition diagram.



Figure 2. Question 4

Can it correspond to a continuous time Markov chain ?

☐ Yes

☐ No

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Question 4

0 points possible (ungraded)

Consider the following state transition diagram.

Figure 3. Question 5

Can it correspond to a continuous time Markov chain ?

☐ Yes

☐ No

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Question 5

0 points possible (ungraded)

Consider a Markov chain with the following transition diagram :



Figure 4. Question 5

What is the percentage of time spent in state 1?

This percentage is

(in percent)

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Question 6

0 points possible (ungraded)

The Markov chain used to study the M/M/1 queue has a finite number of states.

☐ True

☐ False

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Question 7

0 points possible (ungraded)

Consider an M/M/1/K queue. If the load ρ is equal to 2, is it possible to fix K so that the loss rate is under 0.4?

☐ Yes

☐ No



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Question 8

0 points possible (ungraded)

Consider two M/M/1 queues. The first one receives on average 80 clients per time unit and has an average service time of 0.01 time units. The second one receives on average 800 clients per time unit and has an average service time of 0.001 time units.

The second queue has an average queue length larger than the first one:

☐ True☐ False

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discussion

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[Question 5](#)

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Hi, could you clarify what figure this question refers to? "Consider the previous Markov chain (cf. ..."

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