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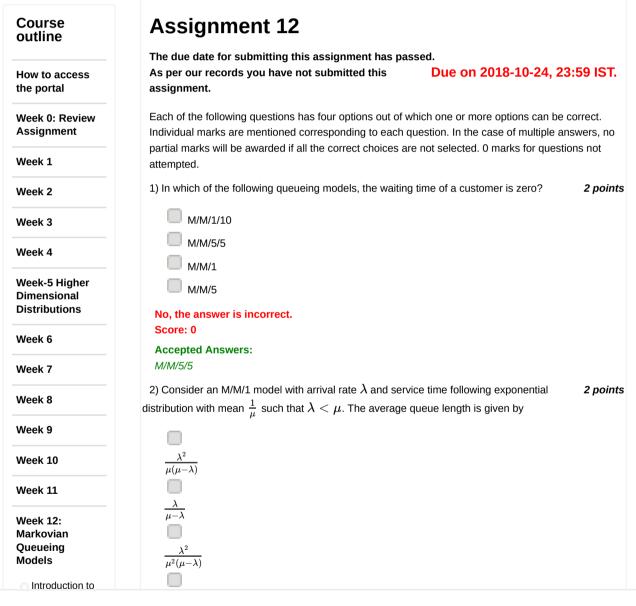
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Courses » Introduction to Probability Theory and Stochastic Processes

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Unit 14 - Week 12: Markovian Queueing Models



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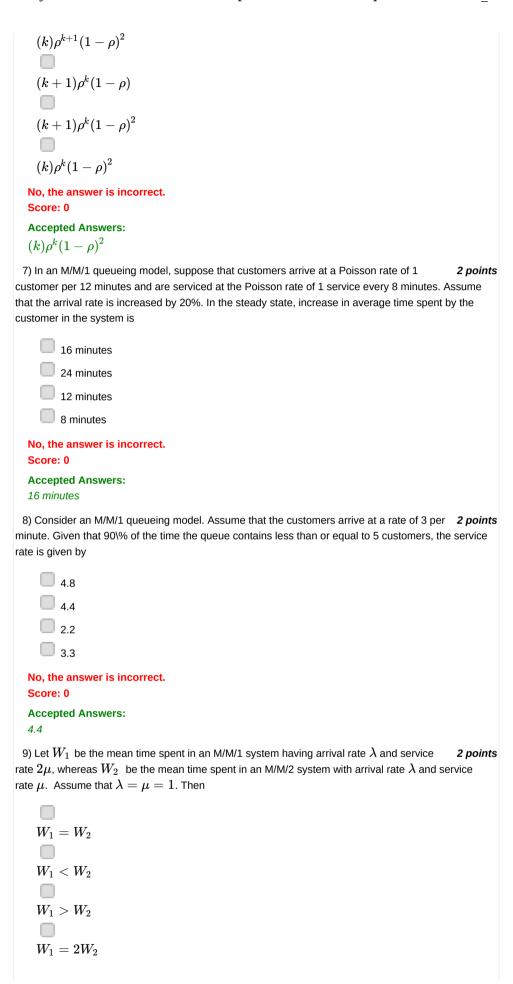




Funded by

In association with

M/M/1	3) Consider an M/M/1 model with arrival rate λ and service time following exponential 2 points
Queueing	distribution with mean $\frac{1}{\mu}$ such that $\lambda < \mu$. The expected number of customers in the system is given
Model	by
Continued	,
M/M/1	
Queueing	<u> </u>
Model and	$\overline{\mu(\mu{-}\lambda)}$
Burke's Theorem	
meorem	$rac{\lambda}{\mu-\lambda}$
M/M/c	μ – λ
Queueing Model	
Wodel	$rac{\lambda^2}{\mu^2(\mu-\lambda)}$
M/M/c	$\mu^2(\mu - \lambda)$
continued and M/M/1/N Model	
W/W/I/W WOUCH	$rac{\mu}{\mu(\mu-\lambda)}$
Other	
Markovian Queueing	No, the answer is incorrect.
Models	Score: 0
- Townsieus	Accepted Answers:
TransientSolution of	$\frac{\lambda}{\mu - \lambda}$
Finite Capacity	μ - λ
Markovian	4) Mr. Rajesh runs a one-person, unisex hair salon. He finds that customers seem to arrive 2 points
Queues	according to a Poisson process with a mean arrival rate of 4 per hour. Because of his excellent
Quiz :	reputation, customers were always willing to wait. The data further showed that customer processing
Assignment 12	time was exponentially distributed with an average of 10 minutes. The proportion of time, an arriving
Assignment 12	customer can walk right in without having to wait at all, is
Solutions	0.166
	0.100
	0.706
	0.223
	0.333
	No, the answer is incorrect.
	Score: 0
	Accepted Answers:
	0.333
	5) Mr. Rajesh runs a one-person, unisex hair salon. He finds that customers seem to arrive 2 points
	according to a Poisson process with a mean arrival rate of 4 per hour. Because of his excellent
	reputation, customers were always willing to wait. The data further showed that customer processing
	time was exponentially distributed with an average of 10 minutes. If an arriving customer finds exactly 2
	customers in the system, what is his expected waiting time (in minutes)?
	10
	20
	30
	0.33
	No, the answer is incorrect.
	Score: 0
	Accepted Answers:
	20
	6) Consider that two identical M/M/1 queueing systems with the same rates λ and μ are in 2 points
	operation side by side (with separate queues) in a premises. The probability that there are a total of k
	number of customers in the two systems taken together in long-run is given by



No, the answer is incorrect. Score: 0	
Accepted Answers: $W_1 > W_2$	
10)Consider the online ticket reservation system of Indian Railways. As arrive according to a Poisson process at an average rate of 100 per hou taken for each reservation by a computer server follows an exponential caverage rate the computer server should issue an e-ticket in order to enswait more than 45 seconds with a probability of 0.95. Write the answer to	r. Also assume that the time distribution. Find out at what sure that a customer will not
20 seconds 30 seconds 15 seconds 25 seconds No, the answer is incorrect.	
Score: 0 Accepted Answers: 20 seconds	
Previous Page	End