(A district is served by Taxi company. The company owns 4 Taxis, calls ar
office at the rate of 16 per hour. The average time per ride is 10 minutes. C
distribution, and the ride time is exponential.)

The best description of this model is:

- a. (8/ 6/2: GD/∞/∞)
- b. (8/10/4: GD/∞/∞)
- c. (M/M/4: GD/∞/∞)
- d. (M/M/2: GD/∞/∞)

Clear my choice

Customers arrive at a bank facility at the average rate of 20 per hour, according t
is only one teller window capable of serving 25 customers per hour on the average
times. Customers form one line, going to the available teller on the bases of FCFS. T
sufficient only for a total queue size of 27 clients. If the space yard is full, new arrivin
facilities.

The average number of customers waiting in the system is:

a. Less than or equal to 4 customers

False

Queuing systems are considered as a deterministic operations research models

Select one:

True

False

Customers arrive at a bank facility at the average rate of 20 per hour, according to a Poisson distribution. There is only one teller window capable of serving 25 customers per hour on the average with exponential service times. Customers form one line, going to the available teller [illegible] The bank facility has space sufficient only for a total queue size of 27

- c. $[\mu_1, \mu_2, \mu_3] = [5.5, 6, 10]$
- d. $[\mu_1, \mu_2, \mu_3] = [10, 9, 8]$

Clear my choice

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If babies are born in a large city at the rate of 50 birth every minutes.,Then the interarrival time between births is ..... minutes

Answer: 0.02

Question 5
Not yet
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Consider a one-server queuing situation in which the arrival rate and servicing rates are:

$\lambda_n = 10 - n$, for $n = 0, 1, 2$

$\mu_n = \frac{n}{2} + 5$, for $n = 1, 2, 3$

The transition diagram that represents this situation is .....

Always, if the queue in the queuing system empty, the facility becomes idle until a new customer arrives.

Select one:

- True
- False

A priority rule selects the best customer to be served.

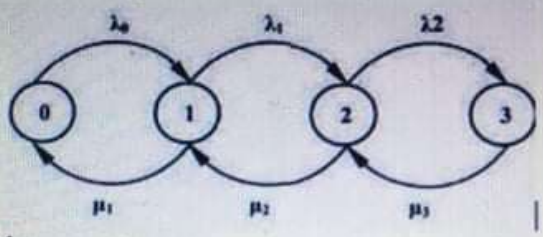
Select one:

- True
- False

Consider a one-server queuing situation in which the arrival rate, servicing rates and the state transition diagram are

$$\lambda_n = 10 - n, \quad \text{for } n = 0, 1, 2$$

$$\mu_n = \frac{n}{2} + 5, \quad \text{for } n = 1, 2, 3$$



The balance equation of the system is

a. $\mu_{n+1}P_{n+1} = \mu_n P_n$

b. $\mu_{n-1}P_{n-1} + \lambda_{n+1}P_{n+1} = (\lambda_n + \mu_n)P_n$

c. $\lambda_{n-1}P_{n-1} = \lambda_n P_n$

d. $\lambda_{n-1}P_{n-1} + \mu_{n+1}P_{n+1} = (\lambda_n + \mu_n)P_n$

- a. a
- b. b
- c. c
- d. d

Clear my choice

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A queue is one or more "customers" waiting for service.

Select one:

- True
- False

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Random interarrival and service times can be described quantitatively in queuing models by the exponential distribution

Select one:

- True
- False

Question 1

Not yet answered

Marked out of 1.25

Flag question

(A district is served by Taxi company. The company owns 4 Taxis, calls arrive to the company's dispatching office at the rate of 16 per hour. The average time per ride is 10 minutes. Calls arrive according to a Poisson distribution, and the ride time is exponential.)

The best description of this model is:

- a. (M/M/4: GD/∞/∞)
- b. (M/M/2: GD/∞/∞)
- c. (8/ 6/2: GD/∞/∞)
- d. (8/10/4: GD/∞/∞)

Clear my choice

Qui

1 7 13 19 25

Finish

Time

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Changing priority rules will affect the waiting times of the customers

Select one:

- True
- False

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A district is served by Taxi company. The company owns 4 Taxis, calls arrive to the company's dispatching office at the rate of 16 per hour. The average time per ride is 10 minutes. Calls arrive according to a Poisson distribution, and the ride time is exponential. The owner was advised by a friend that one way to reduce the waiting time is for the dispatching office to inform new customers of potential excessive delay once the waiting list reaches 5 customers. Under this proposal, the average effective arrival rate per hour (λ_{eff}) is:

- a. ≤ 2
- b. Greater than 2 and $\leq$ to 16
- c. Greater than 16 and ≤ 20
- d. Greater than 20

12

Transient behavior of the queuing system , achieved after the system has been in operation for a sufficiently long time.

○ c. c

◉ d. d

Clear my choice

A district is served by Taxi company. The company owns 4 Taxis, calls arrive to the comp office at the rate of 16 per hour. The average time per ride is 10 minutes. Calls arrive accor distribution, and the ride time is exponential.

5. If $P_0 = 0.06$, Then the average number of calls waiting to be served by any available ta

○ a. Less than or equal to 0.5

○ b. Greater than 0.5 and less than or equal to 0.75

○ c. Greater than 0.75 and less than or equal to 1.00

○ d. Greater than 1.00

Consider a one-server queuing situation in which the arrival rate and servicing rates are:

$\lambda_n = 10 - n, \quad \text{for } n = 0, 1, 2$

$\mu_n = \frac{n}{2} + 5, \quad \text{for } n = 1, 2, 3$

The transition diagram that represents this situation is

An assembly line has three stations through which every unit being produced must pass in the same fixed order. The arrival of units follows a Poisson process for all stations. The mean time between arrivals is 8 minutes. The stations operate independently, and queues are allowed to form in front of each station. All stations have same mean processing time of 4 minutes. If processing time at each station has an exponential distribution .

The average number of units in the assembly line is:

- a. Less than 1.
- b. Greater than or equal to 1 but less than 3.
- c. Greater than or equal to 3 but less than 5
- d. Greater than or equal to 5

Clear my choice

Flag question

Question 28

Not yet answered

Marked out of 1.00

Flag question

A district is served by Taxi company. The company owns 4 Taxis, calls arrive to the company's dispatching office at the rate of 16 per hour. The average time per ride is 10 minutes. Calls arrive according to a Poisson distribution, and the ride time is exponential. The owner was advised by a friend that one way to reduce the waiting time is for the dispatching office to inform new customers of potential excessive delay once the waiting list reaches 6 customers. Under this proposal, the average effective arrival rate per hour (λ_{eff}) is:

- a. ≤ 2
- b. Greater than 2 and ≤ to 16
- c. Greater than 16 and ≤ 20
- d. Greater than 20

Question 29

Not yet

An assembly line has three stations through which every unit being produced must pass in the same fixed order. The arrival of units follows a Poisson process for all stations. The mean

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TOSHIBA

○ False

An assembly line has three stations through which every unit being produced must pass in the same fixed order. The arrival of units follows a Poisson process for all stations. The mean time between arrivals is 8 minutes. The stations operate independently, and queues are allowed to form in front of each station. All stations have same mean processing time of 4 minutes. If processing time at each station has an exponential distribution

The utilization rate of the second station is: .....%.

Answer: 0.5

Consider a one-server queuing situation in which the arrival rate, servicing rates and the state transit diagram are

$$\lambda_n = 10 - n, \qquad \text{for } n = 0, 1, 2$$

$$\mu_n = \frac{n}{2} + 5, \qquad \text{for } n = 1, 2, 3$$

Question 29

Not yet answered

Marked out of 1.50

Flag question

An assembly line has three stations through which every unit being produced must pass in the same fixed order. The arrival of units follows a Poisson process for all stations. The mean time between arrivals is 8 minutes. The stations operate independently, and queues are allowed to form in front of each station. All stations have same mean processing time of 4 minutes. If processing time at each station has an exponential distribution.

The total spent minutes in the assembly line for each unit is:

- a. Less than 12.
- b. Greater than or equal to 12 but less than 24.
- c. Greater than or equal to 24 but less than 27
- d. Greater than or equal to 27

Finish attempt ...

28

A district is served by Taxi company. The company owns 4 Taxis, calls arrive to the company's dispatching office at the rate of 16 per hour. The average time per ride is 10 minutes. Calls arrive according to a Poisson distribution, and the ride time is exponential. The owner was advised by a friend that one way to reduce the waiting time is for the dispatching office to inform new customers of potential excessive delay once the waiting list reaches 5 customers. Under this proposal, the average effective arrival rate per hour (λ_{eff}) is:

- a. ≤ 2
- b. Greater than 2 and $\leq$ to 16
- c. Greater than 16 and ≤ 20.
- d. Greater than 20

Random interarrival and service times can be described quantitatively distribution

Select one:

- True
- False

A phase represents a single step in providing a service

Select one:

- True
- False

An assembly line has three stations through which every unit being produced m order. The arrival of units follows a Poisson process for all stations. The mean time

Question 2

Not yet answered

Marked out of 1.50

Flag question

An assembly line has three stations through which every unit being produced must pass in the same fixed order. The arrival of units follows a Poisson process for all stations. The mean time between arrivals is 8 minutes. The stations operate independently, and queues are allowed to form in front of each station. All stations have same mean processing time of 4 minutes. If processing time at each station has an exponential distribution .

The average number of units in the assembly line is:

- a. Less than 1.
- b. Greater than or equal to 1 but less than 3.
- c. Greater than or equal to 3 but less than 5.
- d. Greater than or equal to 5

Clear my choice

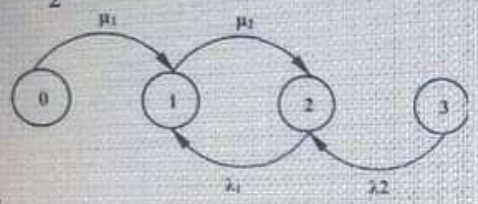
Consider a one-server queuing situation in which the arrival rate and servicing rates are:

$\lambda_n = 10 - n,$ for n = 0, 1, 2

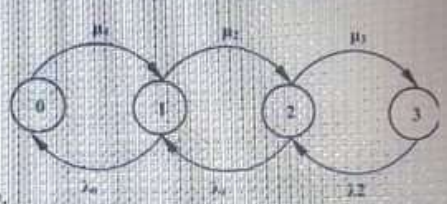
$\mu_n = \frac{n}{2} + 5,$ for n = 1, 2,3

The transition diagram that represents this situation is .....

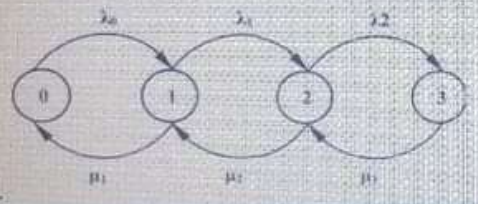
a.



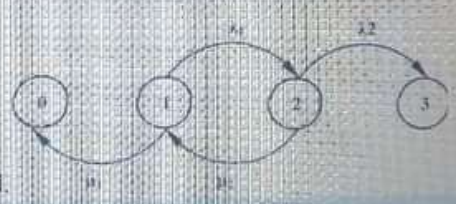
b.



c.



d.



Answer: c

A phase represents a single step in providing a service