Code No: 58070 **Set No. 1**

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
IV B.Tech. II Sem., II Mid-Term Examinations, April-2014
MATHEMATICAL MODELING AND SIMULATION
Objective Exam

Name: _____ **Hall Ticket No.** | | | | | | A | | | | |

Answer All Questions. All Questions Carry Equal Marks. Time: 20 Min. Marks: 10.

I. Choose the correct alternative:

1. Which of the following is not considered as the negative behavior of customer according to queue disciplines [ ]
   a) Reneging b) Jockeying c) Blanking d) Boarding

2. The system of loading and unloading of goods usually follows [ ]
   a) FIFO b) LIFO c) SIRO d) pre – emptive

3. In a (M/M/1) : (∞/FCFS) model, the length of the system (L_s) is given by [ ]
   a) $\frac{\rho^2}{(1-\rho)}$ b) $\frac{\lambda^2}{(\mu-\lambda)}$ c) $\frac{\rho}{(1-\rho)}$ d) $\frac{\lambda^2}{\mu(\lambda-\mu)}$

4. The reasons which are basically responsible for the formation of the queue should be that [ ]
   a) The average service rate is less than the average arrival rate
   b) output rate is linearly proportional to input
   c) output rate is constant and the input varies in random manner
   d) all of the above

5. Monte Carlo solutions in queuing theory are extremely useful in queuing problems [ ]
   a) that cannot be analyzed mathematically b) involving multi stage queuing
   c) to verify mathematically results d) all of the above

6. The customers joining a queuing system arrive in random manner and follow ____ distribution [ ]
   a) Normal b) Poisson c) Beta d) Delta

7. Each project can be sub divided in to [ ]
   a) Tasks b) Activities c)both a and b d) none

8. Given $L_q = 3.24$ customers $= 10/hr$, $\mu = 3/hr$ then $W_s =$ _____ [ ]
   a) 32.4 min b) 35.4 min c) 32.73 min d) 39.42 min

9. Arrival rate is 3 per hour. Service rate is 5 per hour. Then traffic intensity is: [ ]
   a) 3/5 b) 5/3 c) 2/5 d) 5/2

10. _____ is the imitation of some real thing, state of affairs, or process. [ ]
    a) Stimulation b) Simulation c) Modeling d) all

Cont.....2

II Fill in the Blanks:

11. The characteristics of queue model are independent of _____.

12. _____ is the necessary condition for a system to be in steady state.

13. If the average number of customers served is α and the total number of customer is β, then _____ is the efficiency of (M/M/S): (∞/FCFS) model.

14. Total float TF_{ij} for the activity (i, j) is _____.

15. CPM stands for _____

16. _____ is a model for project management designed to analyze and represent the tasks involved in completing a given project.

17. An _____ a collection of distributions together with any associated parameters that are used as primitive inputs in a simulation model.

18. In a single server queuing model, if the queue length is Lq, then the number in the system is _____.

19. Simulation is basically a technique which is used for _____.

20. If a =2, b=3, m=10. If r_3 =1, the seventh random number will be _____.

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Code No: 58070 **Set No. 2**

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

IV B.Tech. II Sem., II Mid-Term Examinations, April-2014

MATHEMATICAL MODELING AND SIMULATION

Objective Exam

Name: _____ **Hall Ticket No.** | | | | | | A | | | | |

Answer All Questions. All Questions Carry Equal Marks. Time: 20 Min. Marks: 10.

I. Choose the correct alternative:

1. The reasons which are basically responsible for the formation of the queue should be that [ ]
   a) The average service rate is less than the average arrival rate
   b) output rate is linearly proportional to input
   c) output rate is constant and the input varies in random manner
   d) all of the above

2. Monte Carlo solutions in queuing theory are extremely useful in queuing problems [ ]
   a) that cannot be analyzed mathematically b) involving multi stage queuing
   c) to verify mathematically results d) all of the above

3. The customers joining a queuing system arrive in random manner and follow ____ distribution [ ]
   a) Normal b) Poisson c) Beta d) Delta

4. Each project can be sub divided in to [ ]
   a) Tasks b) Activities c)both a and b d) none

5. Given $L_q = 3.24$ customers $= 10/hr$, $\mu = 3/hr$ then $W_s =$ _____ [ ]
   a) 32.4 min b) 35.4 min c) 32.73 min d) 39.42 min

6. Arrival rate is 3 per hour. Service rate is 5 per hour. Then traffic intensity is: [ ]
   a) 3/5 b) 5/3 c) 2/5 d) 5/2

7. _____ is the imitation of some real thing, state of affairs, or process. [ ]
   a) Stimulation b) Simulation c) Modeling d) all

8. Which of the following is not considered as the negative behavior of customer according to queue disciplines [ ]
   a) Reneging b) Jockeying c) Blanking d) Boarding

9. The system of loading and unloading of goods usually follows [ ]
   a) FIFO b) LIFO c) SIRO d) pre – emptive

10. In a (M/M/1) : (∞/FCFS) model, the length of the system (L_s) is given by [ ]
    a) $\frac{\rho^2}{(1-\rho)}$ b) $\frac{\lambda^2}{(\mu-\lambda)}$ c) $\frac{\rho}{(1-\rho)}$ d) $\frac{\lambda^2}{\mu(\lambda-\mu)}$

Cont.....2

II Fill in the Blanks:

11. Total float TF_{ij} for the activity (i, j) is _____.

12. CPM stands for _____

13. _____ is a model for project management designed to analyze and represent the tasks involved in completing a given project.

14. An _____ a collection of distributions together with any associated parameters that are used as primitive inputs in a simulation model.

15. In a single server queuing model, if the queue length is Lq, then the number in the system is _____.

16. Simulation is basically a technique which is used for _____.

17. If a =2, b=3, m=10. If r_3 =1, the seventh random number will be _____.

18. The characteristics of queue model are independent of _____.

19. _____ is the necessary condition for a system to be in steady state.

20. If the average number of customers served is α and the total number of customer is β, then _____ is the efficiency of (M/M/S): (∞/FCFS) model.

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Code No: 58070 **Set No. 3**

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

IV B.Tech. II Sem., II Mid-Term Examinations, April-2014

MATHEMATICAL MODELING AND SIMULATION

Objective Exam

Name: _____ **Hall Ticket No.** | | | | | | A | | | | |

Answer All Questions. All Questions Carry Equal Marks. Time: 20 Min. Marks: 10.

I. Choose the correct alternative:

1. The customers joining a queuing system arrive in random manner and follow ____ distribution [ ]
   a) Normal b) Poisson c) Beta d) Delta

2. Each project can be sub divided in to [ ]
   a) Tasks b) Activities c)both a and b d) none

3. Given $L_q = 3.24$ customers $= 10/hr$, $\mu = 3/hr$ then $W_s =$ _____ [ ]
   a) 32.4 min b) 35.4 min c) 32.73 min d) 39.42 min

4. Arrival rate is 3 per hour. Service rate is 5 per hour. Then traffic intensity is: [ ]
   a) 3/5 b) 5/3 c) 2/5 d) 5/2

5. _____ is the imitation of some real thing, state of affairs, or process. [ ]
   a) Stimulation b) Simulation c) Modeling d) all

6. Which of the following is not considered as the negative behavior of customer according to queue disciplines [ ]
   a) Reneging b) Jockeying c) Blanking d) Boarding

7. The system of loading and unloading of goods usually follows [ ]
   a) FIFO b) LIFO c) SIRO d) pre – emptive

8. In a (M/M/1) : (∞/FCFS) model, the length of the system (L_S) is given by [ ]
   a) $\frac{\rho^2}{(1-\rho)}$ b) $\frac{\lambda^2}{(\mu-\lambda)}$ c) $\frac{\rho}{(1-\rho)}$ d) $\frac{\lambda^2}{\mu(\lambda-\mu)}$

9. The reasons which are basically responsible for the formation of the queue should be that [ ]
   a) The average service rate is less than the average arrival rate
   b) output rate is linearly proportional to input
   c) output rate is constant and the input varies in random manner
   d) all of the above

10. Monte Carlo solutions in queuing theory are extremely useful in queuing problems [ ]
    a) that cannot be analyzed mathematically b) involving multi stage queuing
    c) to verify mathematically results d) all of the above

Cont.....2

II Fill in the Blanks:

11. _____ is a model for project management designed to analyze and represent the tasks involved in completing a given project.

12. An _____ a collection of distributions together with any associated parameters that are used as primitive inputs in a simulation model.

13. In a single server queuing model, if the queue length is Lq, then the number in the system is _____.

14. Simulation is basically a technique which is used for _____.

15. If a =2, b=3, m=10. If r_3 =1, the seventh random number will be _____.

16. The characteristics of queue model are independent of _____.

17. _____ is the necessary condition for a system to be in steady state.

18. If the average number of customers served is α and the total number of customer is β, then _____ is the efficiency of (M/M/S): (∞/FCFS) model.

19. Total float TF_{ij} for the activity (i, j) is _____.

20. CPM stands for _____

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Code No: 58070 **Set No. 4**

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
IV B.Tech. II Sem., II Mid-Term Examinations, April-2014
MATHEMATICAL MODELING AND SIMULATION
Objective Exam

Name: _____ **Hall Ticket No.** | | | | | | A | | | | |

Answer All Questions. All Questions Carry Equal Marks. Time: 20 Min. Marks: 10.

I. Choose the correct alternative:

1. Given $L_q = 3.24$ customers $= 10/hr$, $\mu = 3/hr$ then $W_s =$ _____ [ ]
   a) 32.4 min b) 35.4 min c) 32.73 min d) 39.42 min

2. Arrival rate is 3 per hour. Service rate is 5 per hour. Then traffic intensity is: [ ]
   a) 3/5 b) 5/3 c) 2/5 d) 5/2

3. _____ is the imitation of some real thing, state of affairs, or process. [ ]
   a) Stimulation b) Simulation c) Modeling d) all

4. Which of the following is not considered as the negative behavior of customer according to queue disciplines [ ]
   a) Reneging b) Jockeying c) Blanking d) Boarding

5. The system of loading and unloading of goods usually follows [ ]
   a) FIFO b) LIFO c) SIRO d) pre – emptive

6. In a (M/M/1) : (∞/FCFS) model, the length of the system (L_s) is given by [ ]
   a) $\frac{\rho^2}{(1-\rho)}$ b) $\frac{\lambda^2}{(\mu-\lambda)}$ c) $\frac{\rho}{(1-\rho)}$ d) $\frac{\lambda^2}{\mu(\lambda-\mu)}$

7. The reasons which are basically responsible for the formation of the queue should be that [ ]
   a) The average service rate is less than the average arrival rate
   b) output rate is linearly proportional to input
   c) output rate is constant and the input varies in random manner
   d) all of the above

8. Monte Carlo solutions in queuing theory are extremely useful in queuing problems [ ]
   a) that cannot be analyzed mathematically b) involving multi stage queuing
   c) to verify mathematically results d) all of the above

9. The customers joining a queuing system arrive in random manner and follow ____ distribution [ ]
   a) Normal b) Poisson c) Beta d) Delta

10. Each project can be sub divided in to [ ]
    a) Tasks b) Activities c)both a and b d) none

Cont.....2

II Fill in the Blanks:

11. In a single server queuing model, if the queue length is Lq, then the number in the system is _____.

12. Simulation is basically a technique which is used for _____.

13. If a =2, b=3, m=10. If r_3 =1, the seventh random number will be _____.

14. The characteristics of queue model are independent of _____.

15. _____ is the necessary condition for a system to be in steady state.

16. If the average number of customers served is α and the total number of customer is β, then _____ is the efficiency of (M/M/S): (∞/FCFS) model.

17. Total float TF_{ij} for the activity (i, j) is _____.

18. CPM stands for _____

19. _____ is a model for project management designed to analyze and represent the tasks involved in completing a given project.

20. An _____ a collection of distributions together with any associated parameters that are used as primitive inputs in a simulation model.

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