Faculty of Engineering & Technology			
Ramaiah University of Applied Sciences			
Department	Computer Science and Engineering	**Programme**	B. Tech.
Semester	5th		
Course Code	CSC304A	**Course Title**	Computer Simulation
Course Leader	Santhoshi Kumari, Nithin Rao R		

Assignment					
Register No.		Name of Student			
Sections		**Marking Scheme**	**Max Marks**	**First Examiner Marks**	**Second Examiner Marks**
Part-A	A1.1	Introduction to discrete-time and continuous-time simulation	01		
	A1.2	Explanation of discrete event simulation and continuous event simulation of a system with suitable example	03		
	A1.3	Stance taken	01		
		Part-A Max Marks	**05**		
Part B.1	B1.1	Introduction	01		
	B1.2	Simulation Table	06		
	B1.3	Result and analysis	03		
		B.1 Max Marks	**10**		
Part B.2	B2.1	Introduction to problem solving approach	2		
	B2.2	Implementation	4		
	B2.3	Result and Analysis	4		
		B.2 Max Marks	**10**		
		Total Assignment Marks	**25**		

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Course Marks Tabulation				
Component- 1(B) Assignment	**First Examiner**	**Remarks**	**Second Examiner**	**Remarks**
A				
B.1				
B.2				
Marks (Max 25)				

Signature of First Examiner

Signature of Second Examiner

Please note:

1. Documental evidence for all the components/parts of the assessment such as the reports, photographs, laboratory exam / tool tests are required to be attached to the assignment report in a proper order.
2. The First Examiner is required to mark the comments in RED ink and the Second Examiner's comments should be in GREEN ink.
3. The marks for all the questions of the assignment have to be written only in the **Component – CET B: Assignment** table.
4. If the variation between the marks awarded by the first examiner and the second examiner lies within +/- 3 marks, then the marks allotted by the first examiner is considered to be final. If the variation is more than +/- 3 marks then both the examiners should resolve the issue in consultation with the Chairman BoE.

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Assignment

Instructions to students:

1. The assignment consists of **3** questions: Part A –**1** Question, Part B- **2** Questions.
2. Maximum marks is **25.**
3. The assignment has to be neatly word processed as per the prescribed format.
4. The maximum number of pages should be restricted to **15**.
5. Restrict your report for Part-A to 2 page only.
6. Restrict your report for Part-B to a maximum of 13 pages.
7. The printed assignment must be submitted to the course leader.
8. **Submission Date:** 04/11/2019
9. **Submission after the due date is not permitted.**
10. **IMPORTANT**: It is essential that all the sources used in preparation of the assignment must be suitably referenced in the text.
11. Marks will be awarded only to the sections and subsections clearly indicated as per the problem statement/exercise/question

PART A **10 Marks**

In the 1950s and 1960s, before digital computers were as readily available, as fast, and as inexpensive as they are today, continuous-time system simulations were often performed using analog computers. Systems were modelled with integral and differential equations. The students are required to debate on topic:

"It is Essential to perform all simulations in discrete-time/discrete-event simulations, despite the fact that most physical systems are really continuous-time"

The report should be structured along the following lines.

1.1 Introduction to discrete-time and continuous-time simulation.

1.2 Identify and explain advantage and disadvantages of discrete event simulation and continuous event simulation of a system by taking suitable example.

1.3 Stance taken, justification and Conclusion

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PART B

B.1 **(10 Marks)**

The occurrence of rain fall in a city on a day is dependent up on whether or not it rained on previous day. If it rained on previous day, the rain distribution is given by

Event	Probability
No rain	0.50
1cm. rain	0.25
2cm. rain	0.15
3cm. rain	0.05
4cm rain	0.03
5cm rain	0.02

If it did not rain the previous day the rain distribution is given by

Event	Probability
No rain	0.75
1cm. rain	0.15
2cm. rain	0.06
3cm. rain	0.04

Simulate the city weather for 10 days and determine by simulation the total day without rains and as well as the total rain during the period.

Use any ten random numbers between 10 to 100 for conducting simulation. Assume that for the first day of the simulation it had not rained the day before.

Your report should include:

B1.1 Introduction

B1.2 Simulation Table

B1.3 Result and analysis

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B.2 **(10 Marks)**

Develop and implement an ATM simulation system in Java for 12 hours, by selecting a random integer between 1 and 4 to determine the minute at which customer arrives using the following procedure:

- At first customer's arrival time: Determine the customer's service time (random integer 1 to 6) Begin servicing the customer and Schedule arrival time of next customer (random integer 1 to 4 added to current time)
- If the next customer arrives: enqueue the customer and Schedule the arrival time of the next customer.
- If the service was completed for the last customer: Dequeue the next customer to be serviced and determine the customer's service completion time.

Your report should include:

B2.1 Introduction to problem solving approach

B2.2 Implementation

B2.3 Result and Analysis