UNIVERSITY OF ELDORET

COM 426: SIMULATION AND MODELING

Note that this is an individual assignment, copying will result in the final mark being divided by the number of similar copies

Due date: 9th July 2019

Q1

Write a C or Java program to implement the single queue single server discrete event simulation model with 1000 runs. Assume the inter arrival and service times are distributed as exponential random variables with mean 1 minute for the inter arrival times and mean 0.5 minute for the service times. Output the three measures of performance namely; the average delay in queue, the average number of customers in queue, and the proportion of time the server is busy.

(20 marks)

Q2

Discuss the process of the Monte–Carlo simulation

(8 marks)

Q3

Explain the following methods of testing the randomness of a sequence of numbers giving and example in each case.

a) Frequency Test (6 marks)
b) Run Test (6 marks)